BRIEFING PAPERS ON PROTECTED AREA MANAGEMENT

U.S. DEPARTMENT OF THE INTERIOR
INTERNATIONAL TECHNICAL ASSISTANCE PROGRAM

May 2023

Table of Briefing Papers
Concerning Protected Area Governance and Management

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Executive Summary of Briefing Papers
Concerning Protected Area Governance and Management

I. INTRODUCTION

The U.S. Department of the Interior, International Technical Assistance Program (USDOI-ITAP) provides protected area policy and technical assistance to the Government of the Republic of Georgia. The US DOI-ITAP Team has recruited more than 20 subject matter experts from the U.S. National Park Service, Fish and Wildlife Service, Bureau of Land Management, Solicitor's Office, and other agencies to form a protected areas policy team. The Team has written 41 briefing papers providing summaries and best practices in several areas of US-based protected areas policy. The papers provide examples of best practices in areas including: planning systems; resource management; visitor services and sustainable uses; public outreach and environmental education; law enforcement; sustainable infrastructure and facilities; and institutional strengthening. To facilitate use of these papers, we provide a short summary of each below.

II. INFRASTRUCTURE & FACILITIES

The Sustainable Infrastructure papers outline sustainable practices for designing and operating the facilities and systems that are critical to support protected areas. The papers address sustainable design principles and provide demonstration examples and conclusions regarding the best practices for sustainable infrastructure.

The *Facility Investment Strategy for Georgia* (link) paper describes a best practice facility investment strategy. It notes that a facility investment strategy is useful for many reasons including building public confidence by providing a record of major investment decisions from beginning to end.

Managing architectural and engineering projects requires a system for management of all project information and records. The *Information and Records Management System* (link) paper notes that a well-designed system collects, stores and disseminates project information and records. This system provides a history of each project, including design decisions, and can provide useful information in the future. For example, photos and drawings of buried utilities provide considerable value when new projects are constructed. The paper illustrates the National Park Service information management systems which maintain system-wide records in electronic format.

The paper *Sustainable Principles for Infrastructure* (link) provides an overview of infrastructure systems, defines key terms, and provides guiding principles in sustainable infrastructure, including considerations of environmental sustainability, cultural resources, socio-economic, institutional and financial factors.

The *Sustainable Visitor and Management Facilities* (link) paper notes that, to support a high volume of visitors, some protected areas will need to provide infrastructure for personnel and visitors. The paper provides guidance in designing facilities to promote quality visitor

experiences and provide safe and healthy work and living spaces, while considering the economic, social, cultural and natural environments. The paper provides best practices in siting new facilities, renovating existing structures, and safeguarding cultural heritage.

The *Transportation* (link) briefing paper addresses considerations in designing and maintaining motor vehicle roads, bridges, and other mechanized systems as well as non-mechanized transportation such as pedestrian, horse and bicycle trails. The paper focuses on the history of transportation systems in the National Park Service and highlights specific transportation assets, such as scenic roads. The paper provides best practices from the National Park Service management policies; it illustrates examples of several iconic roads in national parks and provides factors to consider in transportation design such as: natural and cultural resources; construction techniques; visitor capacity management to reduce demand on roads and overcrowding; and use of partnerships to design transportation systems.

The *Utilities* (link) briefing paper describes best practices in choosing a utility site including considerations of access, resource sensitivity, visitation, safety, and size. It notes that utilities should be planned to: achieve sustainability to ensure resilience to climate and natural disaster risks; use energy efficiently and economically; protect natural and cultural resources; and comply with best practices in environmental and health life safety.

III. INSTITUTIONAL STRENGTHENING

The Institutional Strengthening Subgroup prepared papers focused on three themes: Leadership; Organizational Development; and Partnerships. These papers illustrate US practices in developing an engaged workforce, effectively leading people, and managing organizations in a transparent manner while adapting to changing conditions.

A. Leadership

Human Capital: Awards, Training, and Advancement (link) outlines important practices in managing "human capital," which is the term used in federal human resources to describe the skills, knowledge, and experience possessed by the workforce. Developing and recognizing human capital through training, merit awards, and advancement is a key policy of the federal government as an institution. The paper provides examples and best practices including: valuing the workforce, onboarding (i.e. integrating new employees), training, performance appraisals, merit awards, and advancement.

Leadership Development (link) details the importance of leadership training to effectively lead people, manage organizations, adapt to changing conditions, and support new leaders as workforces change. This briefing paper provides an overview of the findings, demonstration examples, and conclusions regarding the universal best practices that can be extracted from United States leadership training policies. The paper outlines the leadership structure in federal agencies, federal law concerning leadership development, and examples of leadership development programs for staff, supervisors, managers, and senior executives.

B. Organizational Development

Agency Organic Acts (link) outlines the major laws (also known as "acts") detailing the missions for Federal agencies managing protected areas. Most land managing agencies have an "organic" act which provides the overall agency mission, organizational structure, agency authorities, and the processes to implement the mission, such as through land use planning. Organic acts are important because they implement the rule of law through providing legal standards for agencies and guiding public expectations regarding how the agency will manage land and natural resources. For example, organic acts can direct how agencies engage with partners, acquire and dispose of land, accommodate multiple uses, provide for visitation and research, enforce laws, and involve the public. This paper provides an overview of organic acts governing four land managing agencies in the United States and concludes with recommended best practices in organic acts.

Agencies in the United States, and many other nations, inform their decision-making and engage the public through preparation of an environmental impact statement (EIS) (alternatively known as "environmental impact assessment") under the National Environmental Policy Act (NEPA) in the United States or similar law in other nations. The paper ***Environmental Impact Assessments*** (link) provides the foundation for understanding of the purpose of impact assessments, the key components of an assessment, and the guidelines for designing each component to inform decision-making and engage the public.

Strategic Planning is a management tool to help an organization reach its goals and meet the needs of its constituents. It is an important method to effectively manage organizations, adapt to changing conditions, lead people with shared goals, and achieve desired organizational goals. The paper ***Strategic Planning*** (link) provides an overview of strategic planning, with demonstration examples where relevant, and conclusions regarding the "universal best practices" that can be extracted from United States strategic planning policies.

The ***Transparency and Public Participation*** (link) paper summarizes key features of the executive branch in the United States government that are intended to promote transparency, public participation, accountability, and lack of corruption. The paper notes that an open executive branch of the government strives to be transparent, participatory, and collaborative. Doing these things not only increases agency accountability but also builds trust with people and stronger support for agency programs. Information sharing allows citizens to participate in an informed manner in public processes and hold their government agencies accountable. For this reason, transparency is a fundamental element of stopping corruption. Corruption can be further constrained by combining transparency with clear ethics rules that prohibit officials from seeking private gain through use of their official positions.

C. Partnerships

The paper ***Memorandums of Agreement and Understanding*** (link) explains that Memoranda of Understanding or Agreement ("MOUs") are an effective tool to define the nature of a partnership, its elements, goals, and measures for success. An MOU defines the responsibilities of each party in the agreement, provides the scope and authority of the agreement, clarifies terms, and outlines compliance issues. MOUs provide a line of communication between

community, local, tribal, state, and federal policy makers. The paper provides a review of U.S. practices for structuring an MOU including nine typical sections: introduction, purpose, scope, definitions, policy and responsibilities, obligations, maintenance, oversight, and updates.

Partnership Development is an organizational management tool that enables organizations to meet their mission more effectively through collaborative action. The paper ***Partnership Development*** (link) notes that partnerships increase the ability to build support, create shared values, and work on shared goals for protected areas. This briefing paper provides an overview of the findings, with demonstration examples where relevant, and conclusions regarding the "universal best practices" that can be extracted from partnership practices of federal conservation organizations in the United States. It addresses identifying common needs and shared goals and the tools for a successful outcome such as open communication, establishing a sustainable structure for the partnership, and understanding the scope of the partnership.

IV.   LAW ENFORCEMENT

The law enforcement papers discuss the legal and constitutional structure of law enforcement for protected area management, as well as methods to deter illegal and harmful activities. The papers emphasize the importance of clear policy as well as the role of public and community engagement for effective law enforcement of protected areas.

The paper ***Case Construction Strategy for Optimal Deterrent Impact: Ecosystem Protection*** (link) provides a case summary demonstrating a successful law enforcement program to deter illegal activity. The paper emphasizes the importance of creating a public narrative message that effectively discourages future harm to protected area resources. It is not enough for law enforcement to take legal action but, rather, a thoughtful deterrent program is needed. The paper illustrates a successful effort to prevent illegal marijuana growing in Hawaii Volcanoes National Park. A law enforcement approach should be based on a combination of teamwork, education, outreach, and effective media presentations that recruit public support, build a sense of fairness in the community and establish peer pressure as a deterrent against future depredations on park resources. Law enforcement resources are never ubiquitous enough to prevent illegal activity alone – but public support for resource protection creates virtual force multiplication.

The paper ***Constitutional and Statutory Underpinnings in the U.S. National Park Service*** (link) provides discussion on the importance of tying a park's law enforcement program to the constitutional powers that allow a park to protect its resources and the people who visit. The paper provides examples of constitutional powers and concludes that it is important to set successful law enforcement precedents and ensure that all law enforcement personnel are trained in their authorities.

The paper ***Search and Rescue, Emergency Medicine Contextual Framework*** (link) describes the internal and collaborative structures and underlying philosophies that the National Park Service uses to provide these services to the public and its workforce. The paper discusses questions common to search and rescue organizations and operations, which include duty to service, training, preventing accidents, and staffing. The paper provides demonstration examples from Yosemite National Park, as well as examples of national search and rescue infrastructure,

funding, and training. The paper concludes with general information about search and rescue response and a summary of how these operations can thrive through organization and partnerships with surrounding entities.

V. PUBLIC OUTREACH AND ENVIRONMENTAL EDUCATION

The public outreach and environmental education papers explore ways for protected area managers to engage the public and partner with individuals and communities to promote stewardship and environmental education. First, the papers discuss promoting sustainable tourism, working with adjacent communities to provide gateways with facilities and services supporting protected areas, and the role of cooperating associations to build capacity for protected area management. Next, the papers discuss engaging with the public through: news releases and public service announcements; citizen science; and volunteer programs. Finally, the papers discuss interpretive programs including personal (in-person) and non-personal services (e.g. exhibits and brochures).

Sustainable tourism takes full account of its current and future economic, social, and environmental impacts while addressing the needs of visitors, the industry, the environment, and host communities. The *Tourism* (link) briefing paper discusses best practices for promoting sustainable tourism on national lands, as illustrated through BLM application of a US national strategy. The paper illustrates several goals and strategies from the BLM plan such as enhancing promotion efforts, providing user-friendly tools and resources, enabling tourism infrastructure, and measuring results. The paper concludes with best practices to increase recreation opportunities, marketing and tourism.

Developing community involvement near protected areas can be key to successful management. The paper *Gateway Partnerships* (link) explores the establishment and implementation of Gateways in adjacent communities that provide visitor information and services. The BLM has utilized Gateways for decades as a means to build public support, community connection, stewardship and preservation of fragile public land natural resources. The paper provides a detailed case study of gateway partnerships at the California Coastal National Monument.

Cooperating associations are nonprofit charitable organizations dedicated to enhancing the work of federal public land agencies. Cooperating associations assist land management agencies in capacity building through staff and revenue, and are a means to build and support organized local community stewardship. The paper *Cooperating Associations* (link) discusses the role of these organizations for effective land management. The BLM has utilized cooperating associations as a way to build public support, achieve community-based conservation goals, and leverage resources. The paper provides a detailed case study of cooperating associations affiliated with public lands managed by the BLM California Desert District.

Land management agencies use formal public outreach to inform the general public on land management activities and decisions. The *Public Outreach* (link) paper discusses the formal outreach process prescribed through the National Environmental Policy Act (NEPA) and outlines other management regulations and policies that govern how DOI agencies provide public

information and outreach. The paper provides examples of outreach under the Alaska National Interest Lands Conservation Act (ANILCA).

News Releases and Public Service Announcements (PSAs) are important communication tools to support outreach or civic engagement. The ***News Releases and Public Service Announcements*** (link) paper provides best practices and demonstration examples on creating and sharing news releases and PSAs. They should include short and pithy mission statements in all formats. The paper provides advice on timing, formatting, media (e.g. video, radio, web posting), developing scripts and storyboards, and publicizing.

For many people, learning is best achieved through hands-on experience. The ***Citizen Science*** (link) paper describes citizen science programs that can be a valuable tool to engage the public, particularly youth, in hands-on learning experiences that foster interest in environmental education and conservation. Well-designed Citizen Science programs can provide an important complement to official statistics, administrative data, and scientific research to inform decision-making. Through these programs, citizens lend their eyes and ears to park officials as they collect data throughout parks. The paper provides demonstration examples and universal best practices on data stewardship, partnering, public outreach, and designing projects. For example, the paper discusses the NPS teacher—ranger—teacher program, the FWS eBird Trail Tracker, and the GLOBE Program which works with schools (K-12 and beyond) worldwide to train teachers and engage students in data collection.

Individual volunteers or organized volunteer groups provide important assistance to enable agencies to provide high levels of natural and cultural resource management, infrastructure maintenance and visitor services. Volunteers also provide a critical link between the lands and the surrounding human communities. The ***Volunteers*** (link) paper provides best practices in management of a volunteer program. The paper provides demonstration examples including discussion of how an organized volunteer group helped control damage from off-highway-vehicle recreation in Colorado while still providing enjoyable recreation opportunities meeting the needs of motorized users and non-motorized users including hikers, mountain bikers, horse riders, off-trail explorers and ranchers.

Interpretation is a communication process with the goal of the visitor gaining an understanding, appreciation, and ultimately interest in stewardship of natural and cultural resources. It connects the visitor to the site's resources. The ***Introduction to Thematic Interpretation*** (link) paper provides best practices in developing a site's comprehensive interpretive program. The paper illustrates interpretive themes through demonstration examples such as the role of fire in nature. The paper outlines key interpretation principals, such connecting to the personality or experience of the visitor. Further, interpretation combines many arts, whether the materials presented are scientific, historical or architectural.

The paper ***Personal Services*** (link) illustrates best practices in providing Personal Services to visitors to protected areas. Personal Services for protected area visitors consist of: Visitor Center Contacts; Environmental Education; Guided Walks, Talks, Demonstrations, and Roving Contacts; and Youth Programs including Junior Ranger Programs. These services provide basic information to enhance visitor experience, safety, and enrichment. The paper provides examples

from several national parks. The paper concludes that, to ensure quality personal services are presented to the visiting public, protected areas should develop a formal multi-tiered training and developmental program for employees and volunteers presenting these activities.

As with Personal Services, protected areas can offer a variety of types of Non-personal Services Interpretation to provide for a safe visit and educate users. The Non-Personal Services component of Thematic Interpretation is comprised of five major components: Audio Visual Programs; Social Media; Museum Exhibits; Wayside Exhibits and Publications; and Branding and Graphic Identity. The *Non-Personal Services* (link) paper provides best practices in developing these components and provides examples concerning museum exhibits, wayside exhibits, and brochures.

VI. RESOURCE MANAGEMENT

Effective natural and cultural resources management is key for managing protected areas and their resources. The papers on resource management explore topics including landscape connectivity, non-material cultural resources, consumptive uses of resources (e.g., subsistence), protecting night skies and natural sounds; managing invasive species; addressing climate change and managing museums and archives.

Habitat connectivity between landscapes is the underpinning of Conservation Biology. The rate at which landscapes and migration corridors are being eroded in recent times is unprecedented and therefore of foremost importance in species conservation. The *Habitat Connectivity and Landscapes* (link) briefing paper examines some of the reasons for this importance and provides three North American examples of migration corridors. It also provides recommendations on conserving landscapes and corridors in protected area planning and management. The paper recommends best practices including: consideration of the ability of species and ecological resources and processes to move through landscapes; identifying connective corridors early in the planning process; engaging the political system in order to facilitate corridor protection; considering landscapes from the perspective of the organisms and processes in question; and planning for climate change.

A special designation adopted by UNESCO in the early 2000s recognizes that "cultural heritage" comprises more than objects, buildings, and special places. "Non-material cultural resources" are expressions of culture itself. Intangible cultural heritage is traditional, contemporary, and living at the same time; inclusive and contributing to a sense of identity; and dependent on those whose knowledge of traditions, skills and customs are passed on to the rest of the community. The paper *Non-Material Cultural Resources, Ethnography, Cultural Landscapes* (link) provides comprehensive demonstration examples about preserving and celebrating non-material cultural resources including: Cultural Diversity of the Mississippi Delta Region at Jean Lafitte National Historical Park and Preserve; New Bedford Communities of Whaling: People of Wampanoag, African, and Portuguese Island Descent, 1825–1925 (ethnography); and Experiencing Cultural Landscapes along 2,700 miles of the Old Spanish National Historic Trail. The paper concludes with universal best practices such as identifying resources to be preserved, coordinating with partners and communities, developing comprehensive plans, and evaluating ongoing efforts.

Consumptive uses of resources within National Park Service managed lands in 49 of the 50 States in the United States is very limited. But, in Alaska, a unique statute provides for subsistence use in parks. The ***Consumptive Use of Resources (Subsistence)*** (link) paper discusses the federal lands inside the State of Alaska managed under the Alaska National Interest Lands Conservation Act (ANILCA). This law protects 104,000,000 acres/42,087,306 hectares. At the same time, it authorizes the use (hunting, trapping, fishing & gathering) of flora and fauna, inside the boundaries of protected areas that have historically provided food, fuel, shelter and tools to people living nearby. These subsistence uses actively continue today serving an estimated 130,000 people within Alaska. The paper highlights key sections of ANILCA, including its extensive public involvement program, and provides commentary on implementing these provisions. The Universal Best Practice section highlights lessons learned through 40 years of carrying out the law.

Natural sounds and night skies are inspirational to millions of park visitors, fundamental to the historical and cultural context of protected areas, critical for park wildlife, and vital to the protection of wilderness character. The ***Natural Sounds and Night Skies*** (link) paper provides an overview of the resources and best management practices on natural soundscapes, overflights, night skies, outdoor lighting, and visual scenery. The paper concludes with recommended best practices including using science-based stewardship to make informed decisions; providing visitor education on natural sounds and night skies; developing air tour management plans to mitigate adverse impacts; and following sustainable outdoor lighting principles.

Invasive species are non-native organisms whose introduction to a particular ecosystem can cause economic or environmental harm. The ***Invasive Species*** (link) paper notes that an invasive species management strategy is a collection of activities aimed at preventing, eradicating, containing, and/or suppressing targeted invasive species. Deciding which activities to employ and where can be a complex process because there are many factors to consider, such as species abundance and ecology; site characteristics, sensitive resources, accessibility; capacity to implement (people, funding, and technical expertise); and socio-political issues. The paper concludes with best practices to manage invasive species including Collaborative Conservation; Use of Science: Managing on a Watershed or Ecosystem Scale; Promoting Innovative Solutions; Integrated Pest Management; Prioritizing Cost-effectiveness: and Avoiding Unintended Impacts of Invasive Species Management.

The ***Historic Sites and Districts*** (link) paper discusses the processes for managing historic buildings and structures, means for documenting historic architecture, and how a historic or archaeological district is established. Designating and maintaining historic districts ensures that unique features of a city, state, or even a nation, are recognized. Benefits include maintaining historic character of an area and providing economic opportunities through tourism and investment. The paper notes the seminal cultural resource law, the National Historic Preservation Act (NHPA) and its creation of the National Register of Historic Places. The paper provides demonstration examples of historic districts in different regions of the United States. A description of best practices includes the role of establishing a registry, developing guidelines, providing incentives such as tax breaks for property owners of historic sites, and considering ordinances for site protections.

The paper on the *National Park Service Museum Program* (link) describes the role of agency and park museum collections in preserving the cultural and natural history of the nation, as associated with the mission of the National Park Service (NPS). Collections yield information for managing park resources and support scientific studies and publications. They are used in exhibitions and interpretative and educational programs and provide source material for future research, exploration, and learning. Collections are a non-renewable resource that must be preserved, documented, studied, and interpreted for the public's benefit and enjoyment. The paper provides description, definitions and legislative mandates related to NPS museum collections and the history and structure of the NPS museum program. In addition, the paper provides best practices in collections management, using the framework of the NPS museum program. The paper also includes demonstration examples of ways the NPS has provided professional development and expertise, as well as access to collections for use by the general public and professionals.

The *Cultural Resources – Archaeological Sites* (link) paper discusses the major provisions of United States law and policy that guide decision making for the management and protection of these resources. A discussion of how other countries manage their cultural resources, in contrast to the United States, is also provided to help inform a series of Universal Best Practices. The primary law for managing archaeological sites in the United States is the National Historic Preservation Act of 1966. This law stresses the importance of the historic and cultural heritage of the United States and recognizes that development threatens these types of resources. The law sets out the development of a National Register of Historic Places and a historic preservation program, stands up state historic preservation programs, sets up a training program for federal workers, establishes an independent federal body known as the Advisory Council on Historic Preservation, and requires federal agencies to consider the effects of their actions on historic properties. The paper concludes with case studies on 1. historic preservation consultation in oil field development and 2. an archaeological resource looting prosecution.

Healthy ecosystems, habitats and wildlife populations are critical for protecting biodiversity and producing positive health benefits for humans and livestock. Well-managed protected areas are a cornerstone for healthy ecosystems. However, diseases emerging in wild habitats that "spill over" to humans from animals ("zoonotic diseases") or insects ("vector-borne diseases") are on the rise. Moreover, humans carry diseases that in turn may be transmitted to wild animals. The *Ecosystem, Wildlife and Human Health* (link) paper details management tools to control diseases emerging in wild habitats. The paper highlights inter-disciplinary "One Health" approaches that integrate ecological, animal, and human health expertise. One Health includes efforts to increase the recovery and resilience of wild habitats, reduce human interference with nature, improve detection and early warning of spillover risks, and address specific risk pathways. The paper provides demonstration examples concerning bison health in North America and screwworm infestations in Key Deer in Florida.

Non-consumptive uses of protected areas are every-day uses by visitors such as hiking, photography, wildlife observation, picnicking, and camping. When properly managed, these activities do not injure the health or value of an area's resources. The *Non-Consumptive Uses* (link) paper discusses analysis that protected area managers should undertake in deciding whether and how to regulate non-consumptive uses. The paper outlines a variety of possible visitor use

impacts and provides samples of regulations used by the US Fish and Wildlife Service and National Park Service to manage non-consumptive uses. The paper also discusses best methods to educate users on these regulations.

Archivists have developed sets of standards and principles for managing archival holdings that have achieved professional acceptance throughout the world, and which the archival community universally regards as "Best Practice." The "Holy Trinity" of archival management encompasses Provenance, Hierarchical Organization, and Original Order. The physical arrangement, description, and reference servicing of archival holdings all proceed from these three fundamentals. The management and use of archival holdings would be impossible without them. Further, archivists must decide whether that body of materials has sufficient significance to be retained at all. Thus, the archival profession has also developed a series of tests that can be applied, whereby a body of materials being considered for permanent retention may be evaluated according to Evidential Value, Informational Value, Legal Value, and Intrinsic Value. The ***Managing Archives*** (link) paper discusses these standards and illustrates them through several examples.

The impacts of global climate change affect the ecosystems national protected areas. The National Park Service (NPS) and other U.S. protected area management agencies are rising to the challenge. NPS has adopted a comprehensive strategy that emphasizes science, facilitates adaptation to the impacts of climate change, seeks to set an example through sustainable operations that mitigate the emissions responsible for climate change, and leverages the unique position of the nation's protected areas to communicate and educate the public about climate change. The ***Climate Change, Natural Protected Areas and Cultural Resources*** (link) briefing paper describes the core elements of NPS's climate response strategy and includes several case study examples that demonstrate the application of tools, strategies and best practices to understand issues, engage stakeholders, and develop science-informed responses to climate change impacts in protected areas.

VII.   VISITOR SERVICES AND USES

Visitor services and recreation uses are key components of land and protected area management in the United States. Many organic acts for DOI agencies include providing for recreation and visitor and public services. Agencies typically manage to provide balanced opportunities for the public through visitor services while not impairing natural and cultural resources. The visitor services and uses papers cover topics of commercial services and visitor use management.

Protecting sensitive natural and cultural resources while providing visitors with meaningful ways to connect to their public lands is a balancing act land managers engage in daily. To ensure these special places and the benefits they generate persist into the future, federal land managers use a proactive and adaptive process called "visitor use management" (VUM) to guide planning efforts and inform decisions across public lands and waters nationwide. Using VUM strategies and tools, the agencies can ensure appropriate and equitable access to iconic landscapes while protecting the nationally significant resources that draw people to these lands and waters in the first place. The paper ***Visitor Use Management*** (link) discusses application of VUM and

illustrates concepts with a case study at Delaware Water Gap National Recreation Area. The paper concludes with recommendations concerning flexible and adaptable strategies.

Commercial services are generally defined as any visitor activity provided by a third-party entity that generates revenue from the provision of that service. Regulated commercial services on protected areas and public lands can provide otherwise unavailable services that can enhance protected area use, visitor infrastructure, and the local economy. The paper ***Concessions and Commercial Services*** (link) discusses regulations and conditions of concession and commercial services for three different DOI agencies: the NPS, FWS, and BLM. Each of these major U.S. land management agencies has laws, regulations, and policy that guide concessions and commercial activities within their land boundaries. The NPS and FWS tend to focus concessions and commercial services around visitor activities. The BLM generally allows more uses of public land governed by less restrictive regulations and procedures.

DEPARTMENT OF THE INTERIOR - INTERNATIONAL TECHNICAL ASSISTANCE PROGRAM
GEORGIA PROTECTED AREAS POLICY REVIEW
INFRASTRUCTURE & FACILITIES SUBGROUP
JUNE 14, 2022

Project Phase 2.3.5 – Facility Investment Strategy for Georgia
Team Members: Larry Walling, Mike Seibert, Ming-Yi Wong, Mary Hudson, Gayle Burgess

I.   Introduction.

New construction and the repair and rehabilitation of protected area (PA) facilities of all types involve some of the largest expenditure of funds made by the Agency of Protected Areas (APA). The process of planning, designing and constructing of roads, transportation systems, utility systems and all types of administrative and visitor use facilities is complex, lengthy and commonly occurs over a number of years. A facility investment strategy is useful for many reasons and serves many purposes. It is a tool which can build public confidence in governmental agencies and personnel by providing a record of costly investment decisions from beginning to end. It should be multidisciplinary and include personnel from the PA and APA, the Ministry of Environmental Protection and Agriculture (MEPA), perhaps allied ministries, allied professionals and peers from the public. It is a transparent process.

II.   Overview, Discussion, Demonstration Examples.

The Facility Investment Strategy serves as Ministry/APA facility investment process strategy and decision-making guideline intended for the use of directors of PA's, facility managers, program managers, and Ministry/APA leadership. It guides users to determine whether a PA should submit a project for funding. Also, the Facility Investment Strategy articulates management strategies to improve asset sustainability and guide decision-making about asset capital improvements including construction of new facilities; replacement facilities; or disposal of facilities across the Ministry/APA facility portfolio.

An Investment Review Board (IRB) serves as the governing authority that sets strategic direction for investment in assets that comprise the Ministry/APA facility portfolio. The Investment Review Board owns, maintains, and implements the Facility Investment Strategy.   The IRB is made up of executive level APA/Ministry employees and external advisors who review design and construction projects for cost-effectiveness and the responsible use of APA construction monies. The Facility Investment Strategy is a living document and will be reviewed annually each (insert appropriate month) by the Investment Review Board in advance of the budget call.

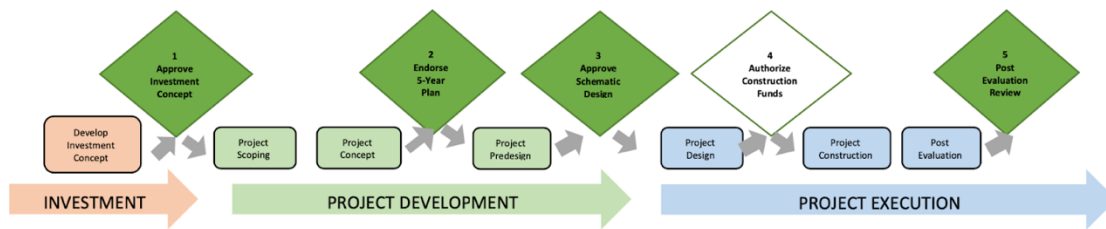**Facility Investment Strategy Phases.**

1. INVESTMENT CONCEPT

a.   **Develop Investment Concept.** PA interdisciplinary team develops concept, grounded in the PA's Strategic Facility Investment Plan (if complete); concept is approved by Director of PA.
b.   **Approve Investment Concept.** IRB reviews and approves (if approved, investment is eligible for project scoping funding).

2. PROJECT DEVELOPMENT

a.   **Project Scoping.** PA develops investment concept into a scoped and costed project suitable for entry into Project Management Information System (PMIS-see definition below).
b.   **Project Concept.** PA prepares PMIS; APA confirms and submits to the Service-wide Comprehensive [budget] Call fund source; MCD (?) validates it is within scope tolerances of the previously approved investment concept.
c.   **Endorse 5-year Plan.** Fund Source Manager validates PMIS meets fund source criteria and prioritizes into the 5-year plan; IRB/delegate endorses 5-year plan. Design funds are authorized.
d.   **Project Predesign.** APA/Ministry develops project pre-design package. This may be accomplished inhouse or by contracted A/E depending on available expertise.
   .   **Approve Schematic Design.** IRB/delegate reviews and approves schematic design.
(Funds released for full design)

3. PROJECT EXECUTION

a.   **Project Design.** APA/Ministry develops and finalizes project design package.
b.   **Authorize Construction Funds.** APA reviews and authorizes approval form. *[insert appropriate name of form when Georgia develops one]*
c.   **Project Construction.** PA or APA executes project. Issues tender. Selects contractor. Awards construction contract.
d.   **Post Evaluation.** PA or APA prepares post evaluation report.
e.   **Post Evaluation Review.** IRB/delegate conducts post-evaluation review.

Flowchart

Decision diamonds:
1. Approve Investment Concept
2. Endorse 5-Year Plan
3. Approve Schematic Design
4. Authorize Construction Funds
5. Post Evaluation Review

Activities:
Develop Investment Concept → Project Scoping → Project Concept → Project Predesign → Project Design → Project Construction → Post Evaluation

Phases:
INVESTMENT | PROJECT DEVELOPMENT | PROJECT EXECUTION

Legend	
	Investment Concept Activity
	Project Development Activity
	Project Execution Activity
	Decision
	Investment Review Board Function

Supporting Information

Develop Investment Concept – Protected Area and APA interdisciplinary team develop concept, grounded in PA's SFIP (if complete); concept is approved by PA Director, IRB and APA.

Approve Investment Concept – IRB reviews and approves (if approved, investment is eligible for project scoping funding).

Project Scoping-PA develops investment concept into a scoped and costed project suitable for entry into PMIS.

Project Concept-PA prepares PMIS; APA confirms and submits to SCC fund source; MCD validates it is within scope tolerances of the previously approved investment concept.

Endorse 5-year Plan-Fund Source Manager validates PMIS meets fund source criteria and priorities into the 5-year Plan; IRB/delegate endorses 5-year Plan. Design Funds are authorized.

Project Pre-Design-PA/APA develops project pre-design.

Approve Schematic Design-IRB/delegate reviews and approves schematic design.

Project Design-PA/APA develops and finalizes project design.

Authorize Construction Funds-APA/delegate reviews and authorizes Director APA Approval Form.

Project Construction-PA/APA executes project.

Post Construction-AP/APA prepares post evaluation report.

Post-Evaluation Review-IRB/delegate conducts post-evaluation review.

Note:
- If concept exceeds tolerances (scope, cost) prior to, or at, Project Concept, process starts over.
- If project exceeds tolerances at any activity following Endorse 5-year Plan, it must be reviewed by the IRB.
- If project stays within tolerances following Investment Concept Approval, further review/approval may be delegated.

GEORGIA FACILITY INVESTMENT STRATEGY

DEFINITIONS

MAJOR CONSTRUCTION DIVISION

A division providing policy and program management of large infrastructure projects. The division establishes priorities for accomplishment of projects while providing for cohesive and effective allocation of funding. Long-term and short-term planning, design and construction of facilities maintenance and new construction projects from a variety of fund sources are within the scope of services provided by this division. Benchmarks are established and progress is tracked for each phase of a project's planning, design and construction. Administrative assistance for the Investment Review Board is also provided.

PROJECT MANAGEMENT INFORMATION SYSTEM-PMIS

A Ministry-wide intranet application within the Ministry of Environmental Protection and Agriculture (the Ministry) to manage information about requests for project funding. It enables protected areas and APA offices to submit project proposals to be reviewed, approved and prioritized at protected areas, the APA and the Ministry. PMIS is a centralized web-based relational database management system (RDBMS) hosted and maintained at the Ministry level.

In response to a budget call for a particular APA program for a specific fiscal year, project proposals are submitted, reviewed, approved, prioritized and then formulated under an available funding source by utilizing PMIS. During formulation process for a budget call, a program manager at the Ministry or a budget officer at APA determines which project funding

requests meet the eligibility criteria for the call to be considered as part of the Ministry budget for a specific fiscal year.

RELATIONAL DATABASE MANAGEMENT SYSTEM -   RDBMS.
"A relational database is a type of database that stores and provides access to data points that are related to one another. Relational databases are based on the relational model, an intuitive, straightforward way of representing data in tables."

PMIS PROJECT STATEMENT.
The statement resulting from the budget call process that includes a project description, justification, amount of funds requested and a conceptual cost estimate based on unit costs (i.e., acres) of similar construction.

PROJECT SCOPING/PROJECT PROGRAM.
"The Project Program includes a **Site Analysis**, a **Site Program**, and an **Architectural Program**. (If the project does not include a building or structure, an Architectural Program may not be required. Conversely, if the project is strictly a building, with no site components, a Site Analysis and Site Program may not be required.)"
Ref: https://www.nps.gov/dscw/definitionsdc_p.htm#predesign

PROJECT PRE-DESIGN.

"Predesign consists of the Project Program that has two integrated components, a narrative list of functions and a Site Analysis. Included are specific ideas of what functions should be included (or excluded), how they should be used, and how other functions should relate. This applies to new construction, rehabilitation projects, utility and site projects, adaptive use of historic structures and cultural landscape treatments.

A building and site program evolves from previous analysis documented in the Project Management Information System (PMIS) and Facility Planning Model, Historic Structure Report, and Cultural Landscape Report that shall be incorporated when provided. A Site Analysis is performed using the Site Analysis checklist.

Tools:
- Programmatic workshops and interviews
- Preliminary site investigations
- Bubble Diagrams and or Matrices
- Sketches
- Narrative
- Photographs"
Ref: https://www.nps.gov/dscw/definitionsdc_p.htm#pmis

SCHEMATIC DESIGN.

"Schematic Design is the process of transforming information from the Predesign phase into drawings, and other presentation media, that illustrate the scale and relationship of project components. As the design evolves, and the project comes to life, additional questions or new

ideas will generate alternatives. Schematic sketches capture the essence of the design in plans, elevations, sections and perspectives. This is a critical phase for studying and resolving important design issues.

Schematic Design is used to verify and clarify the technical and spatial assumptions made in the Project Program. The schematic design also carries the project to the level of detail required to identify any critical issues not covered in predesign. A presentation of the preferred schematic alternative is prepared for the Investment Review Board just prior to completion of the Schematic Design phase. Comments from the Investment Review Board are then incorporated into the final Schematic Design.

Tools:
- Perspective presentation drawings
- Physical and computer image models
- Digital and Film photography
- Microsoft PowerPoint slides
- Computer Printers and Plotters"

Ref: https://www.nps.gov/dscw/definitionsdc_s.htm

PROJECT DESIGN.
"In construction, defining the construction requirement (including the functional relationships and technical systems to be used, such as architectural, environmental, structural, electrical, mechanical, and fire protection), producing the technical specifications and drawings, and preparing the construction cost estimate.

Ref: https://www.nps.gov/dscw/definitionsdc_d.htm

PROJECT CONSTRUCTION.
Build the project.

POST EVALUATION.
PA/APA prepares post evaluation report.

POST EVALUATION REVIEW.
IRB conducts post evaluation review.

III.   Conclusions on Universal Best Practices.

▪ Recommend the Ministry of Environmental Protection and Agriculture/Agency of Protected Areas adopt this Facilities Investment Strategy.

DEPARTMENT OF THE INTERIOR - INTERNATIONAL TECHNICAL ASSISTANCE PROGRAM
GEORGIA PROTECTED AREAS POLICY REVIEW
SUBGROUP: INFRASTRUCTURE & FACILITIES - PROJECT DOCUMENTATION
1/17/2023

Project Phase 2.3 – Briefing Paper, Information & Records Management System
Team Members: Larry Walling, Mike Seibert, Ming-Yi Wong, Mary Hudson, Gayle Burgess

I.   Introduction.

Best practices for managing architectural and engineering planning, design and construction projects require a system for management of all project information and records. An effective information and records management system collects, stores and disseminates all project information and records. It is essential that photographs, maps, reference materials (including graphic and electronic files) used to develop construction drawings and specifications be collected and securely stored using technology that allows that information to be easily retrieved. An information and records management system serves many purposes by providing a history of each project and the design decisions made. Collectively, it records phases of planning, design, construction and maintenance that can provide useful information in the future to managers and the public. Of inestimable value are photos and drawings of buried utilities for each protected area. This resource alone has the potential to save large amounts of time and money when new projects are proposed and constructed.

II.   Overview, Discussion, Demonstration Examples.

One example of an Information and Records Management System may be found in the U.S. National Park Service (NPS), Technical Information Center (TIC) located in the Denver Service Center (DSC). It is the central service-wide information management system for all National Park Service (NPS) generated **planning**, **design, and construction** drawings and related technical documents. The NPS/DSC maintains graphic construction document standards which are applied to new construction projects designed in-house and by contracted architectural and engineering firms. NPS scientific, cultural, and general reports are also collected. TIC is the oldest and largest information system in the National Park Service.

Figure 1: Early TIC Brochure

In an early informational brochure (see figure 1), TIC described the archival processes of microfilmed and duplicated, stored originals, and indexing.

Figure 2 shows a list of services provided by TIC to any unit of the National Park System. Original documents of all types were collected by TIC staff and transported to DSC where the services described were performed. This practice continues to this day on a volunteer basis.

Figure 2: Early TIC Brochure

When starting a new project, the project manager would research earlier records and create a new baseline map that hopefully included any new underground facilities that might have been completed in the intervening years since the last update.

The vast majority but not all of NPS construction/reconstruction project's information and records have been archived, due to several reasons. Parks sometimes manage their own design and construction contracts and maintain their own file documentation. When this occurs, they do not always submit originals or copies to TIC. This circumstance is difficult to monitor and enforce. At DSC, for numerous reasons usually associated with funding and staffing, all project documents have not been uploaded into the system.

TIC has scanned many formerly microfilmed documents so much of the documentation is digitally available. Baseline maps are not typically maintained at this central archive, although parks (especially those large enough to support a GIS unit) have varying levels of baseline maps that are updatable and maintained.

Currently, TIC provides research, discovery, and archiving assistance to DSC, architectural and engineering contractors, parks and regions. It manages an eTIC system which disseminates project information to NPS employees and offices, contractors and the public. The integrated documents and records management system provides access to and retrieval of items within the collection. Thousands of documents from the collection are available on **e-TIC online**. TIC also manages and maintains the DSC Library, a collection of books and periodicals that is useful to NPS employees and contractors. The Information Services Branch is also located in TIC and manages and provides general administration and support of online and electronic project management and communication software.

Another NPS records management system is the electronic maintenance management system known as the Facility Management Software System (FMSS) or also known as Computerized Maintenance Management System (CMMS). In use since 2002, it is housed within the NPS Park Facilities and Management Division (PFMD) in the Washington, D.C. office (WASO). FMSS collects inventory and maintenance data for all infrastructure properties/assets throughout the National Park Service. The data is maintained and used by park facility managers to predict and program needs and budgets in order to maintain facilities in an acceptable condition. Asset records and facility condition assessments are used to build long-term maintenance plans and to inform development projects.

FMSS utilizes unique identifiers for infrastructure assets. Unique identifiers (sequential numbers) are critical to efficiently search for facility drawings and other documentation without having to rely on insider knowledge of geographic locations, projects or project titles which may only address part of a facility (e.g. drawing title: "Repair of Roofs in Lake Government Area"). It also allows a broader reference tied into various databases utilizing these identifiers.

Facility Management Software System (FMSS)/ Computerized Maintenance Management System (CMMS)
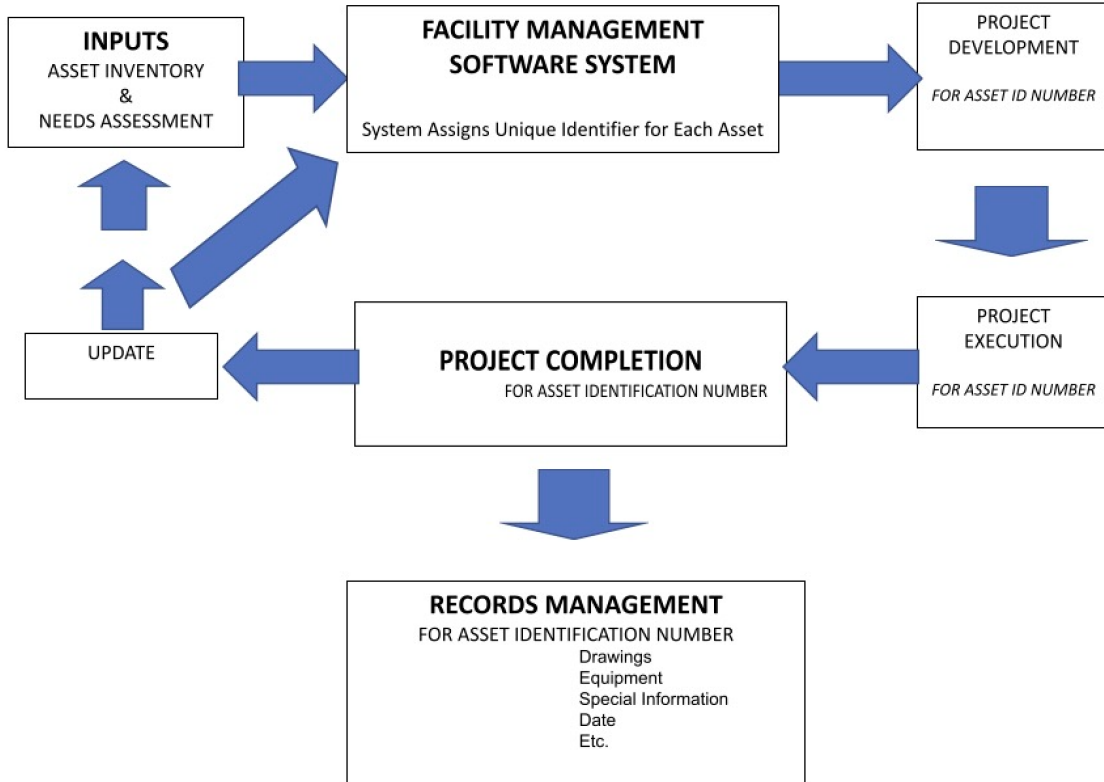
The FMSS/CMSS contains, but is not limited to, the following elements:

      (1) An inventory of real property assets (including but not limited to buildings, roads, utility systems, and grounds that must be maintained) and the type of maintenance work performed;

      (2) A set of maintenance tasks that describe the maintenance work in each unit of the National Park System;

      (3) A description of work standards including frequency of maintenance, measurable quality standards to which assets should be maintained, methods for accomplishing work, required labor, equipment and material resources, and expected worker production for each maintenance task;

      (4) A work program and performance budget which develops an annual work plan identifying maintenance needs and financial resources to be devoted to each maintenance task;

      (5) A work schedule which identifies and prioritizes tasks to be done in a specific time period and specifies required resources;

      (6) Work orders specifying job authorizations and a record of work accomplished which can be used to record actual labor and material costs; and

(7) Reports and special analyses which compare planned versus actual accomplishments and costs and can be used to evaluate asset management.

INPUTS:

Inventory of Assets. This is scalable and should be developed carefully in order to filter or query the database by assets, area, park, region, entire system.

Needs Assessment. Systematic evaluation of the condition/deficiency of an asset presented in narrative terms with monetary order of magnitude estimate. Modeled on systems and derived by professionals. Code compliant issues may be addressed by a needs assessment. Needs assessments are performed asset by asset. Generally performed on a one to five year cycle to develop projects.

PROJECT DEVELOPMENT:

Projects are developed from needs assessment surveys and are typically much more comprehensive than an operational work order, and may include multiple assets. Tracking of the asset(s) is facilitated by using the unique identifier(s) generated by the FMSS.

PROJECT EXECUTION/PROJECT COMPLETION:

Upon project completion, the changes to the assets in the project will be captured by updating the FMSS.

RECORDS MANAGEMENT:

Utilizing the same asset unique identifier, all drawings, specifications, contract documents should become readily trackable once archived in a records management system.

UPDATE:

Inventory of Assets and Needs Assessment.

The NPS's FMSS/CMMS is the responsibility of the Senior Real Property Officer. The following are the functions performed by the Senior Real Property Officer:

(i) Identify and categorize all real property owned, leased, or otherwise managed by the agency, including, those properties outside the United States in which the lease agreements and arrangements reflect the host country currency or involve alternative lease plans or rental agreements;

(ii) Prioritize actions to be taken to improve the operational and financial management of the agency's real property inventory;

(iii) Make life cycle cost estimations associated with the prioritized actions;

(iv) Identify legislative authorities that are required to address these priorities;

(v) Identify and pursue goals, with appropriate deadlines, consistent with and supportive of the agency's asset management plan and measure progress against such goals;

(vi) Incorporate planning and management requirements for historic property and for environmental management; and

(vii) Identify any other information and pursue any other actions necessary to the appropriate development and implementation of the agency asset management plan.

Examples:
Condition assessments: During the earliest period of developing FMSS, the Park Facilities and Management Division engaged contractors over several years to assess the existing condition of facilities. One success was the inspection and mapping of wastewater systems. The archived mapping and the contracted services were mutually beneficial to the effort. The archived maps provided good baseline information and the assessment resulted in correct documentation.

New Construction: The Old Faithful Snowlodge was constructed in the late 1990s. The construction site had been the location of many different buildings over the almost 100 years of development. A significant portion of the construction was performed in the winter when many of the facilities were shut down. There were no comprehensive baseline maps. Research resulted in many drawings, however, it was impossible to effectively determine which pipelines and electric lines were in service, what was abandoned, and where did it all come from and go to. Post construction documentation and digitizing was performed at the park level resulting in an expenditure of labor and time to identify the serviceability of utility lines.

III. Conclusions on Universal Best Practices of Information Management.

- Documentation of planning, design and construction of facilities is important. It is much easier to start this process at the beginning than it is to go back and try to bring it up to date.
- There should be one office responsible for all facets of records management (system of record) including collecting, storing and disseminating all project information.
- Documentation should be searchable electronically. Utilization of unique identifiers is strongly recommended and should follow universal research standards (like how the archivists or librarians work).
- Baseline mapping should be digitized and updatable using GIS.
- Processes should be in place to maintain baseline maps so that they represent the current situation and status e.g., active or abandoned utility lines.
- Underground facilities should be identified as to type, capacity, and depth. These should be GPS locatable.
- All underground features like buried foundations should also be identified, described, measured, elevation/depth recorded and located by GPS coordinates.

DEPARTMENT OF THE INTERIOR - INTERNATIONAL TECHNICAL ASSISTANCE PROGRAM
GEORGIA PROTECTED AREAS POLICY REVIEW
SUBTEAM: INFRASTRUCTURE & FACILITIES
APRIL 2022

Project Phase 2.3.5 – Briefing Paper, Sustainable Principles for Infrastructure
Team Members: Larry Walling, Mike Seibert, Ming-Yi Wong, Mary Hudson, Gayle Burgess

I.   Introduction

Infrastructure is the set of basic facilities and systems that provides essential goods and services to enable, sustain, or enhance living conditions; in this context, facilities and systems that serve Georgia's protected areas. *Sustainable infrastructure* requires comprehensive planning, design, construction, and operation of identified facilities and systems in ways that prioritize social, economic and ecological processes necessary to maintain human equity, diversity and the functionality of natural and cultural systems. Sustainable infrastructure, as with all sustainable development, is critical in the fight against climate change.

This briefing paper provides a general overview for the facilities and systems determined critical to support the protected areas. Additionally, sustainable design principles that factor into the decision-making process for the life cycle of protected areas' infrastructure are presented in this paper. Individual findings and demonstration examples where relevant, and conclusions regarding the "universal best practices" for sustainable infrastructure will be included within subsequent briefing papers generated and targeted at key infrastructure topic areas identified by this subgroup.

II.   Background

The complexity and extent of infrastructure components posed a considerable challenge to the work group to assure documentation was comprehensive yet minimized redundant and repeating practices. After several deliberated discussions, the workgroup assessed each of the original 60 plus topic areas and established four key topic areas; three specific to the built and managed infrastructure systems and facilities, and a fourth topic – investment strategies – to advance best practices to financially manage and sustain the infrastructure over its lifetime.

The breakdown of infrastructure was based on the premise that many systems and facilities share similar relatable conditions and needs. Combining facilities based on similarities in role and function will simplify use by APA management and staff. The following lists the key topic areas:
- Utility Systems
- Visitor and Management Facilities
- Transportation Systems
- Investment Strategies
- Archiving and Documentation of Facilities-Design and Coonstruction

Systems and structures within these topic areas that require additional direction or clarification will be addressed in system specific documentation.

III.   Overview and Discussion

Sustainable systems are planned, designed, constructed, operated and decommissioned in a manner that ensures sustainability over the entire infrastructure life cycle. Sustainable principles will be factored into each stage of the infrastructure lifetime. The guiding principles to be addressed are derived from laws, regulatory practices, and shared knowledge from across world organizations and governments utilizing sustainable practices. They include:

Environmental Sustainability: To be deemed sustainable, infrastructure must support the thoughtful and efficient use of natural resources, including energy, water, and materials. Sustainable infrastructures preserve, restore, and integrate the natural environment, including biodiversity and ecosystems. Sustainable systems also seek to limit all types of pollution over the life cycle of the structure/facility and contribute to a low-carbon, resilient, and resource-efficient economy. Sustainable infrastructure projects should be sited and designed to ensure resilience to climate and natural disaster risks.

Examples:
a. appropriately sized facilities based on needed capacity
b. plan and design facilities with minimum impact that meets the desired need
c. consider site location to minimize 1)footprint of infrastructure, 2)environmental risk (flooding, earthquake, stability), 3)view of unsightly facilities, 4)mass,
d. consider site location to maximize 1)easily available access, 2)solar potential, 3)utilization of previously disturbed areas…
e. utilize site properties–permeability, structural properties of site
f. plan for future to the extent possible……make allowances in system sizes/capacity, design facilities to be added on to versus being replaced etc

Cultural Resources: Sustainability of cultural resources needs to be factored and promoted with all projects and management to ensure the integrity of the regions' history and heritage is not lost.
Examples:
a. Preserve cultural integrity – Infill facilities in such a way that it complements adjacent historic/cultural structures, landscapes, etc. (Don't build a replica)
b. Avoid cultural sites when possible
c. Camouflage necessary infrastructure additions/modifications to cultural assets

Socio-Economic: Sustainable practices factor financial sustainability, community engagement, policy attributes. Sustainable infrastructure is inclusive and should have the broad support of affected communities and contribute to enhanced livelihoods and social well - being over the life cycle of the project. Projects must be constructed according to good labor, health, and safety standards. Benefits generated by sustainable infrastructure services should be shared equitably and transparently. Services provided by such projects

should promote gender equity, health, safety, and diversity while complying with human and labor rights. Where economic displacement and relocation of people is unavoidable, it must be managed in a consultative, open/transparent, fair, and equitable manner and must integrate cultural and heritage preservation.
examples:
a. Engage community when developing infrastructure
b. Educate community regarding the need for the infrastructure and the impacts
c. Utilize technological solutions within the grasp of local communities (both educationally and economically)
d. Ensure that adequate housing is not impacted by the infrastructure and influx of visitors

Institutional and Financial: Institutional infrastructure is aligned with national and international commitments, including the Paris Agreement[1], and is based on transparent and consistent governance systems over the project cycle. Robust institutional capacity and clearly defined procedures for project planning, procurement, and operation are enablers for institutional sustainability. The development of local capacity — including mechanisms for knowledge transfer, promotion of innovative thinking, and project management — is critical to enhance sustainability and promote systemic change. Sustainable infrastructure must develop technical and engineering capacities as well as systems for data collection, monitoring, and evaluation, to generate and quantify impacts or benefits.
examples:
a. Provide training/education to assist local technical capacity to operate and/or maintain the infrastructure

Sustainable facilities can be more financially beneficial as they provide more reliable services and greater resilience to extreme weather events, thereby lessening the impacts of natural threats to people and subsequently the economy. Suggested practices to support governance of planning and design processes are not included in this report; however, a second document, "Investment Strategies" has been developed separately.

IV.   Conclusions on Universal Best Practices.

To assure that Georgia's Protected Areas infrastructure is sustainable, specific planning, design and development requirements must be factored into the decision-making process and respond to the defined principles for sustainable development. The application of principles to infrastructure systems and structures will be presented in each topic area for inclusion into final recommended business practices.

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[1] United Nations/Framework Convention on Climate Change (2015) **Adoption of Paris Agreement, 21st Conference of the Parties, Paris: United Nations. AN OFFICIAL PUBLICATION.** Bell, E., Cullen. J.Jan 6, 2016

DEPARTMENT OF THE INTERIOR - INTERNATIONAL TECHNICAL ASSISTANCE PROGRAM
GEORGIA PROTECTED AREAS POLICY REVIEW
SUBGROUP: INFRASTRUCTURE & FACILITIES
JUNE 25, 2023

Project Phase 2.3 – Briefing Paper, Sustainable Visitor and Management Facilities
Team Members: Larry Walling, Mike Seibert, Ming-Yi Wong, Mary Hudson, Gayle Burgess

I. Introduction.

The Sustainable Infrastructures Subgroup identified *Sustainable Visitor and Management Facilities* as a major subtopic, or "theme," for analysis and research. The subgroup examined policy documents collected during Phase 1 to generate this briefing paper. This paper provides an overview of the findings, with demonstration examples where relevant and conclusions for the "universal best practices" that may be extracted from United States facilities development policies.

II. Overview, Discussion, Demonstration Examples

A. Overview

Protected areas are a key component of any global conservation strategy. Tourism provides a crucial and unique way to foster visitors' connection with protected area values, making it a potentially positive force for conservation. Protected area tourism's economic benefits—which depend on beautiful natural areas, healthy wildlife and nature, and authentic cultures—can also be a powerful case for conservation. Tourism in protected areas is a major part of the global tourism industry—an industry whose scale and impacts are enormous. To support a high volume of visitors, certain fundamental infrastructure needs and requirements for employment and human services need to be met. All of these requirements must factor the economy, society, culture and the natural environments.

B. Discussion

Visitor and management facilities should support and promote quality visitor experiences. Employees should also be provided safe and healthy work and living spaces. Types of facilities in these categories can be typified as buildings/structures, maintained site developments or a combination of both. Table II.B classifies the list of known facility types that comprise the built environment into these two categories.

When visitor and administrative facilities are found to be necessary and appropriate and to be sited within a protected area, they should be designed, built, and maintained in accordance with accepted protected area standards for quality and commitment to visitor satisfaction. Planning for visitor and management facilities will provide a responsive and flexible approach to meet protected areas needs and conditions, and to fulfill legal and policy requirements, including regulatory requirements[1].

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[1] BUILDINGS, Law of Georgia on the System of Protected Areas; NPS Management Policies (Park Facilities 9.3, 9.1.1.6)

All visitor and management facility projects should address standards that are designed to improve asset performance at every stage of a facility's life-cycle, from planning and design through construction. Several published standards for a facility's environmental, social and economic sustainability performance are available for guidance throughout the planning, design and development and operations stages.

Planning: Planning for sustainable buildings and structures strives to reduce the collective environmental impacts in the placement and production of building components, in the construction process, as well as in the lifecycle of the structure. Planning is critical to determine maximum visitation and development an area can support.

Sustainability principles central to visitor and facility planning include:
1. **Need**: The need for a 'built' structure and/or a 'maintained' landscape has to be validated to meet qualified demand. For example, visitor centers are not substitutes for personal or self-guiding on-site interpretation. They should be constructed only when it has been determined that indoor media are the most effective and cost-effective means to communicate major elements of the protected area story, and that a central public contact point is required.
2. **Sizing:** During planning, functional space requirements for a structure or site should be defined. Facilities should be sized appropriately and sensitively designed to support visitor education and satisfaction and not overshadow or replace the protected area resource.
3. **Shared Functional Space**: Opportunities to provide space serving multiple functions should be studied and effectiveness measured to minimize footprint impact on the natural environment and provide savings in construction materials and long-term maintenance and operational costs.
4. **Siting for New Construction**: Several elements to factor during siting include visitor and staff accessibility needs, solar and wind access, proximity to existing infrastructure elements, existing vegetation, and topography. The overall key objective when siting is to minimize adverse impacts on natural, cultural and social environments.
5. **Renovation of Existing Facilities**: Whenever possible, reuse of existing facilities should be considered when such activities will not adversely impact the existing structure or cultural and social context.
6. **Safeguarding Cultural Heritage**: Facilities should assure protection of local artifacts and practices.

Design: The aim of sustainable design is to produce products and services that reduce the use of non-renewable resources for development, operation and maintenance, which as a result minimizes the environmental impact. Sustainable design also responds to the social and economic needs of a location and community. Design principles to be considered for inclusion in facility construction – both new and reuse – include the following:
1. **Materials:** Construction materials for structures as well as materials for site furnishings, e.g. picnic tables, should be evaluated against "cradle to cradle" criteria, and where economically feasible, included in construction documents.
    ● Non-toxic in construction or long-term maintenance requirements

- Energy efficient and water conserving
- Durable construction materials and systems that support longevity and durability (e.g. fire suppression systems)
- Reclaimed or recycled materials
- Local products

2. **Flexible Space Design**: Flexible space design allows for a space to provide more than one purpose thereby reducing size and building elements.
3. **Smart Technology**: Smart and appropriate building technology can greatly improve energy efficiency while reducing onsite operations. However, the technical capacity of potential staff should be considered when choosing the type of infrastructure (apply "keep it simple" principles whenever possible)
4. **Universal Design**: Universal design targets needs, social participation and access to goods and services by the widest possible range of users.
5. **Modular Construction Techniques**: Modular construction is a sustainable technique that can be used when appropriate to design structures faster, at a more competitive cost, and with maximum resource efficiency. Modular structures can be built within a controlled environment where waste of resources is minimized, and pollution is controlled.
6. **Site Design**: Site Development plans should consider opportunities to protect structures from detrimental weather elements as well as provide opportunities for solar access or reduction to address building energy requirements.

Sustainable Construction: Construction techniques and practices should be planned to address minimum impact at and around building sites. Methods and practices to reduce environmental impacts of construction projects:

    a. **Reduce noise**: Minimize adverse impacts on human and wildlife activity
    b. **Limit fuel usage**: Fewer vehicles, minimizing haul distances, using green fuel sources, hybrid vehicles and equipment.
    c. **Proper waste management**: Salvage, reuse or recycle, or reduce the need for various wastes that are harmful to the environment.

Maintenance and Operational Activities: There is a maintenance responsibility and cost for every facility that is administered by protected areas managers. A regular, periodic inventory and condition assessment of protected area assets should be performed to identify deficiencies and to ensure the cost-effective maintenance of all facilities. Periodic inventory and condition assessment can support a funded preventative maintenance program which is directly related to operating costs of maintaining the life of facilities and equipment.

Therefore, the protected area manager should conduct a program of preventive and rehabilitative maintenance and preservation to:

a) provide a safe, sanitary, environmentally protective, and esthetically pleasing environment for protected area visitors and employees;
b) protect the physical integrity of facilities; and
c) preserve or maintain facilities in their optimum sustainable condition to the greatest extent possible. Preventive and rehabilitative maintenance programs should incorporate sustainable design elements and practices to ensure that water and energy efficiency, pollution prevention, and waste prevention and reduction are standard practice.

1. **Structural Fire Protection and Suppression**

   Directors of the protected areas should manage structural fire activities as part of a comprehensive interdisciplinary effort to provide life safety and protect resources and promote the safe and appropriate public enjoyment of those resources. Fire prevention, protection, and suppression should be primary considerations in the design, construction, rehabilitation, maintenance, and operation of all facilities. Structural fires should be suppressed to prevent the loss of human life and minimize damage to property and resources.

   Each Protected Area Director should complete a structural fire assessment and develop a structural fire plan to meet protected area needs. Structural fire protection and suppression capabilities should be maintained in accordance with those plans. Prevention priorities should focus on occupied structures and cultural resources, with emphasis placed evenly on code compliance, early warning detection, suppression systems, and employee training and awareness.

   Fire prevention, through code-compliant new construction, upgrading of existing structures, standardized and regularly scheduled fire inspections, and properly installed and maintained detection and suppression systems should be the primary means of addressing and correcting structural fire deficiencies. Where these measures are not sufficient to meet protected area needs, agreements should be entered into with non-protected area manager entities capable of providing requisite fire suppression assistance. Support from neighboring fire protection organizations is encouraged, and managers should enter into appropriate agreements whenever possible to enhance fire-fighting capabilities. Development of a protected area fire brigade should be considered only when all other options have been explored and found unacceptable. (9.1.8)

   Energy/Water Conservation: The Protected Areas should conduct activities in ways that use energy wisely and economically. Protected area resources and values should not be degraded to provide energy. The protected area manager should adhere to all policies governing energy and water efficiency, renewable resources, use of alternative fuels, and fleet goals.

   i. All facilities, vehicles, and equipment should be operated and managed to minimize the consumption of energy, water, and nonrenewable fuels. Full consideration should be given to the use of alternative fuels.
   ii. To conserve energy, protected area personnel and visitors may be provided with opportunities for in-protected area public transportation or trails and walks for non-motorized transport.

   C. **Conclusions on Universal Best Practices.**

To ensure that visitor and management facilities, and their maintenance and operations are sustainable, specific planning, design and development requirements must be factored into the decision making process throughout the lifecycle of the facility. The protected area manager should limit visitor and management facilities development to that which is necessary and appropriate, and as defined through comprehensive park-wide planning efforts and documents. The protected area manager should encourage the development of private sector visitor services in gateway communities to contribute to local economic development, encourage competition, increase choices for visitors, and minimize the need for development of facilities within protected areas. The determination for new facilities, or the adaptive reuse of existing, should be made during general management planning.

TABLE IIB: KEY VISITOR AND MANAGEMENT FACILITIES BY MANAGEMENT CATEGORY

	Structure/ Building	Maintained Site	Other
VISITOR FACILITIES			
Entrance Stations	✓		
Visitor Center	✓		
Campgrounds		✓	
Amphitheatres	✓	✓	
Overnight Accommodations (Hotels, Hostels, Shelters)	✓		
Food Services / Fuel Station / Gift shop / Bookstores	✓		
Campgrounds (Front Country and Backcountry)	✓		
Picnic and Day Use Areas		✓	
Water Recreation Facilities	✓	✓	
Skiing Facilities	✓	✓	
Cultural Event Centers	✓	✓	
MANAGEMENT FACILITIES			
Administrative Offices	✓		
Museum Collections Facilities	✓		
Employee Housing	✓		
Maintenance Structures	✓		
Misc Management Facilities	✓		
Dams and Reservoirs	✓		✓
Utilities Support Structures	✓		✓
COMMEMORATIVE WORKS			
Pre-existing			
Donated			
Within National Cemeteries			

Department of the Interior - International Technical Assistance Program
Georgia Protected Areas Policy Review
Subgroup: Infrastructure & Facilities
April 8, 2022

Project Phase 2.3 – Briefing Paper, Transportation
Team Members: Larry Walling, Mike Seibert, Ming-Yi Wong, Mary Hudson, Gayle Burgess

Introduction.
This briefing paper broadly covers the topic of transportation and its many forms in protected area settings. Receiving particular attention are motor vehicle roads, bridges, transportation systems, in other words, mechanized systems. Additionally, the topic of non-mechanized transportation in the form of pedestrian, horse and bicycle trails is addressed. Finally, best practices of the United States National Park Service management policies are discussed within the context of transportation in protected areas.

Background.
Two topics requiring special attention are: funding of both new construction and repair/rehabilitation of park roads and planning, design & construction for roads and transportation systems.

A. Funding.

Roads and transportation systems are costly to plan, construct and maintain, thus, large outlays of capital are required. For large protected areas with high visitation and a sizeable road network, this can be one of the largest annual operating budget items.

The history of the source of funds for protected area roads hasn't always been clear. Consistent fund source(s) and amount(s) are necessary for smooth functioning transportation systems. In the 19th century in the United States as parks (protected areas) were being established, roads were funded by War Department appropriations and built by the U.S. Army Corps of Engineers,[1] by the Department of Agriculture from a fund established from 10% of the sales of public lands,[2] and even private individuals.[3] As the need for roads in the early 20th century increased due to the advent of the automobile and the desire for improved access to allow for more visitors, standardization was required. Standardization included road engineering standards, the way roads were designed and constructed and a funding source.

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[1] Timothy Davis, *National Park Roads*, University of Virginia Press (2016), 91.
[2] https://www.nps.gov/parkhistory/online_books/roads/shs1.htm.
[3] https://www.nps.gov/parkhistory/online_books/roads/shs2.htm.

Today, funding for park roads and parkways (PRP) comes from tax revenue imposed on every gallon of gasoline and diesel fuel sold in the United States. Public, Private Partnerships (P3)[4] schemes for toll road construction and maintenance have been utilized to varying levels of success. However, as reliance on fossil fuels lessens and electric vehicle use increases other methods are being sought for funding roads and transportation.

If this topic has not been resolved in Georgia, it will require deliberation and political action to find appropriate, consistent, and reliable means of funding all forms of transportation infrastructure.

B. **Planning, design & construction of protected area roads.** The history of roads in what was to become the National Park System is tied inextricably with the history of the automobile. What began as carriage roads in federally reserved parks, monuments and reservations in the late 19th and early 20th centuries, were accommodating vehicles by 1907 and 1908, and in the first park by 1915.[5] In 1905, an Office of Public Roads (OPR) was established within the Department of Agriculture (DOA). By 1914, two years before the National Park Service came into existence, OPR had created a Division of National Park and Forest Roads headed by a civil engineer/road builder, T. Warren Allen.[6] That same year, the Assistant Secretary, Department of the Interior (DOI) devised a plan for the DOA and DOI to cooperate in the construction and maintenance of roads in national parks. This plan became the first cooperative agreement between the Office of Public Roads and the Department of the Interior.[7] Some roads were designed and built under this agreement at large western national parks. However, Stephen Mather, first director of the National Park Service, envisioned a Civil Engineering Division and a Landscape Engineering Division within the administrative structure of the newly formed agency which would work cooperatively to design and construct park roads. The Civil Engineering Division would handle technical (i.e., engineering) aspects of road design including road base design, pavement mix design and construction. A Landscape Engineering Division would have responsibility for aesthetic issues like roadway location, protection of existing vegetation, architectural features of structures and bridges.[8] In 1918, OPR became the Bureau of Public Roads (BPR) "headed by Thomas MacDonald, …"[9] For a number of reasons, MacDonald was able to secure a sizable budget for the BPR and he set his sights on expanding his portfolio to include national park roads in addition to national forest roads and other federal roads. NPS resisted engaging with BPR because it was felt their roads did not suit the landscape preservation requirements of the NPS, their overhead costs were excessive, their roads were too costly to construct. However, considerable political pressure was brought to bear on the NPS due to road construction not keeping up with demand and for failing to meet appropriate standards. BPR did meet with significant public criticism over several debacles in the first half of the decade of the 1920s which justified NPS's reluctance to work with them. Finally, NPS requested BPR's assistance on the Transmountain Road in Glacier National Park provided a

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[4] https://americaninfrastructuremag.com/funding-a-national-infrastructure-program-a-la-the-2020s/

[5] 1916 Annual Report of the Superintendent of National Parks to the Secretary of the Interior, 15-16.

[6] Timothy Davis, National Park Roads, University of Virginia Press (2016), 91.

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[8] Timothy Davis, *National Park Roads*, University of Virginia Press (2016), 92.

[9] Timothy Davis, National Park Roads, University of Virginia Press (2016), 96.

deal could be struck regarding each agency's responsibilities. "BPR would provide location surveys, provide plans and specifications for NPS approval, engage contractors and supervise construction then subject the results to NPS review. The NPS chief engineer would address technical details while the chief landscape engineer would review landscape concerns and be empowered to stop construction any time park values were threatened. Park superintendents would be allowed to weigh in on these matters, with any internal disagreements being settled by the director."[10]   In 1925, the BPR regional Engineer, L. I. Hewes, is quoted as saying, "We must be prepared to fight out our differences in good spirits." A Memorandum of Agreement between the two agencies was executed and signed in January, 1926.

C. This cooperative approach to park road design and construction between civil engineers and landscape architects continues to this day although in a somewhat different form. Cooperative design and construction of park roads between the two professions has led to exemplary National Park Service roads, parkways and bridges of high aesthetic value and world-wide acclaim. Pitfalls to avoid are:

   a. Professional arrogance and domination of decisions at all levels of planning, design and construction by either profession must never be permitted. A true cooperative relationship between engineers and landscape architects must be developed and maintained. Strong, unyielding and uncompromising personalities should not be tolerated.

   b. Allowing a funding source to dictate policy and planning, design and construction decisions must be avoided at all costs. A middle ground must always be found between engineering requirements and resource protection, preservation and aesthetic considerations for the benefit of the protected area.

Overview, Discussion, Demonstration Examples

Roads & Bridges

   A. **Going to the Sun Road, Glacier National Park.** Going-to-the-Sun Road is notable as one of the first National Park Service projects specifically intended to accommodate the automobile-borne tourist. The Road spans 50 miles and crosses the Continental Divide at Logan Pass. It is the only east-west route through the park. It traverses impressive glaciers, beautiful valleys, cascading waterfalls, towering mountains, colorful wildflowers, and often provides wildlife sightings. An early proposed road route had 15 switchbacks up Logan Creek. NPS director Stephen Mather preferred the final route along the Garden Wall escarpment which only has one switchback. The NPS Landscape architect Thomas Chalmers Vint and Frank Kittredge (Bureau of Public Roads) designed the current route which blends well with the park scenery.

   B. **George Washington Memorial Parkway.** Designed for recreational driving while preserving natural scenery along the Potomac River, the George Washington Memorial Parkway connects historic sites from Mount Vernon to Great Falls of the Potomac. The popular patriotic excursion to George Washington's family estate in Mount Vernon, Virginia. was originally accomplished by steamboat. In the 1880s, a "national road" was advocated. The United States Army Corps of Engineers conducted a survey, and in its report agreed that a superior, no-expense-spared road from Alexandria to Mount

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[10] Timothy Davis, National Park Roads, University of Virginia Press (2016), 103.

Vernon was necessary. The portion of the parkway just north of the Key Bridge was considered a model of modern highway design, and it was featured in many scholarly papers, engineering journals, and textbooks of the day.

C. **Blue Ridge Parkway.** A Blue Ridge Parkway experience is unlike any other: a slow-paced and relaxing drive revealing stunning long-range vistas and close-up views of the rugged mountains and pastoral landscapes of the Appalachian Highlands in Virginia and North Carolina. The Parkway meanders for 469 miles, protecting a diversity of plants and animals, and providing opportunities for enjoying all that makes this region of the country so special.

   - It is the longest road planned as a single unit in the United States.
   - It is an elongated park, protecting significant mountain landscapes far beyond the shoulders of the road itself.
   - It is a series of parks providing the visitor access to high mountain passes, a continuous series of panoramic views, the boundaries of its limited right-of-way rarely apparent and miles of the adjacent countryside seemingly a part of the protected scene.
   - It is a "museum of the managed American countryside," preserving the rough hewn log cabin of the mountain pioneer, the summer home of a textile magnate, and traces of early industries such as logging, railways, and an old canal.
   - It is the product of a series of major public works projects which provided a boost to the travel and tourism industry and helped the Appalachian region climb out the depths of the Great Depression.
   - Stretching almost 500 miles along the crest of the Blue Ridge mountains through North Carolina and Virginia, it encompasses some of the oldest settlements of both pre-historic and early European settlement.

D. **Linn Cove Viaduct Segment of the Blue Ridge Parkway.** The Linn Cove Viaduct hugs the face of Grandfather Mountain and is recognized internationally as an engineering marvel. This was the last section of the Parkway to be completed. A model of the construction technique highlights a visit to the Linn Cove Visitor Center. Engineers were faced with a serious question: How do you build a road at an elevation of 4,100 feet without damaging one of the world's oldest mountains? To protect the fragile habitat of Grandfather Mountain, National Park Service landscape architects and Federal Highway Administration engineers agreed the road should be elevated, or bridged, where possible to eliminate massive cuts and fills. The result: the most complicated concrete bridge ever built, snaking around boulder-strewn Linn Cove in a sweeping "S" curve. This award-winning, complex concrete bridge is a symbol of pride to landscape architects and engineers for its marriage of beauty with utility and habitat protection. Visitors here will gain an appreciation for the care that was taken in

construction of the entire Parkway. The American Society of Civil Engineers designated it a National Civil Engineering Landmark.

E. **Natchez Trace Parkway.** The Natchez Trace Parkway is a 444-mile recreational road and scenic drive through three states– Alabama, Mississippi, and Tennessee. It roughly follows the "Old Natchez Trace", an historic travel corridor used by American Indians, "Kaintucks," European settlers, slave traders, soldiers, and future presidents. Today, people can enjoy not only a scenic drive but also hiking, biking, horseback riding, and camping along the parkway. The history and culture found along the Natchez Trace Parkway is a lifetime worth of exploration for students of history, or just the curious. The number of cultures and historic topics touched by the Natchez Trace seems boundless.

F. **Birdsong Hollow Double Arch Bridge, Natchez Trace Parkway.** Completed in 1994, the Double Arch Bridge that spans Birdsong Hollow received the Presidential Award for Design Excellence in 1995 for its innovative design that rises 155 feet above the valley. The bridge carries Natchez Trace travelers 1,648 feet across the valley and Tennessee Highway 96. Winner of design and construction awards, the Double Arch Bridge is the first segmented constructed arch bridge in the USA. It is the second longest bridge on the Parkway.

G. **Foothills Parkway, Great Smoky Mountains National Park.** The Foothills Parkway. Congress authorized the Foothills Parkway as a scenic parkway on February 22, 1944. Of the seven Congressionally Mandated Parkways, the Foothills Parkway is the only remaining parkway yet to be completed. The Foothills Parkway now consists of two finished sections at either end of the 72 - mile corridor. The western section now extends 33 continuous miles from Chilhowee to Wears Valley, offering a new recreational experience for motorists and cyclists. The eastern section, completed in 1968, extends 6 miles from Cosby to Interstate 40 presenting breathtaking views of Mt. Cammerer. Challenging terrain, environmental risks, questions regarding overcrowding, and funding starts and stops have compromised the completion of the parkway. Unlike other national parkways, Foothills Parkway is not a separate unit of the national park system. As with other NPS roads, construction (including repaving) is handled by the Federal Highway Administration (FHWA) through the Federal Lands Transportation Program (FLTP) partnership.

H. **Sentinel Bridge, Yosemite National Park.** Located within Yosemite National Park, Sentinel Bridge is famous for its spectacular views of Half Dome reflected in the Merced River. From the bridge it is also possible to see Yosemite Falls. Sentinel Bridge was the oldest surviving Merced River bridge in Yosemite National Park; it originally carried the main traffic load over the river at the site of the Old Yosemite Village, once the center of activity in the Valley.

I. **Zion-Mount Carmel Highway and Tunnel.** "The 25-mile road was a joint effort, between the National Park Service, the state of Utah, and the Bureau of Public Roads. A road designed to go where no road had gone before, the Zion-Mount Carmel Highway and Tunnel went up Pine Creek Canyon, through the Navajo sandstone cliffs to the eastern plateau, then across slickrock country. Over a three year period, this improbable route presented unique logistical, engineering, and design challenges. Assuming the NPS Rustic architectural style, extreme care was taken to ensure the road blended into the surrounding landscape. Extensive effort and planning was required to incorporate natural materials and colors into a highly engineered, sophisticated, yet rustic construction. The galleries, or windows, within the 1.1 mile tunnel were placed to provide views of Zion Canyon's spectacular beauty. Numerous rustic masonry and wooden bridges, long lengths of expertly constructed rock walls with massive stones, beautiful arched-masonry culverts, and many more features are visible along the road."[11]

J. **Carriage Roads, Acadia National Park** Forty-five miles of rustic carriage roads, the gift of philanthropist John D. Rockefeller Jr. and family, weave around the mountains and valleys of Acadia National Park. Rockefeller, a skilled horseman, wanted to travel on motor-free byways via horse and carriage into the heart of Mount Desert Island. His construction efforts from 1913 to 1940 resulted in roads with sweeping vistas and close-up views of the landscape. His love of road building ensured a state-of-the-art system. Acadia's carriage roads are the best example of broken-stone roads—a type of road commonly used at the turn of the 20th century—in America today. They are true roads, approximately 16 feet wide, constructed with methods that required much hand labor.

The roads were engineered to contend with Maine's wet weather. Stone culverts, wide ditches, three layers of rock, and a substantial six- to eight-inch crown ensured good drainage. Rather than flattening hillsides to accommodate the roads, breast walls and retaining walls were built to preserve the line of hillsides and save trees. Rockefeller aligned the roads to follow the contours of the land and to take advantage of scenic views. He graded the roads so they were not too steep or too sharply curved for horse-drawn carriages. Road crews quarried island granite for road material and bridge facing. Roadsides were landscaped

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[11] https://www.nps.gov/zion/learn/historyculture/zmchighway.htm

with native vegetation such as blueberries and sweet fern. The use of native materials helped blend the roads into the natural landscape.
Road Features:

- Coping Stones: Large blocks of granite lining the roads serve as guardrails. Cut roughly and spaced irregularly, the coping stones create a rustic appearance. These coping stones have been affectionately called "Rockefeller's teeth."
- Signposts: Cedar signposts were installed at intersections to direct carriage drivers. Today, numbers that match maps and guidebooks are attached to the signposts and help carriage road users find their way.
- Roadside Grooming and Landscaping: Rockefeller employed a crew of foresters to remove debris from the roads and roadsides. Nationally known landscape architect Beatrix Farrand consulted on planting designs to frame vistas and bridges and to heal scars left behind by carriage road construction. The Fire of 1947 destroyed much of her work.
- Gate Lodges: Two gate lodges, one at Jordan Pond and the other near Northeast Harbor, ornament the roads and serve as impressive welcomes to the system. A third gate lodge was planned at Eagle Lake, but was never built.
- Bridges: Rockefeller financed 16 of 17 stone-faced bridges, each unique in design, to span streams, waterfalls, roads, and cliffsides. The bridges are steel-reinforced concrete, but the use of native stone for the facing gives them a natural appearance. Over time, the stonecutters grew very skilled and Rockefeller often requested them not to cut the facing too well lest the rustic look be lost.

Transportation Systems

K. **Zion National Park Zion** In 1997, visitation was 2.4 million and increasing. The shuttle system was established to eliminate traffic and parking problems, protect vegetation, and restore tranquility to Zion Canyon. Canyon Scenic Drive (the road that starts north of Canyon Junction) is closed to private vehicles when park shuttles are operating. Free shuttles into the park are available in the nearby town of Springdale.

L. **Acadia National Park** Acadia National Park protects the natural beauty of the highest rocky headlands along the Atlantic coastline of the United States, an abundance of habitats, and a rich cultural heritage. At 4 million visits a year, it's one of the top 10 most-visited national parks in the United States. Visitors enjoy 27 miles of historic motor roads, 158 miles of hiking trails, and 45 miles of carriage roads. The Park Loop Road is one of three types of major road systems

on the island. Constructed between 1921 and 1958, it allows motor vehicles access to the park separate from local roads and non-motorized carriage roads. This 27-mile (43 km) road is the go-to scenic drive around the east side of Mount Desert Island, connecting Acadia's lakes, mountains, and shoreline. It provides access to popular areas such as Sieur de Monts, Sand Beach, Otter Point, Jordan Pond, and Cadillac Mountain. In addition, "From mid June to early October each year, the **Island Explorer** provides fare-free transit service between park destinations, local communities, and the Bar Harbor-Hancock County Regional Airport. Regularly scheduled buses stop at specific destinations in the park, including campgrounds, carriage road entrances, and many trailheads. You can also flag down buses along their route; drivers will pick up passengers anywhere it is safe to stop. The propane-powered Island Explorer buses-also equipped with bicycle racks, help reduce traffic congestion, parking, and air pollution problems on the island."[12]

M. **Rocky Mountain National Park.** Rocky Mountain National Park (RMNP) has the highest paved roads in any national park in the United States, with Trail Ridge Road (Hwy 34) cresting at 12,183 feet above sea level. This is the highest continuously paved road in North America. Rocky Mountain National Park is one of the busiest national parks in the country, with over 4.4 million visitors in 2021. Visitor crowding and congestion at RMNP have led to increased negative impacts to visitor and staff safety, resource protection, visitor experience and operational capacity. The park has piloted various visitor use management strategies since 2016, including first-come, first-served and different park wide Timed Entry Permit Reservation systems in 2020 and 2021 and will be piloting a system again in 2022. Timed entry permit reservations and a valid park entrance pass are required to drive over the Trail Ridge Road between 9 am and 3 pm.

N. **Sequoia National Park (Sequoia and Kings Canyon National Parks)** The roads are narrow and very curvy. There is a vehicle-length advisory, with alternative routes suggested for over-length vehicles. During the summer barring severe weather, both parks may be accessed via an interior road.

O. **Lowell National Historic Park.** This is an urban park, with free city parking for validated Lowell NHP visitors. It features a Water Canal Boat Tour and a Trolley Tour.

P. **Pearl Harbor National Monument.** ThIs urban site provides parking at the visitor center with shuttles to places of interest.

Q. **Grand Canyon National Park.** Visitors who have parked at the South Rim Visitor Center board free shuttle buses to access village facilities and canyon overlooks along the south rim. The federal Bureau of Public Roads (BPR) built the Hermit Road in Grand Canyon Village in 1934-35. The road was modernized and widened in 2008 to conform with current safety standards. It is only open to private vehicles in the winter; the rest of the year, it is served by shuttle bus and open to walkers and cyclists.

Non-Motor Vehicle Transportation Systems

Trails and walks provide the only means of access into many areas within protected areas. These facilities are planned and developed as integral parts of each protected area's transportation system and incorporate principles of universal design. Trails and walks will serve

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[12] https://www.nps.gov/articles/island-explorer-shuttle.htm

as management tools to help control the distribution and intensity of use. All trails and walks will be carefully situated, designed, and managed to

- reduce conflicts with motorized vehicles and incompatible uses
- allow for a satisfying protected area experience
- allow accessibility by the greatest number of people
- protect protected area resources.
- E-bikes, Snowmobiles, or other smaller motorized vehicles may be allowed on specific trails per administration guidelines.

The Agency of Protected Areas (APA) administrators will cooperate with other land managers, nonprofit organizations, and user groups to facilitate local and regional trail access to protected areas. When protected areas abut other public lands, APA will participate in interagency, multi-jurisdictional trail planning. When an effective trail system exists, and when otherwise permitted, hostels or similar low-cost overnight facilities may be provided if they are consistent with the protected area's general management plan and harmonize with the natural and/or cultural resources.

Trail Systems may encompass the following categories.

- Hiking Trails and Walks
- Equestrian Trails
- Bicycle Trails
- Water Trails
- Interpretive Trails
- National/International Trails

Any given trail may be multi-purpose.

Trail features may be built on native terrain, boardwalks, imported material, and pavement. Trails may include bridges, signs, overlooks, etc. to enhance the visitor enjoyment, access, and safety as well as to protect the natural and cultural elements of an area.

Considerations for Trail Types

Hiking Trails and Walks

Trail design will vary to accommodate a wide range of users and be appropriate to user patterns and site conditions. Wetlands will generally be avoided, and where possible they will be spanned by a boardwalk or other means, using sustainable materials that will not disturb hydrologic or ecological processes. Backcountry trails will offer visitors a primitive outdoor experience, and these trails will be unsurfaced and modest in character except where a more durable surface is needed. The use of nonnative materials is generally not permitted on backcountry trails.

Heavily used trails and walks in developed areas may be surfaced as necessary for visitor safety, accessibility for persons with impaired mobility, resource protection, and/or for erosion control. Surface materials should be carefully selected, taking into account factors such as the purpose and location of a trail or walk and the potential for erosion and other environmental impacts.

References: NPS Management Policies (Park Facilities 9.2.2. 9.2.2.1, 9.2.2.2, Visitor Use 8.2); Parks Canada Trail Guidance; USDA Trail Construction and Maintenance Notebook

Equestrian Trails

Equestrian trails and related support facilities, such as corrals, feed boxes and hitch rails, may be provided when they are consistent with protected area objectives and when site conditions are suitable. Horse camps should be designed with user interest in mind and consistency with APA policy. Photovoltaic systems should be evaluated to power any necessary water systems. Ramps for mounting the animals must be provided for persons with disabilities.

References: NPS Management Policies (Park Facilities 9.2.2.3; Grazing and Livestock Driveways 6.4.7; Domestic and Feral Livestock 8.6.8; Accessibility of Commercial Services 10.2.6.2)

Bicycle Trails

Bicycle routes may be considered as an alternative to motor vehicle access. Bicycle travel may be integrated with protected area roads when determined to be safe and feasible. Bicycle trails may be paved or stabilized for the protection of resources and for the safety and convenience of travelers. Bicycle use is allowed on protected area roads, in parking areas, and on routes designated for bicycle use or as multi-use trails. The designation of bicycle routes is allowed in developed areas and in special use zones based on a written determination that such use is (1) consistent with the protection of a protected area's natural, cultural, scenic, and esthetic values; (2) consistent with safety considerations; (3) consistent with management objectives; and (4) will not disturb wildlife or other protected area resources. A similar determination may be made to designate routes outside developed areas and special use zones; however, the designation must be made by promulgating a special regulation.

References: NPS Management Policies (Park Facilities 9.2.2.4, General Policy 6.4.1, Backcountry Use 8.2.2.4)

Water Trails

Water access and use may be provided when consistent with resource protection needs. Appropriate locations and levels of use will be determined in the protected area's general management plan. The APA will work with other agencies and organizations, as appropriate, to develop and provide education and interpretation for water trails that access protected areas; to promote understanding and enjoyment; and to protect waterways and adjacent lands.

References: NPS Management Policies (Park Facilities 9.2.2.5)

Interpretive Trails

Interpretive trails and walks, both guided and self-guiding, may be used for purposes of visitor appreciation and understanding of protected area values. Interpretive materials should be developed in accordance with interpretive standards set by APA. Interpretive trails should meet accessibility standards.

References: NPS Management Policies (Park Facilities 9.2.2.6)

National / International Trails

Components of a national trails system administered by APA, will be designated as units of the national protected area system. These trails are therefore managed as national protected areas and are subject to all the policies contained herein, as well as to any other APA or federal requirements.

Other scenic, historic, connecting/side, and recreational trails designated as units of the national trails system are in or are adjacent to protected area units. Some of these may also be administered by APA, though not as units of the national protected area system. In all cases, APA will cooperate with other land managers, nonprofit organizations, and user groups to facilitate appropriate trail use in accordance with the laws and policies applicable to such trails, and to the extent that trail management and use would not cause unacceptable impacts.

References: NPS Management Policies (Park Facilities 9.2.2.7); USDA Trail Construction and Maintenance Notebook

Trailheads

Trailheads, and trail access points from which trail use can begin, will be carefully tied into other elements of the protected area development and circulation system to facilitate safe and enjoyable trail use and efficient management. Signs, Interpretive features will follow standards set by the specific authority for those elements.

References: NPS Management Policies (Park Facilities 9.2.2.8)

Trail Bridges

Trail bridges may be necessary for crossing swift water areas prone to flash-flooding, and other places that present potential safety hazards. Less obtrusive alternatives to bridges (such as, fords, causeways, culverts, and trail relocation) will be considered before a decision is made to build a bridge. A bridge may be the preferred alternative when necessary to prevent stream bank erosion or protect wetlands or fisheries. If a bridge is determined to be appropriate, it will be kept to the minimum size needed to serve trail users, and it will be designed to harmonize with the surrounding natural scene and be as unobtrusive as possible.

Trail Bridges and Boardwalks should be simple and rustic in appearance. They should be less narrow in width, designed to accommodate the intended use, and built using non-dimensional, natural appearing materials. Synthetic fasteners and materials may be used, with discretion.

References: NPS Management Policies (Park Facilities 9.2.2.9, Water Resource Management 4.6); Trail Bridge Catalog; Best Practices Parks Canada Trails

IV. Conclusions on Universal Best Practices.

- Transportation in APA is accomplished by roads and trails which allow visitors to experience natural and cultural resources protected by APA.
- Roads and Trails in APA units are more than just a means to get from one place to another and should contain high aesthetic value and follow design principles and standards in their execution. Natural and cultural resources must be protected.
- Roads designed to preserve natural areas often require innovative construction techniques.

- Partnerships between agencies and also philanthropic groups/individuals are critical to appropriately designed and maintained roads and trails.
- Overcrowding of park areas/roads can be mitigated to some extent by reservations systems, and free shuttles to and from areas within the protected area.
- Construction of road systems may take many years or decades to complete due to funding, environment, and other public concerns.
- Engineers and landscape architects working collaboratively can design and construct transportation routes which enhance visitor experience while preserving natural and cultural resources.

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DEPARTMENT OF THE INTERIOR - INTERNATIONAL TECHNICAL ASSISTANCE PROGRAM
GEORGIA PROTECTED AREAS POLICY REVIEW
INFRASTRUCTURE & FACILITIES - UTILITIES
4/4/2022

Project Phase 2.3 – Briefing Paper, Utilities
Team Members: Larry Walling, Mike Seibert, Ming-Yi Wong, Mary Hudson, Gayle Burgess

I.   Introduction.

The Sustainable Infrastructure subgroup determined that the broad category of Utilities as one of the key topic areas. Utility systems include, but are not limited to, Water (source, treatment and distribution), Wastewater (collection, treatment, and disposal), Energy (power generation and transmission), Communication (operations and transmission), and Solid Waste (collection, management, disposal). Utility systems are critical to safe and healthy operations of NPS units, as well as BLM, US Forest Service, USFWS, etc., but not all utilities are required by each area. This determination of need and of capacity required is made based on planned utilization. The type and capacity of specific utilities is affected by access, visitation, resource impacts, socio-economic factors, and life-health-safety requirements.

II.   Overview, Discussion, Demonstration Examples.

The concept of sustainable infrastructure refers to the planning, design, construction, and operation of these structural elements in methods that do not diminish the social, economic, and ecological processes required to support and maintain human equity, diversity, and the functionality of natural and cultural systems. Investments in sustainable infrastructure are critical in the fight against climate change as well as to strengthen responsible economic growth.

Sustainability preserves, restores, and integrates the natural and cultural environments. It supports the sustainable and efficient use of natural resources, including energy, water, and materials. It also minimizes all types of pollution over the life cycle of the project and contributes to a low-carbon, resilient, and resource-efficient economy. Sustainable infrastructure projects should
- be sited and designed to ensure resilience to climate and natural disaster risks
- should conduct their activities in ways that use energy efficiently and economically
- should not degrade area natural and cultural resources and values in order to provide services for protected area purposes
- Adherence to all federal policies governing environmental and health life safety should be required.

The bureaus of the Department of the Interior and other agencies like the Department of Agriculture have various levels of built environment which may or may not include utility

systems. When utilities are determined to be appropriate and desired, elements that determine the type and capacity of the utility(ies) are listed below:

Site Access: Facilities may be located at sites that fall into designations that range from urban to wilderness. The ability to access a site will factor into the type of built infrastructure planned and constructed. For example:

> Urban locations should take advantage of commercially available infrastructure in particular for water, wastewater, energy, and communications. Building need should be carefully evaluated in order to utilize available structures outside the park unit boundaries. Buildings constructed within park units will likely necessitate water, wastewater, energy, and communications features. Bringing these into the park units will impact natural and cultural features and will necessitate in-house or contracted expertise in order to operate and maintain them.

> Wilderness locations may support only minimal or even no infrastructure. Minimal infrastructure is typically passive, zero energy wastewater treatment (outhouse or similar),untreated water source, and no energy or communications. All development is dependent upon park preferences and ability to maintain. The burden of safe water consumption may fall on the visitor. Human waste and other refuse may impact the resource and possibly health/life/safety of the visitor.

> Park utilities at sites located in areas between these extremes may be developed based on these and other factors listed below.

Visitation: Visitation in park units can vary greatly in part determined by the attraction and interest in the purpose of the protected area as well as the remoteness from urban areas. Visitation can also be affected by the services available. Building more to accommodate more can result in an ever expanding need, result in overuse, and be detrimental to the purpose of the protected area. (See Socio-Economic Factors discussion on Costa Rica.) Units with larger visitation must plan for appropriate capacity in their built environments. This includes all types of infrastructure in support of services deemed appropriate.

> High Visitation/Urban environments: The Urban Location description (Site Access) usually has the most significant development. Large park units with sites remote from the 'headquarters' (presumably adjacent to urban access) will likely require built infrastructure independent of the available urban affiliated infrastructure. Energy infrastructure may still be supported throughout the park unit if there is a contractual obligation for the commercially available source to be developed and maintained within the unit. Power lines, substations, generation equipment may be required to provide reasonably continuous service; these may be part of contracted commercially available service. If commercially available power is not available in the protected area interior sites, and is part of approved planning, then generation and transmission will need to be set up. Water and wastewater systems in high visitation areas remote from the urban access will need to be carefully considered for available water source, land area to develop, energy requirements, expertise to operate and maintain, seasonality of operations, effluent impacts, health/life/safety requirements, etc.

Less visitation may allow for more passive operations and infrastructure development. Water supply source may be ground water not under the influence of surface contaminants which may require little or no treatment. It will typically still require storage and transmission. Wastewater may be effectively treated with septic or similar passive systems; however, these are dependent on the ability of the land to percolate and otherwise absorb the effluent. Any commercial operation (especially restaurant production of grease) may make treatment operations reliant on ground percolation non-viable, or at least require separation and treatment of grease waste from the rest of the wastewater. Energy options may include PV or similar. Carbon based energy generation should be a last resort due to the impact of sound, smell, carbon exhaust, etc., and should be reserved for emergency needs.

Resource Impacts: The purpose of the park units is to preserve natural and cultural resources. Infrastructure location should be carefully located to avoid impacting these elements. Utilization of 'already disturbed' corridors are preferable to new disturbances. Underground utilities construction should be particularly aware of possible archeological disturbance.

Socio-Economic Factors: In order for park unit infrastructure to function as planned, to meet capacity needs, to meet environmental requirements, it is critical that the human resource be considered. When it is desirable for the involvement and mutual support of adjacent communities, education and mutual benefits may greatly determine the ability of the park unit to sustain their utility environment. In order to support mutual benefits, technological solutions should not exceed the capabilities of local communities to staff the facilities; lower tech solutions utilizing local populations may increase the mutual satisfaction of the park unit management and local communities.

A study of ecotourism ([Costa Rica](#)) as a socio-economic development strategy found both positive and negative effects as a result of the effort. Important positive aspects of ecotourism development were the protection of natural areas and increasing job opportunities. The most important drawbacks of ecotourism development were sewage problems, lack of sufficient waste management, uncontrolled building of tourist facilities and the disintegration of local communities' social and cultural structures.

Partnering Example**:** West Yellowstone, Montana and Yellowstone National Park attempted to engage in a mutually beneficial composting facility in order to reduce the landfill impacts and costs (hauling was 80 miles one way). The composting facility was constructed and operated for about 20 years, but ultimately failed as the community of West Yellowstone was unable to sustain a separated waste stream and the park operation wasn't sufficient to operate solo. There was another composting treatment option that did not require separation of the waste stream, but was rejected due to start up costs.

Expanding Use Example: "If you build (allow) it, they will come…" Yellowstone winter use operations were expanded greatly in the 1980's with the maintenance of groomed snow covered roads. This use will likely never be rescinded but has resulted in huge increase in operating costs (road grooming, safety needs for visitors). The land and the animals never get a

break from visitation. It has a great economic benefit to gateway communities but has some negative impacts on the resource.

Health/Life/Safety: Health/Life/Safety considerations for utilities typically are regulated by national standards for potable water, wastewater effluent, and solid waste management. Power and communications installations should meet all federal and state code requirements. In addition to potability standards, water resource and transmission capacity must be considered for structural fire installations. With the exception of source water capacity, these considerations are primarily operational.

References: Law of Georgia on Water; Law of Georgia on Cultural Heritage; article 35, Goals and Objectives of establishing protection zones #2; NPS Management Policies (Park Facilities 9.1.5.1, 9.1.5.2, 9.1.5.3, 9.1.3.4, 9.3.2.1, 9.1.6, 9.1.1.6, 9.1.6.2; Criteria for Inclusion 1.3; Land Protection-3.0; Pest Management 4.4.5; Water Resource Management 4.6; Treatment of Cultural Resources 5.3.5; Emergency Preparedness and Emergency Operations 8.2.5.2)

III.   Conclusions on Universal Best Practices.

- Site (access, resource sensitivity, etc) and visitation are critical elements that need to be balanced in order to determine the appropriate type, location, and capacity of infrastructure for a given area
- Infrastructure available outside of the area should be utilized whenever possible to improve economy (of scale) and to reduce development within a protected area
- Infrastructure may be required to support
  - health/life/safety
  - protection of resource from impacts
  - desired visitor experience/services
- Infrastructure must be sized to meet capacity needs
- Planning is critical to determine maximum visitation and development an area can support (e.g. wilderness vs urban) and thus prescribe what utility services are needed.
- Technical capacity of potential staff should be considered when choosing the type of infrastructure (apply "keep it simple" principles whenever possible)

REFERENCES to Natural Resources, Cultural Resources, Commercial Services may be appropriate. This would be pending completion of expanded policy documentation. *M Hudson 5/12/2022*

Project Phase 2.3 – Briefing Paper, Human Capital
Lead Author: Brandon Sousa
Team Members: Nancy Patterson, Brad Grenham

I.   Introduction.

The Institutional Strengthening Subgroup identified *Human Capital* as a key subtopic, or "theme", for analysis and research. The team examined the policy documents collected in Phase 1 related to this theme. "Human capital" is the term used in federal human resources to describe the skills, knowledge, and experience possessed by the federal workforce, but is also a general term for the federal workforce itself. Developing and recognizing human capital through training, merit awards, and advancement is a key policy of the federal government as an institution.

II.   Overview, Discussion, Demonstration Examples.

A. Valuing the Workforce

First and foremost, across the federal government all leaders state repeatedly and firmly that their organization's most valuable resource is its employees. Committing publicly and often to respect and appreciation for the agency's employees is standard and expected. Good leaders then demonstrate that respect by treating employees fairly in workplace advancement, rewarding excellent performance with merit awards, occasionally rewarding all employees with time off or other organization-wide expressions of gratitude, evaluating every employee through a fair, standardized appraisal process, and developing employees through training opportunities.

A demonstration example is the message sent to all Department of the Interior employees by Deb Haaland, Secretary of the Interior, prior to the July 4th holiday (a celebration of American independence from the United Kingdom):

> Dear Colleagues,
>
> As we head into the holiday weekend, I want to express how grateful I am to serve our country alongside you. We love our country and show our patriotism through the work we do every day at Interior. The 4th of July is a time to reflect on our storied history, while acknowledging that we as Americans are still working to build a "more perfect union."
>
> I know many of you will be working this holiday to ensure that our public lands are open and safe for people to enjoy, provide law enforcement and related support for

events, monitor wildfire risks, and remain on call to support our mission across the country. It is because of you that families are able to enjoy and celebrate the 4th of July. I appreciate you and your dedication today and every day.

In observance of the holiday, **I encourage supervisors to use their discretion to grant up to 2 hours of administrative leave (pay code 060) to their employees between Friday, July 1 and Friday, July 8, subject to workload and mission requirements.** Employees **must** receive approval from their supervisors before using administrative leave.

It is my hope that everyone finds time during this holiday week to enjoy some sunshine, maybe catch some fireworks, and reflect on how privileged we are to serve our country as members of the federal family. I'm honored to work at Interior and wish everyone a happy 4th of July.

Sincerely,

Deb Haaland (she/her)
Secretary of the Interior[1]

Agency leaders are repeatedly and extensively trained in how to engage with and develop employees and how to build and manage teams.[2]

B. Onboarding and Training

One key aspect of treating employees fairly, valuing them, and preparing them for success is providing quality training opportunities, including properly onboarding employees.

1. Onboarding

Onboarding is the process of bringing new employees into an organization and teaching them the fundamentals of how the organization operates, their smaller team's mission, and the work of the individual employee. Onboarding should involve not only training on technical basics, including how to report your time, how to operate equipment, and so on, but also substantive training on the larger organization.

An excellent example is the Bureau of Land Management (an agency within the Department of the Interior) Nevada New Employee Handbook. This 71-page Handbook not only explains how to use agency credit cards, how to record data, and how pay, leave, and other benefits work,[3] but also the mission and vision of the Department of the Interior, the Bureau of Land Management, and BLM Nevada.[4]

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[1] Email from Secretary Haaland to Interior Department Personnel, 11:08 AM, June 30, 2022.
[2] *See* National Park Service, Developing Yourself and Others: A Guide to Building High-Performance Organizations in the National Park Service (Mar. 2013).
[3] Bureau of Land Management Nevada Employee Handbook, Chapter 7 – Administration.
[4] *Id.* Chapters 1, 2, and 3.

2. Training

Training serves two purposes—it prepares the workforce to handle new responsibilities, while also keeping employees engaged and interested in their work by exposing them to new ideas and developing new abilities. Training should be provided universally and should be a regular occurrence. The Department of the Interior delivers training in many ways, through organization-wide trainings facilitated by "DOI Talent," a web-based training platform, ad hoc team-based trainings, and formal courses delivered by DOI University, a division of the agency that offers a variety of coursework, especially in leadership development. Another example is the Fish and Wildlife Service's National Conservation Training Center, an off-site education center similar to a college campus which offers coursework on critical competencies to wildlife biologists and managers.[5]

The National Park Service also embraces the necessity of continuing education, explaining in its NPS Management Policies that:

> Employees will also have opportunities to broaden their experiences and to progress in their careers through continuing education, undergraduate and graduate level courses, seminars, training, teaching, attendance at professional workshops and conferences, and other programs sponsored by scholarly institutions. In accordance with section 102 of the National Parks Omnibus Management Act of 1998 (16 USC 5912), the Park Service will implement a comprehensive training program for employees in all professional careers and a goal of ensuring that the workforce has the best, up-to-date knowledge, skills, and abilities with which to manage, interpret, and protect the resources of the national park system.[6]

See also the various forms of training designed to help employees enter leadership positions, described in the Leadership Training Subtopic Briefing Paper[7] developed in this phase 2.3 of the Georgia Technical Assistance project.

C. Performance Appraisals

Annual performance appraisals help ensure employee development, creating the platform for rewarding high-performers, and creating an opportunity to improve the performance of low-performing individuals. At the end of each fiscal year, supervisors across the federal government go through a formal rating process. The employee is given the opportunity to describe their accomplishments over the year, and the supervisor rates the employee on certain standard metrics, typically on a five-point scale where a 5 is "outstanding," a 4 "exceeds expectations," a 3 is "fully successful," and less than a 3 is "unacceptable." For example, attorneys at the Department of the Interior are rated by five critical elements: problem solving/legal analysis, effective oral

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[5] *See* Fish and Wildlife Service, National Conservation Training Center, https://www.fws.gov/program/national-conservation-training-center (last visited July 22, 2022).

[6] National Park Service Management Policies: The Guide to Managing the National Park System 1.9.1.1 (Aug. 31, 2006) (hereinafter "NPS Guide").

[7] Leadership Training Subtopic Briefing Paper.

communication, effective written communication, customer service, and individual work productivity and internal collaboration.[8]

The performance appraisal process has three parts. At the beginning of the year, the employee signs off on the criteria by which they will be evaluated, setting expectations and goals. Midyear, the supervisor performs a midyear assessment or otherwise performs a formal check-in with the employee. This is an opportunity for low-performing employees to improve, or mid- or high-performing employees to target certain goals. At the end of the year, the employee receives their final rating from their supervisor. Supervisors are trained on how to develop and deliver appraisals and bound by agency guidance.[9]

D. Merit Awards

The results of annual performance appraisals help inform merit awards. Excellent performance is often recognized by several types of these awards, acknowledging and celebrating high performance and career milestone events, and may be awarded for individual or for team accomplishments. Awards programs are generally built to "allow maximum flexibility in the design and application of a variety of traditional and non-traditional mechanisms to recognize individual and group achievement."[10]

The Department of the Interior honors employee performance with four types of awards. "Performance Awards" are granted when an employee receives an overall end-of-year performance rating of Superior (an overall score of 4 on the 5 point performance scale) or Exceptional (an overall score of 5 out of 5 points). Employees may be granted cash awards (either a specific amount, or an amount based on their salary, not to exceed 5% of annual salary), extra vacation day(s), or a "Quality Step Increase" (jumping an additional step on the General Service salary scale).[11]

Similar programs are available across the federal government, including, for example, the National Oceanic and Atmospheric Administration's Incentive Awards Program, which allows for external awards, honorary, monetary, and non-monetary awards.[12]

E. Advancement

There are two forms of advancement—advancement in one's position based on merit and/or seniority, and advancement to leadership based on merit. The first form of advancement should be experienced by every employee in an organization. As an employee gains greater experience in their position, they should be rewarded with regular pay increases after each year of successful

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[8] Department of the Interior, Form DI-300: Interior Employee Performance Appraisal Plan (October 2018).

[9] *See, e.g.*, Department of the Interior Performance Appraisal Handbook.

[10] Department of the Interior, Departmental Manual, 370 DM 451.1 ("Awards and Recognition Program").

[11] *See, e.g., id.*; Interior Personnel Bulletin No. 15-04, Non-Monetary Federal Department of the Interior Customer Service Awards Program; 370 Departmental Manual 451.3, Honor Awards; 370 Departmental Manual 451.4, Monetary Awards.

[12] *See* NOAA Administrative Order 202-451: NOAA Incentive Awards Program.

performance.[13] Outstanding performance may also, in some organizations, be rewarded by faster advancement within a particular pay grade, or other benefits.

Advancement to leadership should always be based on merit. Employees who seek a leadership position must apply when a position opens and compete with other candidates, and are evaluated based on their experience, reputation, and prior performance appraisals. It is critical that advancement is a transparent and fair process without favoritism.

The National Park Service treats advancement as a critical aspect of "succession planning," and prepares its workforce for advancement, developing the skills needed for leadership. "In accordance with section 103 of the National Parks Omnibus Management Act of 1998 (16 USC 5913), the Service will implement a management training and development plan whereby career, professional NPS employees from any appropriate academic field may obtain sufficient training, experience, and advancement opportunity to enable those qualified to move into park management positions, including the position of park superintendent."[14]

III.   Conclusions on Universal Best Practices for Human Capital.

After review of the cited and other relevant policy documents, the Institutional Strengthening team distilled the following as *universal best practices* for leadership training:

- An organization-wide, universally-accepted understanding that employees are the most valuable resource of any organization.
- Well-developed and consistently available onboarding and training opportunities offered to every member of the organization.
- Annual performance appraisals based on a standardized set of criteria that allow employees to grow and set the stage for merit awards.
- Merit awards acknowledging excellent work of individuals and teams.
- Transparent and fair opportunities for advancement available to all, including both advancement to leadership and advancement in seniority and pay within an employee's existing position.

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[13] Note that when an employee performs below a successful rating, a pay increase may not be provided.
[14] NPS Guidance at 1.9.1.2, Succession Planning.

DEPARTMENT OF THE INTERIOR - INTERNATIONAL TECHNICAL ASSISTANCE PROGRAM
GEORGIA PROTECTED AREAS POLICY REVIEW
INSTITUTIONAL STRENGTHENING
APRIL 2021

Project Phase 2.3 – Briefing Paper, Leadership Development - Training Subtopic
Lead Author: Brandon Sousa
Team Members: Brad Grenham, Nancy Patterson

I.   Introduction.

The Institutional Strengthening Subgroup identified *Leadership Training* as a key subtopic, or "theme", for analysis and research. The team examined the policy documents collected in Phase 1 related to this theme. Leadership training is important to effectively lead people, manage organizations, adapt to changing conditions, and support new leaders to step into increasing levels of responsibility with workforce change. This briefing paper provides an overview of the findings, with demonstration examples where relevant, and conclusions regarding the "universal best practices" that can be extracted from United States leadership training policies.

II.   Overview, Discussion, Demonstration Examples.[1]

As a threshold matter, leadership in the United States civil service consists generally of three levels: supervisory (positions overseeing one or more people); managerial (positions typically overseeing at least one subordinate supervisor); and executives, typically the Senior Executive Service ("SES") (the cohort of higher-level senior leaders who may oversee a number of supervisors and/or managers at an executive level). Employees seeking to enter leadership or management generally receive leadership training opportunities, both formal and informal.

Federal law,[2] implemented through Office of Personnel Management (OPM) regulations at 5 C.F.R. part 412, require agencies to provide training, develop competencies, and otherwise prepare individuals for advancement to leadership positions. "All agencies must provide for the development of individuals in supervisory, managerial and executive positions, as well as individuals whom the agency identifies as potential candidates for those positions[.]"[3] Each agency must issue written policies on their leadership development programs integrated with individual employee development plans and provide training to each supervisor and manager on how to: (1) mentor employees; (2) improve employee performance; (3) conduct performance appraisals; and (4) assist employees with unacceptable performance.[4] Agencies are also encouraged to develop year-long SES candidate development programs specifically to train

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[1] Note that "Demonstration Examples" may be its own section of the white paper, likely part "III", if that organization is best for a particular theme.
[2] *See, e.g.*, 5 U.S.C. chapter 41 (training); 5 U.S.C. § 3396 (programs for systematic development of candidates for the SES and continuing development of SES members).
[3] 5 C.F.R. § 412.202.
[4] *Id.*

individuals for the executive service.[5] Executives must also receive continuing training and development once in their position.[6]

    A. Formal Leadership Development Programs.

As explained above, every agency in the civil service builds a ladder to advancement. While it is required to design and implement these programs, there is broad discretion in what development and training tools to use. Demonstration examples of leadership development programs illustrate the methodologies agencies may take.

    1. For Staff, Supervisors, and Managers.

The National Oceanic and Atmospheric Administration's Leadership Capacities Development Program (LCDP) is available to employees with at least two years of tenure at the GS-13 grade level or higher (for NOAA, this includes staff below supervisor level, and at the supervisor or managerial level). LCDP has a set of core leadership competencies for its trainees including knowledge of business processes, a view of the entire agency rather than any one piece of it, how to work with Congress, how to work across organizational lines within NOAA, and on expanding professional networks both inside and outside of NOAA.[7] LCDP accomplishes this by assigning a senior leader to act as a formal mentor to each LCDP member and by providing a pre-program individual 360-degree assessment (involving surveying and interviewing colleagues and supervisors of the trainee), an individual development plan to lay the groundwork for what skills the trainee needs to gain, a formal leadership training program featuring presentations by senior leaders, three or four developmental details, assignment to agency-wide, high-profile initiatives, and a post-program individual 360-degree assessment to determine progress and next steps. During trainees' 18 months in the program, they rotate through "details" (temporary positions in other divisions of the agency filling new roles for the trainee) and spend several weeks meeting with other LCDP members for team training, including a 5-week split session at the Federal Executive Institute.[8]

The Bureau of Land Management's formal leadership training programs[9] are designed to promote, support and enhance employee development and leadership skills at all levels of the organization. The programs comply with 5 CFR 412.202, which discusses the systematic training and development of supervisors, managers, and executives. BLM focuses on "leadership at all levels"

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[5] 5 C.F.R. subpart C.

[6] 5 C.F.R. § 412.401.

[7] *See* www.lcdp.noaa.gov, or Google Drive > Georgia Policy Team Folder > 3. Institutional Strengthening > 1 Leadership Development > Leadership_NOAA_Leadership Capacity Development Program Overview.docx.

[8] An executive and management development and training center for governmental leaders near the University of Virginia. *See* https://leadership.opm.gov/facilities.aspx?f=48.

[9] *See* BLM 2021 Leadership Program Overview, or Google Drive > Georgia Policy Team Folder > 3. Institutional Strengthening > 1 Leadership Development > BLM 2021 Leadership Program Overview. *See also* BLM 2009 Leadership Excellence Program Improvements, or Google Drive > Georgia Policy Team Folder > 3. Institutional Strengthening > 1 Leadership Development > BLM > BLM 2009 Leadership Excellence Program Improvements.

and provides leadership trainings for new and seasoned employees. BLM Pathways introduces new employees to the BLM, related careers, partnership skillsets, and employee development. Employees continue to gain leadership skillsets through formal leadership training programs as they progress in leadership roles throughout their career. Programs include Emerging Leaders for staff who aspire to front-line leadership positions, Supervisory Development Training for new supervisors, Leadership Academy for seasoned managers who seek higher-graded leadership roles, and Executive Prep for senior leadership positions. These programs are competitive and include on-the-ground training, details and temporary promotions for practical experience, and support structures to assist with the participant's learning and development of leadership skillsets.

2. *For Developing Senior Executive Service Candidates.*

A specific form of leadership development program is targeted at SES candidates. These programs seek to develop "visionary leaders with a strong commitment to public service" with the skills needed to lead and transform government at the highest levels. Most agencies have created their own SES candidate development programs, after approval by the Office of Personnel Management.[10] These programs use similar methods to those outlined above, but focus on helping trainees develop the Executive Core Qualifications, which "represent the best thinking of organizational psychologists, human resources professionals both at OPM and other agencies, and Senior Executives themselves" on what is required for success at the executive level.[11] The Executive Core Qualifications are: leading change; leading people; results driven; business acumen; and building coalitions.

B. Informal Leadership Development.

It is important to note that throughout the government, these formal training programs are complemented by informal practical "on-the-ground" training that uses similar components as the formal programs. For example, every agency sends employees on details when workload in one area increases, a position has be vacated and is in process of refilling, or an individual is on extended leave.[12] Mentorships are also commonplace. Internal training programs offer various opportunities, such as those run by Department of the Interior University[13] and DOI Talent.[14] While these efforts are not formalized in coordinated programs, they are likely more commonplace and universal than any of the formal programs.

C. External Training.

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[10] *See* 5 C.F.R. part 412, subpart C (Senior Executive Service Candidate Development Programs).

[11] *See* U.S. Office of Personnel Management, Guide to Senior Executive Service Qualifications, https://www.opm.gov/policy-data-oversight/senior-executive-service/reference-materials/guidetosesquals_2010/.

[12] *See* 5 C.F.R. part 300, subpart C (Details of Employees); *see, e.g.*, Dep't of Housing and Urban Development, Handbook 750.1, Details, Interagency Agreement Assignments, and Intergovernmental Personnel Act Assignments Policy, https://www.hud.gov/sites/documents/750.1AFGECHCH.PDF.

[13] *See* https://doiu.doi.gov/.

[14] An internal website delivering training and appraisals for all employees.

The civil service also takes advantage of external sources of leadership training. For instance, the Association of Nature Center Administrators is a nonprofit that provides resources and support for leaders in the field including a job board, discussion groups, training, mentoring, leadership acknowledgement, professional conferences, networking, and publications and resources.[15] Agencies may informally use their training budgets to pay for leadership courses provided by universities or other institutions or for executive coaching. Institutions like the Fish and Wildlife Service's National Conservation Training Center trains staff from its sponsor agencies without charge, but charges tuition for other participants, including those from other federal agencies.[16]

III. Conclusions on Universal Best Practices for Leadership Training.

After review of the cited and other relevant policy documents, the Institutional Strengthening team distilled the following as *universal best practices* for leadership training:

- An organization-wide mandate to develop leadership training programs, for all levels of leadership, such as that required by the OPM regulations. The mandate should cover every level of training and every agency but be flexible in its requirements so that individual agencies may determine the best way to train leaders. The responsibility for developing their subordinates should be part of the leaders' performance plans.
- Formal leadership programs that make use of tools, including but not limited to: mentorship, developmental details, assignment to high-profile initiatives, formal classroom training, presentations by senior leaders, and relationship-building with other trainees, personnel from across the agency, partners and external individuals or groups.
- Widespread and commonplace informal leadership training through details, mentorship, use of a training budget to pay for leadership-related skill building or classroom instruction, job shadowing and other relevant methods. This form of training should exist outside of formal training programs.
- In addition to internal training, agencies should be empowered to permit their employees to pursue and participate in external opportunities to build leadership skills, such as those offered by professional organizations such as the Association for Nature Center Coordinators. Agencies may develop a flexible training budget to fund these opportunities.

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[15] *See* Association of Nature Center Administrators, https://natctr.org.
[16] *See* https://training.fws.gov/courses/tuition/. The Training Center thus serves anyone from across the federal government, state and local governments, or private entities.

DEPARTMENT OF THE INTERIOR - INTERNATIONAL TECHNICAL ASSISTANCE PROGRAM
GEORGIA PROTECTED AREAS POLICY REVIEW
INSTITUTIONAL STRENGTHENING SUBGROUP
JULY 2022

Briefing Paper
Organizational Development: Mission and Values

Agency Organic Acts
Lead Author: Brad Grenham
Team Members: Nancy Patterson, Brandon Sousa

I.   Introduction to Agency Organic Acts

In the United States, the Congress (legislature) sets the mission for Federal agencies through laws (also known as "acts"). Most land managing agencies have an "organic"[1] act which provides the overall agency mission, organizational structure, agency authorities and the processes to implement the mission, such as through land use planning. While organic acts set the mission, agency leaders have discretion on how to carry out the details of this mission. Organic acts are important because they implement the rule of law through providing legal standards for agencies and guiding public expectations regarding how the agency will manage land and natural resources. For example, organic acts can direct how agencies engage with partners, acquire and dispose of land, accommodate multiple uses, provide for visitation and research, enforce laws, and involve the public. This paper will provide an overview of organic acts governing four land managing agencies in the United States and conclude with recommended best practices in organic acts.

II.   Examples of Four Agency Organic Acts: National Park Service, Forest Service, Bureau of Land Management, and Fish and Wildlife Service

This section will summarize the organic acts governing land and resource management by the United States National Park Service (NPS), Bureau of Land Management (BLM), Forest Service, and Fish and Wildlife Service (FWS). The National Park Service and Fish and Wildlife Service organic acts emphasize two themes: conservation and recreation. By contrast, the BLM and Forest Service organic acts provide for "multiple use" that balances commodity production (e.g., minerals and timber) with conservation and recreation.

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[1] Organic, as used here, means a systematic coordination of parts.

A. National Park Service Organic Act

1. Mission

The National Park Service's organic act, officially known as the "National Park System General Authorities Act," provides that it is the National Park Service's mission to manage park system units to "conserve the scenery, natural and historic objects, and wildlife in the System units and to provide for the enjoyment of the scenery, natural and historic objects, and wild life in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."[2] The National Park System includes "any area of land and water" administered by NPS "for park, monument, historic, parkway, recreational, or other purposes."[3] The System includes "superlative natural, historic, and recreation areas in every major region of the United States" which are "distinct in character" but "united through their interrelated purposes and resources into one National Park System as cumulative expressions of a single national heritage."[4]

NPS is located within the Department of the Interior[5] and managed by a Director who has "substantial experience and demonstrated competence in land management and natural or cultural resource conservation."[6] The Director is appointed by the President, with the advice and consent of the Senate.[7]

2. Planning

The Act requires NPS to prepare "general management plans" for the "preservation and use of each System unit."[8] The plans include "measures for the preservation of the area's resources" as well as "indications of types and general intensities of development (including visitor circulation and transportation patterns…) associated with public enjoyment and use of the area, including general locations, timing of implementation, and anticipated costs."[9] Plans also include "identification of and implementation commitments for visitor carrying capacities," and "potential modifications to the external boundaries of the System unit, and the reasons for the modifications."[10] Each park prepares a 5-year strategic plan to reflect NPS national policies, goals, and outcomes and an annual performance plan describing how available funding will be allocated for resource preservation, visitor services, and administration.[11] The NPS conducts a

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[2] 54 U.S.C. § 100101(a).
[3] 54 U.S.C. § 100501.
[4] 54 U.S.C. § 100101(b).
[5] 54 U.S.C. § 100301.
[6] 54 U.S.C. § 100302(a).
[7] 54 U.S.C. § 100302(a).
[8] 54 U.S.C. § 100502.
[9] 54 U.S.C. § 100502.
[10] 54 U.S.C. § 100502.
[11] 54 U.S.C. § 100503.

periodic systematic review approximately every three years that lists: a) non-federal parcels within the System that NPS would prioritize for acquisition and b) the current and future needs of each System unit for "resource management, interpretation, construction, operation and maintenance, personnel, and housing, together with an estimate of the costs."[12]

3. General Authorities

The Act provides processes for changing park boundaries[13] and adding new areas to the System.[14] The Act encourages use of high-quality science and information,[15] cooperative study with universities,[16] a program of inventory and monitoring,[17] and scientific study.[18]

The Act promotes interpretation and education concerning park resources.[19] Interpretation includes "providing opportunities for people to form intellectual and emotional connections to gain awareness, appreciation, and understanding of the resources of the System."[20] NPS reviews interpretation and education programs to ensure they address how people learn, reflect different visitor backgrounds, demonstrate innovative approaches to management, and reflect current research.[21] Park partners and volunteers may help deliver interpretation and education.[22]

NPS may recover financial compensation (damages) from any person who injures or destroys System resources and NPS may use these funds to restore damaged resources.[23] The NPS may issue regulations "necessary or proper for the use and management of System units."[24]

NPS may issue rights of way through Park units for power transmission, water supply, and other uses where compatible with the public interest.[25] NPS may accept land, rights-of-way, buildings, other property, and donations of money.[26] NPS may engage in land exchanges with non-federal parties.[27]

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[12] 54 U.S.C. § 100505.
[13] 54 U.S.C. § 100506.
[14] 54 U.S.C. § 100507.
[15] 54 U.S.C. § 100702.
[16] 54 U.S.C. § 100703.
[17] 54 U.S.C. § 100704.
[18] 54 U.S.C. § 100705.
[19] 54 U.S.C. § 100801-100804.
[20] 54 U.S.C. § 100801.
[21] 54 U.S.C. § 100803.
[22] 54 U.S.C. § 100804.
[23] 54 U.S.C. § 100721-100724.
[24] 54 U.S.C. § 100751.
[25] 54 U.S.C. § 100902.
[26] 54 U.S.C. § 101101.
[27] 54 U.S.C. § 102901.

The Act requires NPS to develop a comprehensive training program for employees to ensure the workforce has "the best up-to-date knowledge, skills, and abilities with which to manage, interpret, and protect the resources of the System."[28] And the Act requires a clear plan for management training "under which career professional Service employees from any appropriate academic field may obtain sufficient training, experience, and advancement opportunity to enable those qualified to move into System unit management positions."[29]

NPS may provide public accommodations, facilities, and services within System units where necessary and appropriate for public use and enjoyment; but only in a manner that will not unduly impair resources and that is limited to "locations that are consistent to the highest practicable degree with the preservation and conservation of the resources and values of the System units."[30]

NPS may designate law enforcement personnel to maintain law and order and protect individuals and property within System units.[31] Law enforcement personnel may carry firearms, make arrests, and conduct investigations concerning offenses connected with the Park system.[32]

4. Partnerships

The Act establishes a National Park Foundation to accept and administer gifts for the benefit of the park system.[33] NPS may enter financial agreements including cost-share agreements, cooperative agreements, cooperative management agreements, and reimbursable agreements.[34] NPS may also authorize concessions to private commercial operators to provide accommodations, facilities, and services to visitors to System units.[35] (These agreements and concessions are discussed separately in another paper.) NPS may also authorize organizations to provide services to visitors to System units through a commercial use authorization.[36]

NPS may recruit, train, and accept the services of volunteers for interpretive functions or other visitor services or activities. Volunteers may not be used in hazardous duty or law enforcement work or in policymaking processes, or to displace any employee.[37]

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[28] 54 U.S.C. § 101321.
[29] 54 U.S.C. § 101322.
[30] 54 U.S.C. § 101912.
[31] 54 U.S.C. § 102701.
[32] 54 U.S.C. § 102701.
[33] 54 U.S.C. § 101111-101122.
[34] 54 U.S.C. § 101701-101704.
[35] 54 U.S.C. § 101913-101923.
[36] 54 U.S.C. § 101925-101938.
[37] 54 U.S.C. § 102301.

B. *Bureau of Land Management*

1. Mission

The Federal Land Policy and Management Act of 1976 (FLPMA) is the organic act for the Bureau of Land Management, which manages large areas of public lands in the United States. Public lands are to be managed for "multiple use"[38] which is a "a combination of balanced and diverse resource uses" including, but not limited to "recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values."[39] This does not mean that every tract of land is managed for all uses, as FLPMA provides for "the use of some land for less than all of the resources."[40]

The BLM is headed by a director, who must "have a broad background and substantial experience in public land and natural resource management" and be confirmed by the Senate.[41]

1. Planning

BLM plans for multiple use through preparing land use plans "which provide by tracts or areas for the use of the public lands."[42] BLM conducts this land use planning with public involvement.[43] In emphasizing different uses of areas, BLM may set aside areas for specific purposes, such as "areas of critical environmental concern."[44] FLPMA provides for BLM to prepare and maintain an inventory of public lands and their resources, including outdoor recreation and scenic values.[45]

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[38] 43 U.S.C. § 1732(a).

[39] 43 U.S.C. § 1702(c). The full definition of multiple use shows the complexity of this mission: "The term "multiple use" means the management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; the use of some land for less than all of the resources; a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output."

[40] 43 U.S.C. § 1702(c).

[41] 43 U.S.C. § 1731(a).

[42] 43 U.S.C. § 1712(a).

[43] 43 U.S.C. § 1712(a).

[44] 43 U.S.C. § 1712(c).

[45] 43 U.S.C. § 1711.

1. General Authorities

In light of the multiple use direction, FLPMA provides direction on the management of mining claims[46] and permits for livestock grazing on rangelands.[47] BLM may acquire lands by purchase, exchange, or donation.[48] BLM may sell tracts of land that are difficult or uneconomic to manage, not needed for federal management, or better used for other important public objectives.[49] BLM may issue rights-of-way for canals, pipelines, powerlines, telecommunications, access, and other purposes.[50] Rights of way are subject to terms and conditions to protect the environment.[51] BLM manages some roadless lands with wilderness characteristics as "wilderness study areas"[52] Congress can subsequently designate the lands as Wilderness under the Wilderness Act.[53]

BLM may conduct studies independently, or in cooperation with others, concerning land management.[54] FLPMA provides for BLM to establish advisory councils made up of persons representing "various major citizens' interests" to provide advice on land management.[55]

FLPMA provides for employees carrying out the act to disclose known financial interests in applications of third parties for permits or other rights.[56] BLM may issue regulations to implement FLPMA and violation of these regulations is unlawful.[57]

1. Partnerships

BLM may enter contracts and cooperative agreements involving land management.[58] BLM may accept donations of money, services, or property for land management.[59] BLM may recruit volunteers, although volunteers cannot perform hazardous duties or policymaking or displace employees.[60]

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[46] 43 U.S.C. § 1734.

[47] 43 U.S.C. § 1751-1753.

[48] 43 U.S.C. § 1715.

[49] 43 U.S.C. § 1713(a).

[50] 43 U.S.C. § 1761.

[51] 43 U.S.C. § 1765.

[52] 43 U.S.C. § 1782.

[53] 16 U.S.C. § 1782.

[54] 43 U.S.C. § 1737(a).

[55] 43 U.S.C. § 1739.

[56] 43 U.S.C. § 1743.

[57] 43 U.S.C. § 1733(a), (g).

[58] 43 U.S.C. § 1737(b).

[59] 43 U.S.C. § 1737(c).

[60] 43 U.S.C. § 1737(d), (e).

C. National Wildlife Refuge System

1. Mission

The United States Fish and Wildlife Service administers the National Wildlife Refuge System as "a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats."[61] Wildlife refuges also provide for "compatible wildlife-dependent recreation."[62] FWS administers the Wildlife Refuge System to "ensure that the biological integrity, diversity, and environmental health of the System."[63] FWS undertakes a "compatibility determination" to determine whether a use of a refuge is compatible with refuge resources and purposes.[64]

1. Planning

FWS plans for each refuge through a "comprehensive conservation plan."[65] The plan describes the purpose of the refuge; the fish, wildlife, and plant populations and related habitats; archaeological and cultural resources; areas suitable for administrative or visitor facilities; "significant problems that may adversely affect the populations and habitats of fish, wildlife, and plants … and the actions necessary to correct or mitigate such problems;" and opportunities for compatible wildlife-dependent recreational uses.[66] FWS provides for opportunity for public comment on each plan.[67]

1. General Authorities

FWS may authorize hunting and fishing within the system where compatible with the purposes of a particular area.[68] FWS may acquire lands by purchase or by exchange of public lands.[69] FWS may grant easements for purposes such as powerlines, canals, ditches, pipelines, and roads where compatible with the refuge purposes.[70] FWS may issue regulations to carry out the Act.[71] No person may injure or remove refuge resources or take any wildlife unless authorized by FWS.[72]

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[61] 16 U.S.C. § 668dd(a)(2).

[62] 16 U.S.C. § 668dd(a)(3).

[63] 16 U.S.C. § 668dd(a)(4).

[64] 16 U.S.C. § 668dd(d)(3).

[65] 16 U.S.C. § 668dd(e).

[66] 16 U.S.C. § 668dd(e).

[67] 16 U.S.C. § 668dd(e).

[68] 16 U.S.C. § 668dd(c), (d).

[69] 16 U.S.C. § 668dd(b)(2)-(3).

[70] 16 U.S.C. § 668dd(d).

[71] 16 U.S.C. § 668dd(b)(5).

[72] 16 U.S.C. § 668dd(c).

2. Partnerships

FWS may enter contracts with private parties or public agencies for provision of public accommodations in locations consistent with the refuge purposes.[73] FWS may accept donations of funds and use these funds to acquire or manage lands.[74] FWS may enter into cooperative agreements with state fish and wildlife agencies for management of programs on a refuge.[75]

D. *Forest Service*

1. Mission

The National Forest Management Act of 1976 (NFMA)[76] is the Forest Service organic act. National Forests are managed to "provide for multiple use and sustained yield of the [forest] products and services" including "outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness."[77]

NFMA recognizes that "the management of the Nation's renewable resources is highly complex and the uses, demand for, and supply of the various resources are subject to change over time."[78] Forest Service undertakes a "Renewable Resource Assessment" every decade which includes, among other things, "an analysis of present and anticipated uses, demand for, and supply of the renewable resources" and "an inventory … of present and potential renewable resources, and an evaluation of opportunities for improving their yield" as well as "an analysis of the potential effects of global climate change on the condition of renewable resources."[79] NFMA provides policy direction that that "all forested lands in the National Forest System shall be maintained in appropriate forest cover with species of trees, degree of stocking, rate of growth, and conditions of stand designed to secure the maximum benefits of multiple use sustained yield management in accordance with land management plans."[80]

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[73] 16 U.S.C. § 668dd(b)(1).

[74] 16 U.S.C. § 668dd(b)(2).

[75] 16 U.S.C. § 668dd(b)(4).

[76] 16 U.S.C. §§ 1600-1614.

[77] 16 U.S.C. § 1604(e). Like BLM's Organic Statute, FLPMA, the Forest Service applies a similarly broad definition of "multiple use" as defined in the Multiple-Use Sustained-Yield Act of 1960, 16 U.S.C. § 528-531. Multiple use is defined as "The management of all the various renewable surface resources of the national forests so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some land will be used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output." 16 U.S.C. § 531.

[78] 16 U.S.C. § 1600.

[79] 16 U.S.C. § 1601(a).

[80] 16 U.S.C. § 1601(e)(1).

1. Planning

Like other land managing agencies, Forest Service develops and periodically revises "land and resource management plans" for individual forests.[81] The planning process includes public participation.[82] Plans "determine forest management systems [and] harvesting levels" and consider "the economic and environmental aspects of various systems of renewable resource management" and "provide for diversity of plant and animal communities."[83] Plans determine locations for uses including "outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness."[84] NFMA requires Forest Service to "develop and maintain on a continuing basis a comprehensive and appropriately detailed inventory of all National Forest System lands and renewable resources."[85]

NFMA limits sale of timber from each forest to "a quantity equal to or less than a quantity which can be removed from such forest annually in perpetuity on a sustained-yield basis."[86] NFMA regulates the development of roads to achieve a "proper system of transportation to service the National Forest System" and "meet anticipated needs on an economical and environmentally sound basis."[87]

1. General Authorities

Forest Service may conduct experiments to analyze scientific information about managing forest resources.[88] The Forest Service may establish advisory boards to secure advice from a cross section of groups interested in Forest System management.[89] NFMA also requires Forest Service to give federal, state, and local governments and the public an opportunity to comment on standards and guidelines applicable to Forest Service programs.[90] The Forest Service may issue regulations necessary and desirable to carry out NFMA.[91]

2. Partnerships

The Forest Service may establish experiment stations and research laboratories and may cooperate with other United States and international agencies and institutions in this research.[92]

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[81] 16 U.S.C. § 1604.
[82] 16 U.S.C. § 1604.
[83] 16 U.S.C. § 1604.
[84] 16 U.S.C. § 1604(e).
[85] 16 U.S.C. § 1603.
[86] 16 U.S.C. § 1611(a).
[87] 16 U.S.C. § 1608.
[88] 16 U.S.C. § 1642.
[89] 16 U.S.C. § 1612(b).
[90] 16 U.S.C. § 1612(a).
[91] 16 U.S.C. § 1613.
[92] 16 U.S.C. § 1643.

III. Conclusions on Universal Best Practices.

Organic acts set out legal standards for agencies and guide public expectations regarding how the agency will manage land and natural resources. From the four examples of organic acts above, some best practices can be drawn. Organic acts should provide standards and authorities for:

1. Agency mission and purpose for land and resource management (such as recreation, conservation, multiple use)
2. Agency leadership structure
3. Land use planning process including inventory of resources and decisions on objectives and allowed uses by area
4. Public participation opportunities, including advisory councils
5. Acquiring, exchanging, and disposing of land
6. Accepting donations
7. Issuing land use authorizations, such as rights of way
8. Providing for visitor services
9. Conducting research
10. Cooperating with partners (including volunteers and other units of government), and contracting with other parties
11. Prohibiting unauthorized use and conducting law enforcement
12. Agency issuance of more detailed rules and policies to achieve the mission

Briefing Paper
Organizational Development: Environmental Impact Assessments
The National Environmental Policy Act: Integrating Public Disclosure and Informed Decisionmaking
Lead Author: Brad Grenham
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I. INTRODUCTION

Agencies in the United States, and many other nations, inform their decisionmaking and engage the public through preparation of an environmental impact statement (EIS) (alternatively known as "environmental impact assessment") under the National Environmental Policy Act (NEPA) in the United States or similar law in other nations.[1] While it may appear daunting, the task is more manageable with an understanding of the purpose of NEPA, the key components of an EIS, and the guidelines for designing each component. This paper seeks to assist with the basics by describing the components of an EIS and providing some key regulatory and case law guidance on each component.

II. THE PURPOSE OF AN EIS

A. Informed Decision-making

In developing each component of the EIS, the guiding principle is that the purpose of the document is "to insure a fully informed and well-considered decision."[2] "NEPA's purpose is not to generate paperwork . . . but to foster excellent action" and "help public officials make decisions that are based on understanding of environmental consequences."[3]

The EIS "ensures that the agency . . . will have available, and will carefully consider, detailed information concerning significant environmental impacts" and "it guarantees that the relevant information will be made available to the larger audience."[4] NEPA procedures "insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken."[5] Publication of an EIS "serves a larger informational role," as it

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[1] 42 U.S.C. §§ 4321-4347.

[2] *Vermont Yankee Nuclear Power Corp. v. Nat. Res. Def. Council, Inc.*, 435 U.S. 519, 558 (1978).

[3] 40 C.F.R. § 1500.1(c).

[4] *Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752, 768 (2004).

[5] 40 C.F.R. § 1500.1(b).

"provides a springboard for public comment."[6] The "touchstone" is whether an EIS analysis "fosters informed decision-making and informed public participation."[7]

B. NEPA Focuses on Informing Federal Agency Decision-making

"Major federal action" includes "projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by federal agencies"; "adoption of official policy, such as rules, regulations"; "adoption of formal plans which guide or prescribe alternative uses of federal resources"; and "approval of specific projects."[8]

III. THE COMPONENTS OF AN EIS

A. Statutory Requirements

NEPA requires that federal agencies:

> include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on—
> (i) the environmental impact of the proposed action,
> (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,
> (iii) alternatives to the proposed action,
> (iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and
> (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.[9]

B. CEQ Regulations

Council on Environmental Quality regulations[10] and companion regulations issued by specific agencies[11] provide more details on EIS contents. CEQ also resolves interagency disagreements concerning proposed major Federal actions that might cause unsatisfactory environmental effects; for example, the Environmental Protection Agency has authority to review an EIS prepared by other federal agencies. CEQ regulations provide that an EIS should contain-

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[6] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989).

[7] *Calif. v. Block*, 690 F.2d 753, 767 (9th Cir.1982); *Westlands Water Dist. v. U.S. Dep't of Interior*, 376 F.3d 853, 868 (9th Cir. 2004).

[8] 40 C.F.R. § 1508.18.

[9] 42 U.S.C. § 4332(C).

[10] 40 C.F.R. §§ 1500-1508.

[11] *See e.g.* 43 C.F.R. § 46 (Interior Department).

- a statement of the purpose and need for the action,

- a description of the affected environment,

- the proposed action and an analysis of alternatives to the proposed action,

- environmental consequences, including the direct, indirect and cumulative effects of the proposed action and alternatives,

- mitigation measures.[12]

The diagram below illustrates how these key components build on each other. First, the purpose and need statement provides the foundation from which the agency designs alternatives, including mitigation measures. Next, the agency analyzes impacts of the alternatives against the baseline of the affected environment. Ultimately, the record of decision selects an alternative.

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[12] 40 C.F.R. § 1502.10.

The Elements of an EIS Under NEPA

Record of Decision

Effects
(Direct, Indirect, Cumulative)

Affected Environment

Alternatives including Mitigation

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-

Purpose and Need Statement

-

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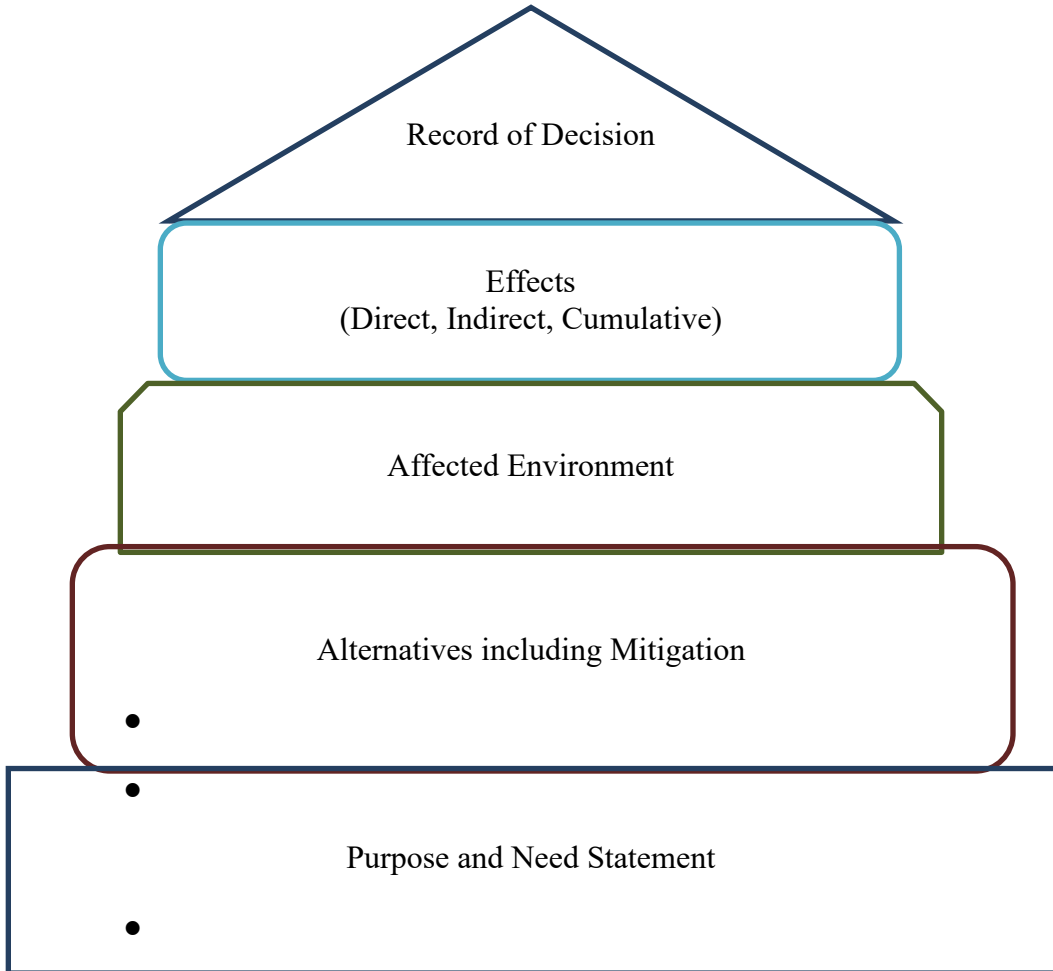
C. The Purpose and Need Statement

An EIS "shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action."[13] The purpose and need statement determines the range of alternatives because the agency need only consider alternatives that meet the purpose and need. "The broader the purpose, the wider the range of alternatives; and vice-versa."[14] While not essential to parse "purpose" from "need," the purpose can be described as "a goal or objective" and the need as the "underlying problem or opportunity."[15]

The purpose and need statement becomes more complicated when the agency is responding to an external proposal; agencies can give weight to the third party's objectives but need to also consider statutory objectives. The agency may "give substantial weight to the goals and objectives" of the private proponent[16] and "may accord substantial weight to the preferences of the applicant . . . in the siting and design of the project."[17] Agencies may not, however, adopt "private interests to draft a narrow purpose and need statement that excludes alternatives that fail to meet specific private objectives . . ."[18] Agencies should consider "the agency's statutory authorization to act, as well as . . . other congressional directives."[19]

1. Purpose and Need Examples

- A forestry project purpose "to reduce risk to the site by reducing stand densities, and lowering susceptibility to catastrophic loss to insects, disease, and fire" including a research component, was reasonable and "consistent with statutory authority for protection against destruction by fire and authority to carry out research."[20]

- Where a licensing agency was considering a private proposal to build a natural gas pipeline to provide electrical power, it was "appropriate for the agency to give substantial weight to the goals and objectives of that private actor." [21] The agency "was not obligated to reject that project in favor of a non-natural gas alternative which was purely hypothetical and speculative."[22]

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[13] 40 C.F.R. § 1502.13.

[14] *Simmons v. U.S. Army Corps of Engineers*, 120 F.3d 664, 666 (7th Cir. 1997).

[15] BLM National Environmental Policy Act Handbook, H-1790-1, (2008) at 35.

[16] *Fuel Safe Washington v. F.E.R.C.*, 389 F.3d 1313, 1324 (10th Cir. 2004).

[17] *Union Neighbors United, Inc. v. Jewell*, 831 F.3d 564, 575 (D.C. Cir. 2016).

[18] *Nat'l Parks & Conservation Ass'n v. Bureau of Land Mgmt.*, 606 F.3d 1058, 1072 (9th Cir. 2010).

[19] *National Parks & Conservation Ass'n*, 606 F.3d at 1070.

[20] *League of Wilderness Defenders-Blue Mountains Biodiversity Project*, 689 F.3d at 1069-70.

[21] *Fuel Safe Washington*, 389 F.3d at 1324.

[22] *Id.*

D. *The Range of Alternatives*

CEQ regulations provide that the EIS shall "present the environmental impacts of the proposal and the alternatives in comparative form."[23] The EIS should "[r]igorously explore and objectively evaluate all reasonable alternatives" and for "alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated."[24] Agencies must "include the alternative of no action,"[25]and identify the preferred alternative or alternatives.[26]

The purpose and need statement drives the alternatives because the "range of alternatives that must be considered in the EIS need not extend beyond those reasonably related to the purposes of the project."[27] An EIS need not consider alternatives that are "infeasible, ineffective, or inconsistent with basic policy objectives," or alternatives "which are not significantly distinguishable from alternatives actually considered, or which have substantially similar consequences."[28] The EIS "need not provide a detailed study of alternatives that do not accomplish that purpose or objective, as those alternatives are not 'reasonable.'"[29]

2. Range of Alternatives Examples

- The Bureau of Land Management (BLM) issued a right-of-way grant to a private party to construct and operate a wind energy facility on public lands. The EIS considered five action alternatives as well as two no-action alternatives. The EIS also briefly considered three other energy-generation alternatives, including distributed generation through rooftop solar. The BLM dismissed the distributed-generation alternative because it failed to meet the purposes and presented feasibility challenges. The court upheld BLM's range of alternatives and dismissal of the distributed generation alternative, noting that "BLM reasonably concluded that the overall effectiveness of a distributed-generation alternative, reliant on private installation and technical upgrading, remained speculative in practice."[30]

- In a challenge to a National Park Service elk and vegetation management plan in Rocky Mountain National Park, plaintiff alleged the EIS unreasonably failed to include the reintroduction of a naturally reproducing wolf population as an alternative for managing growing elk populations and their impacts on vegetation. The court upheld the agency under the "rule of reason," as the record explained that the "natural wolf alternative would be

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[23] 40 C.F.R. § 1502.14.

[24] 40 C.F.R. § 1502.14(a).

[25] 40 C.F.R. § 1502.14(d).

[26] 40 C.F.R. § 1502.14(e).

[27] *Westlands Water Dist.*, 376 F.3d at 868; *see also Citizens' Comm. to Save Our Canyons v. U.S. Forest Serv.*, 297 F.3d 1012, 1031 (10th Cir. 2002); *Union Neighbors United, Inc.*, 831 F.3d at 575.

[28] *Headwaters, Inc. v. Bureau of Land Mgmt., Medford Dist.*, 914 F.2d 1174, 1181 (9th Cir. 1990).

[29] *Wyoming v. U.S. Dep't of Agric.*, 661 F.3d 1209, 1244 (10th Cir. 2011).

[30] *Protect Our Communities Foundation*, 825 F.3d at 581.

impractical despite some marginal upside" due in part to the Park's modest size, limited wolf habitat, and proximity to residential and commercial developments at the park entrances.[31]

- Where a private party proposed to build a wind farm that could affect endangered bats, the U.S. Fish and Wildlife Service conducted NEPA analysis before issuing an Endangered Species Act permit governing potential harm to bats. The agency "identified and considered six alternatives . . . three of which were analyzed in depth."[32] The alternatives "focused on the dates, times, and speed of turbine operation."[33] In addition to proponent's proposal, the agency analyzed: 1) a maximally restricted operations alternative (that would lose revenue); 2) a minimally restricted operations alternative; and 3) a no action alternative. The court held "the Service failed to consider a reasonable range of alternatives because it did not consider any reasonable alternative that would be economically feasible while taking fewer bats" than the private proposal.[34]

E. Affected Environment

The EIS "shall succinctly describe the environment of the area(s) to be affected or created by the alternatives under consideration" in a description "no longer than is necessary to understand the effects of the alternatives."[35] "[F]or some environmental effects (such as wetlands impacts), a smaller area of impact may need to be considered, whereas for others (such as wildlife movement or air quality), a larger area should be studied."[36] Analyzing the affected environment sets forth "the baseline conditions" which allow the agency "to determine what effect the proposed action will have on the environment."[37]

3. Affected Environment Example

- The Forest Service had a "reasonably thorough" discussion of the affected environment and did not need to describe "the functioning of the affected ecosystems" because, although a possible effect would be on ecosystems, the description of the affected environment "should be succinct, no longer than is necessary, and avoid useless bulk and verbosity."[38]

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[31] *WildEarth Guardians v. Nat'l Park Serv.*, 703 F.3d 1178, 1184 (10th Cir. 2013).

[32] *Union Neighbors United, Inc.*, 831 F.3d at 572.

[33] *Id.*

[34] *Id.* at 576.

[35] 40 C.F.R. § 1502.15.

[36] *Laguna Greenbelt, Inc. v. U.S. Dep't of Transp.*, 42 F.3d 517, 529 (9th Cir. 1994), *as amended on denial of reh'g* (Dec. 20, 1994).

[37] *W. Watersheds Project v. Bureau of Land Mgmt.*, 552 F. Supp. 2d 1113, 1126–1127 (D. Nev. 2008).

[38] *Friends of Mt. Hood v. United States Forest Serv.*, 2000 U.S. Dist. LEXIS 18309, 37-38 (D. Or. Dec. 15, 2000).

F. Effects

CEQ regulations require consideration of "the environmental impacts of the alternatives including the proposed action"; "any adverse environmental effects which cannot be avoided"; "the relationship between short-term uses . . . and the maintenance and enhancement of long-term productivity" of the environment; and "any irreversible or irretrievable commitments of resources."[39] This includes discussion of direct and indirect effects.[40] Direct effects "are caused by the action and occur at the same time and place."[41] Indirect effects "are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable" such as "growth inducing effects."[42]

Effects include "ecological . . . aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative."[43] Cumulative impact is the "incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions."[44]

Cumulative impacts can be described as having five components:

> (1) the area in which the effects of the proposed project will be felt; (2) the impacts that are expected in that area from the proposed project; (3) other actions-past, present, and proposed, and reasonably foreseeable-that have had or are expected to have impacts in the same area; (4) the impacts or expected impacts from these other actions; and (5) the overall impact that can be expected if the individual impacts are allowed to accumulate.[45]

The cumulative impact analysis considers "the effect of the current project along with any other past, present or likely future actions in the same geographic area."[46] Determining geographic scope "is a task assigned to the special competency" of the agency, which "must balance need for a comprehensive analysis versus considerations of practicality, while also keeping in mind that use of a larger analysis area can dilute the apparent magnitude of environmental impacts."[47]

"NEPA does not require the agency to assess *every* impact or effect of its proposed action, but only the impact or effect on the environment" because "NEPA was designed to promote human

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[39] 40 C.F.R. § 1502.16.

[40] 40 C.F.R. § 1502.16(a)-(b).

[41] 40 C.F.R. § 1508.8(a).

[42] 40 C.F.R. § 1508.8(b).

[43] 40 C.F.R. § 1508.8.

[44] 40 C.F.R. § 1508.7.

[45] *TOMAC, Taxpayers of Michigan Against Casinos v. Norton*, 433 F.3d 852, 864 (D.C. Cir. 2006).

[46] 433 F.3d at 864; *Grand Canyon Tr. v. F.A.A.*, 290 F.3d 339, 345 (D.C. Cir. 2002), *as amended* (Aug. 27, 2002) (NEPA "cumulative impacts" applies to "impacts in the same area").

[47] *Friends of the Wild Swan v. Weber*, 767 F.3d 936, 943 (9th Cir. 2014) citing *Kleppe v. Sierra Club*, 427 U.S. 390, 414 (1976).

welfare by alerting governmental actors to the effect of their proposed actions on the physical environment."[48] Some "quantified or detailed information is required" unless the agency provides "justification regarding why more definitive information could not be provided."[49] Agencies need not consider impacts "that are too speculative or hypothetical to meaningfully contribute to NEPA's goals of public disclosure and informed decision-making."[50]

4. Effects Examples

- Forest Service cumulative effects analysis for forestry projects was reasonable in considering effects on the lynx where the agency considered effects on three to four "lynx analysis units touched by the project" and these units were large areas approximating the home range of a lynx and contained sufficient habitat to support lynx survival and reproduction.[51]

- The Forest Service cumulative effects analysis for forestry projects was not reasonable in relying on "home range" as the scale of analysis for cumulative effects for a timber sale where the record indicated "cumulative effects analysis of the species at issue '*must* be addressed at a landscape scale.'"[52]

- Where three other timber sales were proposed for an area, the court held that the agency's cumulative impact analysis for a timber sale was inadequate "in terms of the sales' combined effect on depleting existing old growth habitat" because the agency "provided some information in regard to the cumulative effects of all proposed timber sales on old growth habitat, but the analysis provided was very general" and did not constitute a hard look.[53]

G. Mitigation Measures

CEQ regulations require discussion of mitigation "in defining the scope of the EIS, 40 C.F.R. § 1508.25(b), in discussing alternatives to the proposed action, § 1502.14(f), and consequences of that action, § 1502.16(h), and in explaining its ultimate decision, § 1505.2(c)."[54]

5. Mitigation Example

- In an EIS for permitting a gold mine, Forest Service adequately considered mitigation where the EIS "predicts that the environmental effects from the mine on ground water will be minimal, but extensive monitoring will be required nonetheless" and the EIS "proposes

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[48] *Metro. Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 772 (1983).

[49] *Neighbors of Cuddy Mountain v. U.S. Forest Serv.*, 137 F.3d 1372, 1379–80 (9th Cir. 1998).

[50] *Wyoming*, 661 F.3d at 1253.

[51] *Friends of the Wild Swan*, 767 F.3d at 943.

[52] *Idaho Sporting Cong., Inc. v. Rittenhouse*, 305 F.3d 957, 973 (9th Cir. 2002).

[53] *Neighbors of Cuddy Mountain*, 137 F.3d at 1378.

[54] *Robertson*, 490 U.S. at 352; *see generally* Memorandum for Heads of Federal Departments and Agencies, "Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact" January 14, 2011.

several ways to prevent overflow . . . from affecting water quality." Further "[e]ach mitigating process was evaluated separately and given an effectiveness rating."[55]

IV. CONCLUSIONS ON UNIVERSAL BEST PRACTICES.

The EIS key components build on each other. The purpose and need statement provides the foundation from which the agency designs alternatives, including mitigation measures. The agency analyzes impacts of the alternatives against the baseline of the affected environment. The EIS writer faces many judgment calls in designing each component. One guiding principle is that the purpose of the document is to insure a fully informed and well-considered decision and not excessive paperwork.

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[55] *Id.* at 476–77.

Project Phase 2.3 – Briefing Paper, Strategic Planning
Lead Author: Nancy Patterson
Team Members: Brandon Sousa, Brad Grenham

I.   Introduction.

The Institutional Strengthening Subgroup identified *Strategic Planning* as a key subtopic, or "theme," for analysis and research. The team examined the policy documents collected in Phase 1 related to this theme. Strategic Planning is a management tool to help an organization improve its ability to reach its goals and meet the needs of its constituents. It is an important method to effectively manage organizations, adapt to changing conditions, lead people with shared goals, and achieve desired organizational goals. This briefing paper provides an overview of the findings, with demonstration examples where relevant, and conclusions regarding the "universal best practices" that can be extracted from United States strategic planning policies.

II.   Overview, Discussion, Demonstration Examples

A.   Definition of Strategic Planning

Strategic Planning can be defined as a process to create a desired direction and commitment to action toward that direction.[1] Strategic planning focuses the organization's vision and priorities in response to changing environments and identifies specific actions an organization can do today to reach a desired future. Strategic planning ensures team members have a shared understanding of priorities and are working together toward the same goals. In terms of Institutional Strengthening, strategic planning aids conservation leaders and staff to focus priorities, resources, and energy to achieve the desired outcomes.

Strategic planning is one component of effective organizational management of conservation areas. It is a subset of other types of planning documents, such as land management plans, park plans, and long-range planning initiatives. For protected area management, it is common to have a variety of long- and short-range planning initiatives. While a land management plan may last 20-30 years and describe long-term intended management goals, a strategic plan tends to be focused on shorter timelines and focus on specific desired outcomes to reach a longer-term vision, such as those described in a management plan.

Effective, actionable strategic plans are living documents. This means that they typically have a relatively short-range lifespan (5-7 years), which makes them rapidly achievable and adaptable to changing conditions. Their structure is easy to replicate, meaning the team can routinely

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[1] (McReynolds, 2016)

refresh the plans to evaluate progress toward the desired future state, introduce new strategies to achieve goals, train new stakeholders, and address changes in priorities.

> B.   Foundations of Strategic Planning: Mission, Guiding Principles, Vision, Strategies, Actions, and Indicators

An organization's mission and guiding principles, or values, keep employees and the organization focused on achieving the purposeful work they are charged to do and for the audience they are intended to support. The stronger the mission and guiding principles are, the more effective the organization is likely to be. The vision (also known as the vision story) is the desired future state of an organization. Reaching the vision requires strategies, actions, and a clear process, such as strategic planning.

Strategies are longer-term initiatives (1-2 years) that move the organization toward completing the Vision Story. They tend to be complex and need clear, tangible actions to achieve them. Action plans are specific short-term objectives (0-9 months) that advance a strategy. They use action words (commands), list clear steps, and explain who will do what by when.

Indicators and measures provide the specific outcome that the action will have achieved. The SMARTIE Goal format is an effective way to state the measurable outcome (SMARTIE: Specific, Measurable, Achievable, Results-Focused, Time-Bound, Inclusive, Equitable)[2]. Indicators and measures determine the output, outcome, and impact the organization has achieved on specific actions it has taken through its strategic planning efforts[3].

Strategic planning is about action. In the strategic planning process, an organization reviews its mission and guiding principles, identifies its desired vision for the future (consistent with its mission and guiding principles), and sets up specific strategies and actions to accomplish the vision. Indicators and measures track the achievements it has made in the actions and strategies that reach toward the vision. Clearly organizing the strategic plan's vision, strategies, actions, and indicators (e.g., using a numbering mechanism) makes it easier to identify and track goals and measures (see one method of doing this is indicated between the parentheses below). As an organization completes elements of its vision story, it can refresh its strategic plan to address new and emerging visions, strategies, actions, and objectives.

- **Mission:** The purpose of the organization. Effective mission statements include action words and describe who the mission serves.

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[2] Formerly, SMARTIE goals/indicators have been more commonly referred to as SMART goals/indicators (Specific, Measurable, Achievable, Realistic, Time-bound). Contemporarily, this has evolved into SMARTIE goals to include concepts on Inclusion and Equitability, which facilitates goal creation that includes and is equitable for a diversity of people. For more information, see Colorado State University Extension toolkit on SMART indicators (Colorado State University Extension, 2022; Colorado State University Extension, 2022) on SMART goals/indicators and The Minnesota Home and Community-Based Services (HCBS) Modules for Person-Centered Organizations (University of Minnesota, 2022) on SMARTIE goals.

[3] For more information on indicators and measures, see IndiKit's Rapid Guide to Designing SMART Indicators (IndiKit - People In Need, 2022).

- **Guiding Principles:** The values of the organization. They describe how an organization conducts itself and how it treats people and the environment in its care. When organizations follow their values, they stay true to their purpose.
- **Vision:** What the organization will be if it succeeds at implementing strategies and inspiring people to be part of that desired future. This is also called a Vision Story. It should not reiterate the mission; it should describe the future in clear detail that compels the imagination and inspires action. A vision story that is achievable in 5-7 years provides a realistic and tangible timeline for success. (Structure: 0.0 = Vision Level).
    - ↳ **Strategies:** The specific goals the organization will take to achieve the vision of the organization. These are achievable in 1-2 years and directly tie to specific components of the organization's vision story. (Structure: 0.1 = Strategy Level).
        - ↳ **Actions and Action Plans:** Specific short-term (0-9 months) objectives the organization will take to achieve a strategy. They include the precise action, measure of success, and a clear list of the tasks the organization will accomplish to meet that action. (Structure: 0.1.1 Action Level).
            - ↳ **Indicators, or Measures:** These identify how an organization will know whether they have achieved the desired action and outcome.

    C.   Key Elements of Strategic Planning

Strategic planning is a process designed to transparently describe a desired future state and the strategies and actions an organization will take to achieve those goals. Successful strategic planning needs engaged people who have the appropriate resources, healthy organization, vision for the future, and commitment to a clear process to achieve their goals[4]. These include the following elements:

- **Engaged Team of People:** Internal and external stakeholders to your organization who care about the success of the organization, and support (believe in) its mission and employees, and the services it provides.
- **Necessary Resources:** Organizational resources include 1) team and employee time and energy to work on the plan, 2) money and budget dedicated to accomplishing the work, 3) and an organization that is functionally healthy, stable, and structured. Management support is important to successfully taking on and implementing strategic planning.
- **Strong Organizational Foundation:** The organization's mission and guiding principles, or values, explain what the organization does, who it is for, and what it believes in. These create organizational foundation that guide the leaders and employees in their daily work.
- **Clear Vision of the Future:** Strategic Planning focuses on a desired future state for an organization. This vision can be articulated in a Vision Story; the vision story provides a short narrative about the desired future state of the organization.
- **Strategic Process to Reach the Vision:** Strategic Planning follows a clear process, which is understood by the work group who are working on the plan. One process is to take the vision story (desired future goal) and make strategies (specific goals) to achieve

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[4] Strategic planning processes and principles are further described in Unpack Your Strategic Plan (BLM Campbell Creek Science Center, 2022). Also see BLM Campbell Creek Science Center Strategic Plan (Bureau of Land Management Campbell Creek Science Center, 2018, 2019, 2020, 2021, 2022).

the vision story). The strategies are broken into tangible actions (specific tasks) to achieve the goals.

D.   Principles and Commitments for Success with Strategic Planning

Strategic Planning requires certain principles and commitments from the team and organization to succeed. These include:

- **Quality:** The team understands, is part of, and contributes to the process. Everyone has a specific role and responsibility. The process invites participation and decision-making. There is a clear review process. There are clear boundaries and goals.
- **Continuity:** Strategic plan process is part of the organizational culture. This means it is future-oriented and is a continuous, cyclical process of learning, improving, growing.
- **Priority:** The plan creates direction and focus for action. It tiers to the parent organization's priorities. Resources are aligned to the priorities. The plan focuses on key priorities (not lists of tasks) that make a difference.
- **Time and Resources:** Those implementing the plan have the necessary time and resources to achieve the work goals. The workloads are aligned with strategic work. The strategic plan is integrated into work plans and daily workloads should merge with priorities from the strategic plan (e.g., performance, annual work plans, budget).
- **Empowerment:** The plan follows a clear process and works for the organization. It encourages team efficacy – everyone is involved, has input, and/or is informed. Team builds on strengths and works on areas of growth. Team members lead action plans and help with other action plans. The plan is action-oriented and results-driven.

When these conditions exist, an organization can most effectively implement actions that help it achieve its desired future. It effectively focuses the organization's energy and resources to accomplish work that is both operational and strategic in nature, thus empowering itself to improve and reach its goals.

E.   Demonstration of Use of Mission, Guiding Principles, and Vision Stories in the Federal Government

Federal Agencies, such as the Department of the Interior and their sub-bureaus, have mission statements, values (also known as guiding principles) and priorities. These are typically listed on websites of the Department and of the sub-bureaus[5] and provides information to the public and to agency personnel about the purpose and goals of the agency.

The mission and guiding principles of each level of government align with the work those bureaus conduct and tier from the larger purpose of the US Federal Government's ruling legislation. In addition, the priorities of the sub-agencies parallel those of the Department and the

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[5] For example, see the About Interior Page (Department of the Interior, 2022), the BLM's Who We Are, What We Do Page (Bureau of Land Management, 2022), and the DOI ITAP Institutional Strengthening Briefing Paper on Organic Acts.

Administration. This alignment of mission, guiding principles, and priorities creates synergy and alignment in work objectives across each tier of federal government.

Following is an example of the mission-based structure from the Department of the Interior to the Bureau of Land Management (BLM) and the BLM Campbell Creek Science Center (CCSC). The Department of the Interior is the parent organization and has a broad mission, followed by the BLM's mission focused on public lands, followed by the BLM CCSC's specific mission to engage learners in outdoor experiences. Through each tier, the government can meet the objectives of the sub-bureaus and achieve work results and objectives through a mission-based organizational mindset.

- The U.S. Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated Island Communities.
  - The Bureau of Land Management's mission is to sustain the health, diversity, and productivity of public lands for the use and enjoyment of present and future generations.
    - The BLM Campbell Creek Science Center engages all learners in outdoor experiences that increase appreciation, connection, and stewardship of Alaska's natural and cultural resources and public lands.

F.   Strategic Planning in the U.S. Federal Government

The U.S. Federal Government utilizes various planning practices to prepare long-, mid-, and short-term work planning, including strategic planning. 5 U.S. Code § 306 describes that federal agencies shall develop four-year strategic plans once new presidents take office. The plans must be provided to the public and briefed to the President and Congress. They must include agency mission; general goals and objectives; a description of how the goals contribute to the Federal Government's priority goals and how the goals will be achieved, evaluated, and assessed; and situation analysis of the goals.

This intention is elaborated in specific codes for federal agencies such as the Department of the Interior and its bureaus. For example, 54 U.S. Code § 100503 describes that each National Park System unit "shall prepare and make available to the public a 5-year strategic plan and an annual performance plan. The plans shall reflect the Service policies, goals, and outcomes represented in the Service-wide strategic plan prepared pursuant to section 306 of title 5." In addition, Bureaus and Departments use their founding legislation[6] to shape long-term planning for their agencies. The strategic planning approach from Executive-level is further developed into "step-down" approaches to create actions and strategies that are specific to the agencies and their sub-units. These goals are often written into medium-length plans (3-5 years) and into more specific Annual Work Plans, which outline specific actions the unit will take to achieve the objectives.

The step-down approach enables each work unit to focus on high level priorities at a local level, using methods that fit the local environment, culture, and conditions. It is important for sub-

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[6] For example, see The Federal Land Policy and Management Act of 1976, as Amended, 1976.

government units (such as protected areas, parks, refuges, and other land management organizations) to identify and understand the expectations of the parent organization and to understand local conditions, needs, and interests to create practical, implementable strategies that achieve the organization's priorities and vision.

G.   Strategic Planning Demonstration Example from the BLM Campbell Creek Science Center

The BLM Campbell Creek Science Center was founded in 1996 with the mission to teach and engage Alaskans in life-long learning experiences with natural sciences, public lands, and outdoor recreation. It traditionally serves more than 40,000 visitors each year through in person and virtual experiences with the outdoors. In 2014, it was given an expanded mandate to provide environmental education, interpretation, and outreach across all of Alaska for BLM to meet objectives of the BLM-AK step-down Education, Interpretation, and Youth Engagement Strategy (EIYE). The EIYE outlines goals for engagement from the BLM national office.

BLM CCSC created a 5–7-year strategic plan in 2019, with specific goals to meet the EIYE priorities of BLM Alaska for it to become a statewide entity for environmental education, interpretation, and outreach. This vision matched DOI objectives to provide services, resources, and enjoyment for the American people, and fulfills local goals for routine science-based environmental education and learning experiences. To develop the strategic plan, the BLM CCSC reviewed its founding documents and sought input from stakeholders to understand how internal and external interested people viewed the role of the Center in the present and future. CCSC worked with a facilitator to compile the information and to organize several planning sessions to write the strategic plan and identify achievable strategies and actions that would help the organization meet the mission. The plan goes from broad vision stories to strategies that will take 1-2 years to implement to specific 0–9-month actions the organization will work on to achieve the goals. The plan provides both structure and flexibility to adapt to changing conditions, meaning the BLM CCSC can quickly adjust to seize opportunities, change course, or meet other needs of the organization and community.

As the BLM CCSC has continued to implement the plan, the organization has made a point to integrate the strategic plan across its organizational practices. This includes aligning its strategic planning process to match the BLM's planning cycle, incorporating strategic work goals into performance expectations, matching the budget and work expectations to the available resources, and ensuring all members are engaged and responsible for ensuring the plan succeeds. The BLM CCSC creates Annual Work Plans, which outline the specific strategies and actions it will accomplish during the year to meet the goals of the agency and the strategic plan objectives.

The results have been notable and have enabled the BLM CCSC to provide environmental education and interpretation onsite, through virtual learning and field-based experiences, update the facility, and improve its administrative practices. Team members report engagement around the plan and feelings of empowerment to effectively achieve the goals. This, in turn, ensures that BLM CCSC provides services and enjoyment that meet the needs of Alaskans, people across the country and world, and the BLM, DOI, and Administration. The process has become an important part of the CCSC team culture to turn dreams of the future into practical and achievable actions that achieve those vision stories. As a result, the BLM CCSC provides more

aligned services for the American people and helps the BLM engage with constituents, share public land values, and provide learning opportunities across the state and country.

Following are two examples from CCSC's strategic plan to illustrate how it has laid out its vision stories, strategies, and actions[7]. These two examples demonstrate two types of vision stories, one around the CCSC's internal team structure and the other around CCSC's interpretive and environmental education programming. The *italicized* text under the vision stories provides a detailed description that helps CCSC easily envision its desired future. Under each vision story is a list of strategies and associated actions. They are numbered with a linear structure (e.g., Vision level 1.0, Strategy level 1.1, Action level 1.1.1) to easily track the items.

- **Vision Story 1.0: CCSC culture embraces organizational best practices and a collaborative, friendly, mission-focused work environment.** *Our passionate, full time, diverse staff are dedicated to serving Alaska's broad range of audience needs, ages, and cultures. CCSC has a staff of enthusiastic, highly skilled professionals who share a strong team spirit and commitment to the mission, goals, and guiding principles of the CCSC. CCSC has a staffing structure that provides pathways to other government jobs/a ladder of increased responsibility and skill development.*
  - o **Strategy 1.1:** Establish and integrate CCSC's strategic plan with our work goals, performance reviews, and standard operating procedures.
    - ▪ **Action 1.1.1:** Integrate strategic plan into Annual Work Plans.
    - ▪ **Action 1.1.2:** Integrate strategic plan into annual performance reviews.
  - o **Strategy 1.2:** Create project teams focused on planning and coordinating each of our major program areas: Statewide Support, Education Programs, Public Programs, Special Projects, & Administration.
    - ▪ **Action 1.2.1:** Organize projects by Program Area for inclusion in annual employee performance review critical elements.
    - ▪ **Action 1.2.2:** Create annual work plans and executive summary for each program element.
- **Vision Story 5.0 - CCSC advances programs that are meaningful, inclusive, and created to integrate science, authentic experiences, art, and culture in diverse ways to reach all our audiences.** *We offer a full suite of programs for people of all ages in a schedule that makes true the idea that, "there's always something happening at the CCSC!"*
  - o **Strategy 5.1:** Identify and use best technology methods to increase outreach.
  - o **Strategy 5.2:** Develop and implement a variety of techniques to enhance the experience of visitors to the CCSC. (Examples include clear signage, interactive exhibits, welcome lobby, auditory experiences).
    - ▪ **Action 5.2.1 -** Design and install outdoor and indoor signs for public users.
    - ▪ **Action 5.2.2:-** Use modern technologies to enhance visitor experiences at CCSC.
    - ▪ **Action 5.2.3:** Research, design, and install rotating exhibits at CCSC.
  - o **Strategy 5.3 -** Expand program opportunities for the public.
    - ▪ **Action 5.3.1:** Explore potential for weekend public programs.
    - ▪ **Action 5.3.2:** Develop and schedule a suite of public program offerings.

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[7] (Bureau of Land Management Campbell Creek Science Center, 2018, 2019, 2020, 2021, 2022)

▪ **Action 5.3.3:** Update TOTs (toddler) Program for expanded audiences.
▪ **Action 5.3.4:** Seek broad community input on public programming topics, types, and times that work best for our intended audiences.

The structure provides a clear, logical overview of the CCSC's strategic plan and how the Center approaches achieving its desired vision. It follows the structure of Specific, Measurable, Actionable, Relevant, and Time-bound, Inclusive, and Equitable (SMARTIE): The plan follows a set annual cycle with clear start and end dates focused on the fiscal year. Employees are involved in the process and clearly know what strategic workload is expected for the fiscal year, who is responsible for leading or working on those actions, and how the workload helps accomplish the CCSC's goals. Actions have clear indicators to provide structure and accountability. The plan encourages inclusion of all staff members and all learners, as well as an equitable perspective from staff and participants to ensure CCSC meets its mission.

III.   Conclusions on Universal Best Practices.

Strategic planning helps organizations meet their mission, stay true to their guiding principles, and implement actions to meet the desired future.

- Review mission, guiding principles, and vision story. These create the foundation for successful strategic planning. Tier vision to the parent organization objectives to demonstrate alignment with implementing higher-level priorities.
- Create a strategy culture, where the organization thinks about and works to improve the future. This includes creating the vision, strategies, and actions that are routinely worked on, integrated into the Annual Work Plan, and use time and resources effectively.
- Develop short-term plans (5-7 years) that are flexible and achievable. Engage all members of the team in making the plan successful. This includes involving team members in setting priorities, envisioning the future, and working on the objectives.
- Plan to meet the needs of the parent organization and local community. To do this, 1) understand and engage with the local natural and cultural communities, 2) review and comprehend the organization's managing principles, governing doctrine, related laws, and administrative priorities, 3) engage diverse stakeholders in how the work unit can help achieve those priorities, and 4) create achievable plans that meet the aligned goals and objectives of the community and the parent organization.

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DEPARTMENT OF THE INTERIOR - INTERNATIONAL TECHNICAL ASSISTANCE PROGRAM
GEORGIA PROTECTED AREAS POLICY REVIEW
INSTITUTIONAL STRENGTHENING SUBGROUP
JULY, 2022

Briefing Paper
Organizational Development
Open Government: Transparency, Public Participation, and Ethics
Lead Author: Brad Grenham
Team Members: Nancy Patterson, Brandon Sousa

I. INTRODUCTION

An open executive branch of the government strives to be transparent, participatory, and collaborative. Transparency means sharing data and information with the public. Participatory means hearing and implementing ideas from many kinds of people and organizations. Collaboration means engaging in ongoing conversation with employees and the public and working together to solve problems. Doing these things not only increases agency accountability but also builds trust with people and stronger support for agency programs. Information sharing allows citizens to participate in an informed manner in public processes and hold their government agencies accountable. For this reason, transparency is a fundamental element of stopping corruption. Corruption can be further constrained by combining transparency with clear ethics rules that prohibit officials from seeking private gain through use of their official positions. Corruption is further curtailed by creating truly independent officials to monitor for waste, fraud, and abuse, such as an Inspector General. This paper summarizes some of the key features of the executive branch in the United States government that are intended to promote transparency, public participation, accountability, and lack of corruption.

II. TRANSPARENCY AND PUBLIC PARTICIPATION

A. *Freedom of Information*

Transparency means making government information more accessible. This includes: 1. providing online information in formats that make the information easy to search and use; 2. publishing data of high value to the public; and 3. providing online information about how agencies conduct business.[1] For example, federal agencies in the U.S. must provide the public with: descriptions of central and field offices and where the public can obtain information and decisions; agency rules; and descriptions of forms and where to obtain them.[2] Agencies must also make available: final agency opinions and orders; policy statements; staff manuals; and records frequently requested by the public.[3]

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[1] https://www.opm.gov/faqs/topic/open/index.aspx
[2] 5 U.S.C. §552(a).
[3] 5 U.S.C. §552(a)(2).

Freedom of information laws can enhance transparency by providing tools for the public to request information. In the United States, the federal Freedom of Information Act (FOIA)[4] and state counterparts allow the public to request data held by government agencies such as documents and electronic files. There are exceptions to disclosure to protect individuals' privacy, national security, and other privileged information.[5] Nine categories of records may be exempted from disclosure.[6] Fees for agency time in searching for and copying materials may be imposed, while certain types of requesters, such as media, may obtain fee waivers or reductions.[7][8] Agencies must produce records under certain timeframes[9] and a requestor can bring an action in court to enforce FOIA procedures where the requestor believes the agency has not provided all documents required by law.[10] While this transparency promotes the public interest, responding to voluminous public information requests can divert agency personnel from other missions.

The Privacy Act provides that, where an agency maintains a system of records with information retrievable by an individual's name or personally identifying information, that individual may request and must be granted access to review the record and have a copy made.[11] Examples of this information include financial transactions, medical history, or employment history. The law does not apply to certain law enforcement, intelligence, and investigatory information.[12] When a person asserts that a federal record contains inaccurate information about the individual, the act allows the person to require the agency to correct the record.[13] Disputes over the accessibility or accuracy of personally identifiable files may be pursued in federal court.[14]

B. Public Participation in Agency Proceedings

Transparency also requires that government agencies provide public notice of agency proceedings and provide the public with opportunities to observe or participate.

For an agency to reach a final decision in a fair and transparent manner, the agency should approach an issue with an open mind, consider public comment and interests, and provide a well-reasoned decision. Pursuant to the Administrative Procedure Act (APA), federal agencies issue

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[4] 5 U.S.C. §552

[5] 5 U.S.C. §552(b).

[6] 5 U.S.C. §552(b).

[7] 5 U.S.C. §552(a)(4).

[8] See generally, https://crsreports.congress.gov/product/pdf/RS/97-71

[9] 5 U.S.C. §552(a)(6).

[10] 5 U.S.C. §552(a)(4).

[11] 5 U.S.C. § 552a(d).

[12] 5 U.S.C. § 552a(j)-(k).

[13] 5 U.S.C. § 552a(d).

[14] https://crsreports.congress.gov/product/pdf/RS/97-71

rules[15] (also known as regulations) after a public comment process.[16] Under the APA, agencies publish notice of an upcoming rulemaking, including the substance of the draft rule and the legal authority under which it is proposed.[17] After this notice, the agency must provide the public with an opportunity to participate through submission of written data, views, or arguments.[18] The agency must publish final rules in a Federal Register that is available to the public.[19] The underlying evidence for the decision should be available to the public.[20] Affected parties can challenge a final agency rule in court; the court can set aside the rule if it does not comply with the law, is arbitrary, violates required procedures, or exceeds the agency's statutory authority.[21] Interested parties can petition for the issuance, amendment, or repeal of a rule.[22] Public participation can promote a sense of fairness in rulemaking since interested citizens have an opportunity for the agency to consider their interests.[23] Transparency allows the public and the other branches of government to review the record and determine whether agency decisions appear to be based on fair and rational grounds.

Agencies in the United States, and many other nations, inform their environmental decisionmaking and engage the public through preparation of an environmental impact statement (EIS). The National Environmental Policy Act (NEPA) governs procedures in the United States.[24] The purpose of the EIS is "to insure a fully informed and well-considered decision"[25] and "help public officials make decisions that are based on understanding of environmental consequences."[26] NEPA procedures "insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken."[27] Publication of an EIS "serves a larger informational role," as it "provides a springboard for public comment."[28] The "touchstone" is whether an EIS analysis "fosters informed decision-making and informed public participation."[29] In a separate paper, we describe the components of an EIS and provide

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[15] Under the APA, a "rule" is defined as "the whole or a part of an agency statement of general or particular applicability and future effect designed to implement, interpret, or prescribe law or policy or describing the organization, procedure, or practice requirements of an agency …" 5 U.S.C. § 551(4).

[16] 5 U.S.C. § 553(c)

[17] 5 U.S.C. § 553(b)

[18] 5 U.S.C. § 553(c)

[19] 5 U.S.C. § 552(a)(1).

[20] See generally, Cary Coglianese et al, Transparency and Public Participation in the Rulemaking Process: Recommendations for the New Administration, June 2009, https://scholarship.law.upenn.edu/cgi/viewcontent.cgi?article=1237&context=faculty_scholarship

[21] 5 U.S.C. § 706(2).

[22] 5 U.S.C. § 553(e)

[23] See https://scholarship.law.upenn.edu/cgi/viewcontent.cgi?article=1237&context=faculty_scholarship

[24] 42 U.S.C. §§ 4321-4347.

[25] *Vermont Yankee Nuclear Power Corp. v. Nat. Res. Def. Council, Inc.*, 435 U.S. 519, 558 (1978).

[26] 40 C.F.R. § 1500.1(c).

[27] 40 C.F.R. § 1500.1(b).

[28] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989).

[29] *Calif. v. Block*, 690 F.2d 753, 767 (9th Cir.1982); *Westlands Water Dist. v. U.S. Dep't of Interior*, 376 F.3d 853, 868 (9th Cir. 2004).

guidance on each component. While public participation and judicial review provide important checks on agency action, this can lead to longer project timeframes. There is criticism in the US that the EIS process causes too much delay, even for environmentally beneficial projects, such as renewable energy construction.[30]

The Government in Sunshine Act[31] opens the policymaking deliberations of any agency headed by a "collegial body" (composed of two or more members) to public observation.[32] The act requires agencies to publish advance notice of meetings and make the meetings publicly accessible.[33] The act includes 10 conditions under which agency meetings are exempted from open meeting requirements.[34] Disputes over implementation of the act may be pursued in federal court.[35]

The Federal Advisory Committee Act (FACA) provides a uniform process for federal agencies to establish committees of outside citizens with relevant interests or expertise to advise agencies.[36] The committees can be "a useful and beneficial means of furnishing expert advice, ideas, and diverse opinions to the Federal Government."[37] With some exceptions for security and financial agencies, FACA requires that the meetings of federal advisory committees be open to public observation and that committee records be accessible to the public.[38]

III. ETHICS

The Ethics in Government Act of 1978[39] created the Office of Government Ethics to provide "overall direction of executive branch policies related to preventing conflicts of interests on the part of officers and employees of any executive [branch] agency."[40] Ethics laws arise from the principle that "public service is a public trust, requiring employees to place loyalty to the Constitution, the laws and ethical principles above private gain."[41] Executive branch employees cannot use a position with the Government for their own personal gain or for the benefit of others such as family, friends, or organizations that they are affiliated with. For example,

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[30] See e.g. Congressional Research Service, *The National Environmental Policy Act (NEPA): Background and Implementation*, https://www.everycrsreport.com/reports/RL33152.html

[31] 5 U.S.C. § 552b

[32] See generally, https://crsreports.congress.gov/product/pdf/RS/97-71

[33] 5 U.S.C. § 552b(e).

[34] 5 U.S.C. § 552b(c).

[35] 5 U.S.C. § 552b(h).

[36] 5 U.S.C. Appendix.

[37] 5 U.S.C. Appendix, § 2.

[38] 5 U.S.C. Appendix, § 10.

[39] 5 U.S.C. Appendix §§401-408.

[40] 5 U.S.C. Appendix §402(a).

[41] See https://www.oge.gov/web/oge.nsf/0/B97C62717328457B852585B6005A180D/$FILE/14%20General%20Priniciples.pdf

employees may not use their government position to coerce anyone to provide a benefit to the employee. Employees may not hold financial interests that conflict with the conscientious performance of their duties. The employee may not suggest that the agency endorses organizations, products, services, or people. Employees may not use nonpublic government information to further the employee's own private interests. In addition to these standards of ethical conduct, a criminal statute[42] prohibits employees from working on Government matters that will affect their own personal financial interest, or that of a spouse, minor child, general partner, future employer, or any organization in which the person is serving as an officer.[43]

IV. INSPECTORS GENERAL

The Inspector General Act of 1978 established an independent Office of the Inspector General in most executive agencies. The Inspector General may conduct audits and investigations relating to agency programs in order to promote efficiency and to detect fraud and abuse.[44] Each Inspector General prepares semiannual reports summarizing any significant problems, abuses, and deficiencies relating to the administration of agency programs as well as a description of the recommendations for corrective action.[45] The Inspector General must maintain a website and update that site with final investigations and audits.[46] The Inspector General has legal access to all records of the agency as well as employee testimony.[47] Agency employees may report, to the Inspector General, the possible existence of an activity constituting a violation of law; mismanagement; gross waste of funds; abuse of authority; or a substantial danger to the public health and safety.[48] An employee reporting a violation is protected from reprisal.[49] An Inspector General can only be removed by the President, which is intended to preserve the Inspector General's independence in most circumstances.[50]

V. CASE STUDY ILLUSTRATION

The concepts above can be illustrated by a hypothetical case study concerning construction in a protected area. Assume a protected area manager has decided that it is necessary to build a guest lodge in a park. There is high visitor use and the manager states that guests would enjoy the opportunity to spend evenings in the park at the lodge. On the other hand, the lodge would be built in an area with old, mature trees that are ecologically important to wildlife and scenery.

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[42] 18 U.S.C. § 208

[43] See generally https://www.oge.gov/web/oge.nsf/0/86D5B4F72AF0FBCB852585B6005A1A22/$FILE/Standards%20of%20Ethical%20Conduct%20508.pdf

[44] 5a U.S.C § 2.

[45] 5a U.S.C § 5.

[46] 5a U.S.C § 8M; see, for example, https://www.doioig.gov/.

[47] 5a U.S.C § 6.

[48] 5a U.S.C § 7.

[49] 5a U.S.C § 7.

[50] 5a U.S.C § 3.

Due to the conflicting interests between lodging and ecological values, it would be important for the manager to propose the lodge idea in a transparent, participatory, and collaborative manner. To be transparent, the manager could announce the proposal, with available details, on the park website and post paper descriptions around the park and local community. To foster participation, the manager could hold public meetings to explain the proposal and "scope" out public sentiment and concerns. For example, the public might suggest alternative locations for the lodge or suggest a less impactful way to build it. In any case, this open meeting would better inform options for the project. If the manager does not provide sufficient information, or the public remains strongly opposed, it is likely a member of the public or news organization would file a freedom of information request asking for all relevant documents that the park possesses. Park staff would need to gather and convey those documents.

Since the lodge building is a proposal that may significantly affect the environment, the manager would need to first conduct analysis of the impacts under the National Environmental Policy Act (NEPA). The park would need to consider alternatives to the lodge (such as alternative ways of accommodating visitors or alternative locations for a lodge) as well as consider a "no action" alternative. The park would circulate an environmental assessment or impact statement (EIS) to the public with several alternatives and a discussion of the impacts of those alternatives. The manager would provide the public around 30 or 45 days to comment on the EIS; those comments would suggest how to improve the alternatives or effects analysis. The manager might hold another public meeting to hear public views now that the public has access to an EIS with more detail on the proposed lodge.

Ultimately, if the manager issues a final decision to build the lodge, an affected party could file a lawsuit in federal court challenging the action under the Administrative Procedure Act and NEPA. These laws allow parties to seek court review of a final agency decisions where the party alleges that the agency process did not follow all the steps required by law. A typical NEPA lawsuit would argue that the agency did not consider enough appropriate alternatives or that the effects analysis missed important environmental effects. If a court found the agency decision to be "arbitrary" or otherwise unlawful, the court could strike down the decision and make the agency redo its NEPA analysis. One can see how these means of providing a transparent, participatory, and collaborative process can fully engage the public in decision making and bring enhanced ideas and information to an agency. One can also see how these steps would add time to the process and allow some parties, who might not represent the public interest overall, to stall a project.

What if the park manager's spouse ran a construction firm that built lodges such as the one proposed for the park and the spouse could benefit financially from building the lodge? Under the ethics laws, the manager might have a financial conflict of interest requiring the manager to assign somebody else to supervise the project. This would avoid having the manager's family financial interests affect the decision-making process. Even if the manager's spouse were not involved, a park employee who believes that a contract, such as one for lodge building, involves some type of fraud could report the issue to the agency's Inspector General. The Inspector

General would then request documents and conduct interviews to make sure that all contracting complied with law.

VI. CONCLUSION

A variety of US laws provide for executive branch agencies to provide some transparency and public involvement in their decision making. For projects affecting the environment, the National Environmental Policy plays a key role. Laws also provide the public with the right to access most agency documents. This transparency can help fight corruption. Ethics rules prevent agency officials from using public office for private gain. An independent inspector general can help fight fraud and waste.

DEPARTMENT OF THE INTERIOR – INTERNATIONAL TECHNICAL ASSISTANCE PROGRAM
GEORGIA PROTECTED AREAS POLICY REVIEW
INSTITUTIONAL STRENGTHENING
July 2022

Project Phase 2.3 – Briefing Paper, Memoranda of Understanding or Agreement
Lead Author: Brandon Sousa
Team Members: Nancy Patterson, Brad Grenham

I.   Introduction

The Institutional Strengthening Subgroup identified *Partnership* as a key subtheme for analysis and research. The team examined the policy documents collected in Phase 1 related to this subtheme and further identified *Memoranda of Understanding or Agreement* as a subtopic. These memoranda are crucial instruments for effectively supporting and furthering partnerships, which in turn support   the strength of the home institution. This briefing paper provides an overview of the findings, with demonstration examples where relevant, and conclusions regarding the "universal best practices" extracted from United States   memoranda of understanding or agreement guidelines.

II.   Overview, Discussion, Demonstration Examples

A key source of universal best practices in the use of memoranda of understanding or agreement is the National Park Service ("NPS").[1] National Parks are integral parts of the larger United States protected areas framework, and establishing strong partnerships with neighboring protected areas, nonprofits, developed areas, and other entities allows NPS to work cooperatively to: anticipate, avoid, and resolve potential conflicts; protect park resources and values; provide for visitor enjoyment and; address mutual interests in the quality of life of community residents including matters such as compatible economic development and resource and environmental protection.[2] Cooperative conservation activities are a vital element in establishing relationships that will benefit the parks and in fostering sustainable decision-making. NPS cooperates with federal, state, local and tribal governments, as well as individuals, and organizations, to advance the goal of creating seamless networks of parks.[3]

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[1] Note that NPS has begun referring to these documents as "General Agreements," but for the sake of this broader paper on the United States' use of such documents, we will refer to them as memoranda of understanding or agreement.

[2] U.S. Department of the Interior-National Park Service, Management Policies: The Guide to Managing the National Park System § 1.6 (2006).

[3] *Id*.

NPS recognizes the significant role partners play in achieving conservation goals and funding conservation initiatives on behalf of the national park system. NPS has had many successful partnerships with individuals; organizations; tribal, state, and local governments; and other federal agencies that have helped fulfill the NPS mission.[4] Partnerships have provided valuable assistance in the form of educational programs, fund-raising campaigns, scientific and scholarly research, ecosystem management, among a host of other activities.[5] These partnerships, both formal and informal, have produced countless benefits for NPS and the national park system.[6]

Memoranda of Understanding or Agreement ("MOUs") are an effective tool to define the nature of a partnership, its elements, goals, and measures for success. Importantly, the documents establish a partnership framework without the complexity and liability (in most cases) of a legally-binding contract. They are, therefore, easier to agree to and enter into, and reflect a truly voluntary partnership, rather than a binding business relationship. An MOU defines the responsibilities of each party in the agreement, provides the scope and authority of the agreement, clarifies terms, and outlines compliance issues.[7] MOUs provide a line of communication between community, local, tribal, state, and federal policy makers.[8]

While there is no single source or governing guideline for the creation of MOUs, a review of U.S. practices and guidance produced certain standard recommendations for structuring an MOU. Generally speaking, an MOU should have nine sections: introduction, purpose, scope, definitions, policy and responsibilities, user procedure requirements or obligations, maintenance, oversight, and updates.[9]

A. MOU Standard Structure

While parties entering into an MOU have broad discretion in how to structure their agreement, the following offers a standard and encouraged format, accompanied in some instances by examples.

1. Introduction

The "Introduction" section helps the reader understand the content of the agreement. This section should be a simple explanation describing the necessity of cooperation, providing a history and

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[4] U.S. Department of the Interior-National Park Service, Management Policies: The Guide to Managing the National Park System § 1.10 (2006).

[5] *Id.*

[6] *Id.*

[7] *See* Department of Justice, Guidelines for Writing Memoranda of Understanding, or Google Drive > Georgia Policy team Folder > 3. Institutional Strengthening > 3.3 Partnership Development > 3.3.3 Memorandum of Understanding or Agreement > DOJ Guidelines for Writing Memoranda of Undertanding.pdf.

[8] *See* Writing Guide for a Memorandum of Understanding (MOU), or Google Drive > Georgia Policy team Folder > 3. Institutional Strengthening > 3.3 Partnership Development > 3.3.3 Memorandum of Understanding or Agreement > MOH_DHS Writing Guide.pdf.

[9] *Id.*

background leading to the creation of the MOU, the organizations involved, and other preliminary matters. While MOUs are not usually legally binding, if the drafters intend a binding commitment this section should specify that.

  2. Purpose

The "Purpose" section should include a concise statement discussing the intention of the MOU and what makes the MOU necessary. It should explain how the collaborative relationship enhances or benefits the parties. This section may also include a subsection dedicated to goals. Example language for this subsection is as follows:

> "While the actions outlined in this MOU will take place over a number of years and some improvements will be gradual, the parties are committed to meeting milestones, making steady progress on common goals, and reporting publicly on that progress to all interested stakeholders."[10]

  3. Scope

The "Scope" section should describe each partner organization and jurisdictions to be included in the agreement and describe their relationship. The parties should clearly describe the roles and responsibilities for each organization and align those roles with goals, objectives, and any target outputs for the partnership. This section can also discuss end users, level of command, level of government, information sharing, and financial parameters. Additionally, this section should address the geographic dimensions covered under the MOU, including any cross-border collaboration.

The organization of this section varies. Some MOUs are created with a single section outlining individual and joint responsibility, other MOUs separate individual and joint responsibilities into their own respective subsections.[11]

  4. Definitions

The "Definitions" section describes the operational and technical terminology associated with the resource and goals for which the MOU is created. The intent of this section is to help avoid

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[10] *See* Memorandum of Understanding Between National Park Service and County of Marin, or Google Drive > Georgia Policy team Folder > 3. Institutional Strengthening > 3.3 Partnership Development > 3.3.3 Memorandum of Understanding or Agreement > NPS Memorandum of Understanding with Marin County.pdf.

[11] *See* Memorandum of Understanding Between National Park Service and County of Marin, or Google Drive > Georgia Policy team Folder > 3. Institutional Strengthening > 3.3 Partnership Development > 3.3.3 Memorandum of Understanding or Agreement > NPS Memorandum of Understanding with Marin County.pdf.

confusion and uncertainty in communication among the parties. If there are any community or region-specific terms or acronyms, consider including these in this section as well.

5. *Policy and Responsibilities*

The "Policy" section should describe what capabilities are created under the MOU, and how and when those capabilities will be used. When crafting this section, the organization or agency should consider when the capability or resource is to be used, when it should be considered for use, who has the ability to authorize its use, whether there are operating procedures associated with it and if any specific procedures can or need to be referenced.

This section can also mention when the MOU or specific responsibilities become active or other aspects of timing, for example, actions to take upon execution of the MOU, after set period, or at the end of the agreement.

This section should also assign specific responsibilities to each party, creating clear roles and lines of action and authority.

The organization of this section varies. There can be a single section outlining individual and joint responsibility, while other MOUs separate individual and joint responsibilities into their own respective subsections.[12]

6. *User Procedure Requirements, or Obligations*

Not always included in an MOU, the "User Procedure Requirements" or "Obligations" section outlines the obligations of the agreement and resources devoted by the parties. Obligations may include training, exercises, and equipment requirements associated with participating in the MOU, noting any additional requirements and financial obligations that must be taken into consideration. This section should also describe the resources each partner would contribute to projects, including staff time, making in-kind contributions, delivering services, or offering training or expertise.[13]

7. *Maintenance*

The "Maintenance" section, if necessary, designates a responsible party or parties for maintaining equipment, systems, and licenses. This section can name an organization or individual, and should list the bodies responsible for the day-to-day control of equipment and systems operated under the

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[12] See Memorandum of Understanding Between National Park Service and County of Marin, or Google Drive > Georgia Policy team Folder > 3. Institutional Strengthening > 3.3 Partnership Development > 3.3.3 Memorandum of Understanding or Agreement > NPS Memorandum of Understanding with Marin County.pdf.

[13] See Department of Homeland Security, Writing Guide for a Memorandum of Understanding (MOU) 6, or Google Drive > Georgia Policy Team Folder > 3. Institutional Strengthening > 3.3 Partnership Development > 3.3.3. Memorandum of Understanding or Agreement > MOU_DHS Writing Guide.

MOU, including specific responsibilities, specify how and by whom information should be stored, as well as the period of storage, and address liability concerns.

8. *Oversight*

The "Oversight" section describes any structures of governance related to the MOU, participation requirements, how to make recommendations that affect policy or implementation of the MOU, and how other parties will address these recommendations, including any conflict resolution processes the parties wish to include. This section may also include procedures for how the parties will address any public complaints against activities performed under the MOU.

A description of internal policies on how the parties implement MOUs generally may also be provided.

Finally, the oversight section should describe how the MOU may be terminated, and any responsibilities in unwinding the partnership.

9. *Updates on MOU*

The "Updates" section describes how updates can be made to the MOU, including information such as who has the authority to update the MOU, how updates will be made, how participating agencies will be notified of the updates, and the types of updates that will require re-authorization and/or signatures of all participating agencies.

Periodic review and amendment of MOUs is strongly encouraged. This should include study of the effectiveness, efficiency, impact, and sustainability of the applied measures and collaboration activities.[14] In order to build mutual accountability for results, a partnership approach to evaluation development should be considered early in the process, and for MOUs with broad impact, evaluation may involve both the parties and different external stakeholders such as government departments and agencies, civil society, and private sector organizations.[15]

10. *Additional Clauses*

Additional clauses that are encouraged in these sections include specification of the timeframe the MOU will be in effect, technical information or templates as annexes (e.g., institutional set-up schemes, comparison or power/authorities of the signatories, etc.), relevant legislation, related legislation, and other applicable law or policies.

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[14] *See* Practitioner's Toolkit: Drafting, Implementing, Reviewing and Improving Bilateral Agreements and Memoranda of Understanding to Tackle Undeclared Work, or Google Drive > Georgia Policy team Folder > 3. Institutional Strengthening > 3.3 Partnership Development > 3.3.3 Memorandum of Understanding or Agreement > MOU_Euro Toolkit.pdf.
[15] *Id.*

A clause regarding confidentiality is also strongly encouraged in the MOU. This clause must clarify any issues related to confidentiality, information use, and disclosure. A good practice would also be to grant information access to third parties in the agreement, and to make efforts to increase the awareness and understanding of the MOU.[16] The intent of this is to decrease any potential misinterpretation by the media or the public.

B. Implementation of MOUs

MOUs must be signed by all partners. Signatories must be officially authorized to sign on behalf of the organization and include their title and organization name.[17] The parties should ensure sufficient budget and human capital to implement the MOU. And upon implementation of the MOU, the parties should expect to continue building their capacity and sharing information as they work together on the responsibilities outlined in the document. That means communicating often, possibly drafting new amendments to the MOU, and definitely drafting less formal agreements as the details of the parties' cooperation become clearer with practice, such as action plans, schedules and timelines, goals, and tools to measure success. These documents exist under the overarching framework of the MOU and will provide detail and adaptability to the ongoing cooperative work of the parties.

III.   Conclusions on Universal Best Practices

After review of the cited and other relevant policy documents, the Institutional Strengthening team distilled the following as *universal best practices* for Memoranda of Understanding or Agreement:
- MOUs provide a crucial tool in the formation and execution of successful partnerships. Consistent and open communication with parties interested in entering into a MOU is critical. The parties should maintain open lines of communication among both signatory parties and any stakeholders directly interested in the activities to be performed under the MOU.
- MOUs vary in structure; however, nine sections have stood out as standard components of MOU organization: introduction, purpose, scope, definitions, policy and responsibilities, user procedure requirements or obligations, maintenance, oversight, updates, and additional clauses. Agencies are not bound to these titles and are encouraged to modify the titles and sections used to best accommodate the purpose and goals of their partnerships.

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[16] *See* Practitioner's Toolkit: Drafting, Implementing, Reviewing and Improving Bilateral Agreements and Memoranda of Understanding to Tackle Undeclared Work, or Google Drive > Georgia Policy team Folder > 3. Institutional Strengthening > 3.3 Partnership Development > 3.3.3 Memorandum of Understanding or Agreement > MOU_Euro Toolkit.pdf.

[17] *See* Department of Justice, Guidelines for Writing Memoranda of Understanding, or Google Drive > Georgia Policy team Folder > 3. Institutional Strengthening > 3.3 Partnership Development > 3.3.3 Memorandum of Understanding or Agreement > DOJ Guidelines for Writing Memoranda of Undertanding.pdf.

- In addition to the nine recommended sections, agencies are encouraged to discuss the adoption of additional clauses, whether under one of the enumerated sections or as additional sections.
- MOUs extend beyond the commitment on paper. Implementation of MOUs require the parties to decide on levels of cooperation as applied to several different areas affected by or affecting the MOU. Periodic review of MOUs and associated activities and actions is strongly encouraged, as well as consideration of possible updates.

Project Phase 2.3 – Briefing Paper, Partnership Development
Lead Author: Nancy Patterson
Team Members: Brandon Sousa, Brad Grenham

I.   Introduction.

The Institutional Strengthening Subgroup identified *Partnership Development* as a key subtopic, or "theme," for analysis and research. The team examined the policy and best practices documents collected in Phase 1 related to this theme. Partnership Development is an organizational management tool that enables organizations to meet their mission and work objectives more effectively through collaborative action. Partnerships increase the ability to build support, create shared values, and work on shared goals for protected areas. This briefing paper provides an overview of the findings, with demonstration examples where relevant, and conclusions regarding the "universal best practices" that can be extracted from partnership practices of federal conservation organizations in the United States.

II.   Overview, Discussion, Demonstration Examples.

A. Definition of Partnerships

Partnerships can be described as collaboration and participation between two or more entities who work to achieve shared objectives that enhance the community in such a way that results in a greater outcome than any one entity could achieve.[1] The primary outcome of a partnership is that it meets community-focused and transformative needs.

The Partnership Academy and the Office of Personnel Management define partnerships as

> "…a voluntary and mutually beneficial collaborative relationship between the Department of Interior and one or more partners, built on the contributions of each partner and formed to achieve or assist in moving toward a common goal. Partners bring resources to the relationship that allow the Department, bureau, or office to accomplish objectives that, individually, neither party could achieve. A partnership may involve one partner utilizing another's unique abilities, or it may be sharing a resource (money, time, knowledge, equipment, etc.) to accomplish short- or long-term objectives agreed upon by all

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[1] (McReynolds, 2019) (Merriam-Webster, 2022)

participating partners. Some partner relationships are informal; others are covered by well-defined agreements or regulations."[2]

1. *Formal and Informal Partnerships*

Partnerships take different forms. Formal partnerships generally include written or legal agreement among organizations to reach shared objectives. Informal partnerships may have no established or written contract among the collaborators. Both types exist with entities partnering with the U.S. federal government land agencies.

Formal partnerships establish opportunities to pool resources, including financial, personnel, and equipment or facilities. Within the U.S. federal government, these types of relationships are often codified in Memorandums of Understanding, Memorandums of Agreement, Cooperative Agreements, grants, or other legal agreements.[3] Formal partnerships exist at all levels of the organization, such as a high-level partnership agreement at a Headquarters level (e.g., Greater sage-grouse conservation efforts), mid-level (e.g., youth corps cooperative agreement for conservation region), or a local-based partnership agreement (e.g., "Friends of" organization specific to a site). Formalizing partnerships creates more structure for federal agencies, which can then increase their ability to work collaboratively within the arrangement and achieve objectives.

Informal partnerships are done with less structure than formal partnerships. They include two or more entities that come together with shared outcomes to achieve for the community, but without a formal structure. Often organizations will use the term partner, or partnerships, to indicate shared interests and efforts to collaborate informally. They may be created to encourage relationship building, achieve shared objectives, provide outreach, or other objectives that benefit a community.

An example of an informal partnership is National Public Lands Day (NPLD), an annual volunteer opportunity for the public to volunteer on projects supporting public lands such as trail repair, garbage clean-up, and weed removal. NPLD events are organized by local offices of public lands organizations and take place in community-based public lands across the United States. They generally involve informal partnership efforts for the event. The 2015 NPLD event in Cody, WY brought together more than 50 volunteers, 3 land management agencies, 3 nonprofits, and one private company to remove barbed wire fencing and install pronghorn-friendly fencing on nearly one mile of grazing land. The project scope was larger than any one entity could accomplish, benefited the natural and human communities, and united people with disparate interests to collaborate on the successful project. While there were no formal partnerships established, the project encouraged positive relationships, working for a greater cause, and stewardship of public lands. Another example of an informal partnership at the BLM Campbell Creek Science Center is Outdoor Week, an annual multi-agency education event that provides a free field trip to more than 1,000 youth to experience outdoor recreation pursuits and

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[2] (The Partnership Academy, 2020)

[3] For more information on drafting these agreements, please see Institutional Strengthening briefing paper on Memorandums of Agreement and Understanding.

learn about outdoor careers during a three-day period. More than thirty partnering agencies attend to provide instruction and engage with participants.

Regardless of formality, successful partnerships occur when there is a shared commitment among the partnering agencies and organizations to achieve goals that, without each other, would not be possible.

2. *Partnerships in Relation to Different Types of Organizational Relationships*

Organizations create many forms of relationships to achieve work objectives. Three forms of organizational relationships include business relationships, collaborations, and partnerships.[4]

- **Business relationships** exist when each organization seeks and receives services or products from another. It is a one-to-one relationship, where something is exchanged for another, meaning both entities offer and receive value, but the relationship is focused on organizational functionality. An example from the BLM Campbell Creek Science Center (CCSC) is the delivery of professional guiding training to Holland America-Princess (HAP), where HAP solicits and pays for a training presented by CCSC's interpretive guides. Both entities receive a benefit from the relationship. Another example is a contract, where the federal government seeks service from outside entities, who provide the expertise, labor, or support (e.g., facility management, organizational facilitation, recreation.gov contracts).
- **Collaborative relationships** exist when two or more organizations work together to provide services in a way that effectively achieves goals. Collaborative relationships are focused beyond a singular organization and its needs. Collaborative relationships mean that the entities collaborate and provide greater support for their intended audiences by working together. Their collaborative work benefits communities. An example is Youth Conservation Corps, where federal land agencies work with youth organizations to provide job opportunities to youth in the form of projects, such as trail work or landscape restoration efforts, or professional internships, and where youth receive job training and provide labor to the agency. Another example is the Department of the Interior's Office of the Solicitor, which works with law students in the legal field to provide job training; the new practitioners learn from experienced solicitors and provide work to the agency.
- **Partnership relationships** exist when two or more entities work together to create something new, complex, and impactful. The resulting efforts are community-focused and seek to benefit a larger outcome than a single organization. In these relationships, the combined work of more than one entity creates something that otherwise could not be achieved. An example is the Cody, WY Area Recreation Management Plan, which works with local and national trail groups, tourism entities, the Chamber of Commerce, and other entities to develop a comprehensive trail system for mountain biking, pedestrian use, and motorized use to enhance trail access in the local community. The partnership efforts have increased area tourism, created outdoor infrastructure which can improve community health, enhanced community member relationships, and established areas for multiple types of recreation near a community hub.

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[4] (McReynolds, 2019)

Organizations use each of these three primary types of relationships to achieve objectives and outcomes. However, the effort of partnerships achieves a greater goal for a community that could not be achieved independently of each other.

3. *Partnership Success Factors*

There are many factors that go into creating successful partnerships. These include organizational best practices such as: focusing on important needs; creating shared vision; collaborating; achieving tangible outcomes; establishing formal agreements for the relationship; building trust; communicating; honoring commitments; committing resources for the success of the partnership, and incorporating and adapting best practices.[5]

- **Focusing on Important Needs:** Because partnerships take time to establish and develop, focusing on important needs helps the entities to determine the significant objectives of the relationship and how each entity can support those goals for the community.
- **Creating Shared Vision, Collaborating, and Achieving Tangible Outcomes:** Partnership work is transformational. Successful partnerships establish a vision for the desired future outcome of the relationship. There is an emphasis on success and that each entity contributes meaningfully to achieving the objectives. Tangible outcomes ensure clear measures for the partnership to know whether they are succeeding at implementing the shared vision. Developing these in concert with each other ensures ownership, accountability, and a shared vision for what the partnership will achieve. Setting indicators and markers of success creates opportunities for celebration, reflection, and feedback to ensure the partnership stays on track with its goals and outcomes.
- **Establishing Formal Agreements:** Formal agreements provide structure and accountability to the project. They also lay out organizational resources and how each entity will support it to reach the objectives. When issues arise, the partners can refer to the relationship to recommit, adjust, and focus on the desired outcomes.
- **Building Trust, Communicating, and Honoring Commitments:** Partnerships are built on trusting relationships. This means partners have a responsibility to work on their relationships to ensure the entities trust each other's intentions. Partners need to engage in clear communication and work through and resolve differences through that communication. Honoring commitments establishes accountability. Accountability requires keeping track of decisions, establishing process-flows, and communicating changes in needs or project scopes. Organizations engaging in a partnership need to fully own their role. This sets up succession planning so that a partnership can survive beyond the founding members to continue to deliver to the community. Each entity in a partnership has its own mission and organizational culture. This means there are different levels of ability each can provide to the partnership. Understanding strengths and limits can improve the partners' ability to seek opportunities that best meet the skills of each entity, as well as respect the boundaries that may exist within entities. When organizational strengths and limitations are understood and valued, each entity can clearly know how to contribute and maximize the partnership to reach the goals.

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[5] (O'Neill, 2013). The 21 Partnership Success Factors includes further descriptions about what goes into successful partnerships.

- **Committing Resources for the Partnership:** Committing resources, such as time, finances, equipment, or other tools, to a partnership ensures baseline needs are covered for the project to succeed. Without these, there is risk that the partnership may fail.
- **Incorporating and Adapting Best Practices:** As organizations work together, the partnership will evolve and change. Partners need to incorporate best practices, adapt to change, and be flexible to continue to meet the needs of the community and of the partnership itself. Monitoring benchmarks can ensure the partnership meets its goals.

Partnerships are about relationships. As with any relationship, communicating, understanding roles and responsibilities, working to resolve differences, and collaborating to achieve the shared outcomes ensures partnerships can succeed. As a result, the vision and goals of the partnership can flourish, which benefit the community and the sustainable stewardship of protected areas.

B. The Role of Partnerships in Land Management at the U. S. Department of the Interior

Focusing on partnerships is an objective for the Department of the Interior (DOI) and its sister agencies. This stems from several priorities. One is a realization of the need to develop positive relationships among the populace for stewardship and support of protected areas and public lands. In addition, federal budget levels may not consistently match the operational needs of sustainably maintaining and managing public lands, parks, and protected areas. Partnerships can help bolster those needs to provide capacity and support for conservation lands. Importantly, developing trusting relationships through partnerships ensures that public lands are valued, cared for, and protected across the country. In an age with varying levels of public support and trust, this role of partnerships is key to creating sustainable conservation systems that reflect the diversity of the country. Partnership skills are used as a measure of organizational, staff and leadership effectiveness. They are included in executive core qualifications, in job position descriptions, and in work plans at all levels of the Department of the Interior.

The National Park Service (NPS) Management Policies 2006 note that partnerships have enabled the NPS to achieve important conservation initiatives and "valuable assistance in the form of educational programs, visitor services, living history demonstrations, search-and rescue operations, fund-raising campaigns, habitat restoration, scientific and scholarly research, ecosystem management, and a host of other activities. These partnerships, both formal and informal, have produced countless benefits for the Service and for the national park system."[6] In addition to project-related assistance, partnerships assist the NPS with its organizational development. For example, NPS shared an objective to increase workforce diversity by "continuing efforts will be made to increase public awareness of employment opportunities and to develop partnerships with diverse populations and organizations for the purpose of improving workforce diversity."[7]

The Bureau of Land Management (BLM) utilizes formal partnerships to achieve conservation, visitor services, and stewardship objectives for public lands. The BLM describes that
> Meaningful engagement with diverse partners helps ensure that management decisions
> and efforts reflect the interests of affected communities and also helps foster a

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[6] (National Park Service, 2006)

[7] (National Park Service, 2006)

commitment to shared stewardship. Working with partners also helps improve rangeland health, preserve fragile biological and cultural resources, support a wide range of recreational activities, and provide opportunities for Americans to connect with their public lands and pursue healthy, active lifestyles[8].

One way BLM accomplishes these objectives is with Friends Organizations at visitor sites to provide financial and institutional support for sustainable public lands management.

An example of landscape level partnership efforts was with Greater sage-grouse conservation, which brought together partners and interest groups from across private, public, industry, and nonprofit sectors in the mid-2010s. These partners worked together on shared conservation goals to protect and sustainably manage the sagebrush ecosystem and keep the Greater sage-grouse from being listed as endangered under the Endangered Species Act. Federal entities included the U.S. Department of the Interior, the U.S. Fish and Wildlife Service, BLM, NPS, U.S. Department of Agriculture, the U.S. Forest Service, and Natural Resources Conservation Service. The agencies worked with Western state governments, private industry, nonprofits such as the Intermountain West Joint Council and the Sage Grouse Implementation Team, private landowners, and other entities to protect millions of acres of habitat for a healthy ecosystem and working landscape that conserved the Greater sage-grouse. The efforts provided for diverse human interests, including energy development, rangeland management, and tourism, as well as important natural resources conservation efforts to sustain the sagebrush ecosystem and the more than 350 species that live there. Partnerships such as this are long ranging and involve creating trusting relationships, shared objectives, and transformational goals to conserve large-scale ecosystems.

III.   Conclusions on Universal Best Practices.

Partnerships create opportunities for agencies to work with others and achieve positive, community-based outcomes that would be difficult to achieve on one's own. Partnerships promote institutional strengthening and sustainable management for protected areas. A few best practices include:

- Identify common needs and shared goals that enhance the community. Partnerships flourish when two or more entities collaborate to achieve something that neither could achieve on their own. For example, the outcome could be community-focused and enhance the protected area system.
- Commit to the success of the outcome through partnership. This involves open communication, establishing a sustainable structure for the partnership, and understanding the scope of the partnership. It is also important to understand the strengths and limitations of each entity so each can be most effective at supporting the outcomes of the partnership.
- Develop a partnership structure, foster trusting relationships, and communicate openly. Partnerships are built of people. Creating a structure for the partnership, through formal roles, ensures accountability to its success. This includes providing appropriate resources needed for the partnership to succeed. Communicating openly and developing trust

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[8] (Bureau of Land Management, 2020)

ensure that each entity knows what is expected, that each will do their part, and that the relationships within the partnership are valued.
- Celebrate successes, seek feedback, and continually adapt. Partnerships require organizational and interpersonal work to be successful. They take time and may not always result in successful outcomes immediately. Take time to celebrate milestones along the way, celebrate successes of the partnership, evaluate the relationship and outcomes, and adapt to changing needs and situations.

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DEPARTMENT OF THE INTERIOR - INTERNATIONAL TECHNICAL ASSISTANCE PROGRAM
GEORGIA PROTECTED AREAS POLICY REVIEW
LAW ENFORCEMENT AND SEARCH AND RESCUE
APRIL 18, 2023

Project Phase 2.3 – Briefing Paper, Subtopic: Law Enforcement Case Construction
Strategy for Optimal Deterrent Impact, Ecosystem Protection
Lead Author: Steve Shackleton

I. Introduction.

The Organic Act of the National Park Service[1], charges the agency with protecting park resources without impairment. These resources are often rare or unique. A particular park is one of the few places on Earth where that type of resource continues to exist in enough numbers to provide the genetic diversity for it to continue to thrive in a sustained way.

It is not enough for law enforcement to take legal action against people who take or kill a thing or a species that falls into a "protected" category. The park must create a deterrent through a successful and correctly proportioned law enforcement action and use the outcome to create a public narrative that effectively discourages future takes of that resource.

II. Overview, Discussion, Demonstration Examples.

This section uses a demonstration example that is made up of a number of real examples to illustrate the creation of deterrence that effectively ends the threat to – in this case – an ecosystem that is the substrate for several endangered species of birdlife.

An analog can be seen in the mission of the US Secret Service. That agency is charged with protecting the president and other national leaders from being harmed. It is not sufficient for the Secret Service to perform an excellent investigation and prosecution after the president or a visiting dignitary is assaulted: the goal is to keep it from happening. Similarly, it is the goal of the *visitor and resource protection operation* in a park to keep any losses from occurring in the first place. One of the ways to approach this goal is to make sure that those cases that do go to court are approached strategically as object lessons, designed to create a deterrent story.

    A. <u>Ecosystem Damage Caused by Marijuana Cultivation, Hawaii Volcanoes National Park</u>
In the early 1980's, the practice of illegally growing marijuana on the Island of Hawaii had migrated into Hawaii Volcanoes National Park from outlying areas and became a serious threat. This was a threat not only for the potential for violence to visitors and staff, but very significantly as a threat to the integrity of the Fern/Ohia rainforest in the windward regions of the park. The Fern/Ohia forest thrives on the rainy, trade-wind side of the park from sea-level to timberline at about 7600 feet. The Hapuu tree fern in combination with the indigenous Ohia tree create a canopy that precludes the forest floor from receiving full sunlight. This shaded forest floor creates perfect conditions for the Hapuu and Ohia to regenerate, but discourages most alien species from propagating.

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[1] 39 Stat. 535; 16 U.S.C. 1, 2, 3, and 4

Marijuana growers began to move into the park in the 1980s because to grow on their own land risked forfeiture of their property if they were caught and prosecuted. The national park being public land offered relative privacy and - on the island's rainy side, easier cultivation because water delivery was natural – without the risk of the grower losing their own land.

The Fern/Ohia rain forest is the host ecosystem of numerous species of birds known as honeycreepers, exclusively endemic to the Hawaiian Islands. Many require Ohia blossom nectar for survival. Hawaii Volcanoes National Park is one of the largest remaining sanctuaries for their safety – and is the largest federal sanctuary that guarantees their protection from extinction into perpetuity.

Notably – and this is the crux – the practice of hacking out sections of the rainforest to grow marijuana created a lesion in the forest where sunlight poured in onto the forest floor, allowing alien species (such as *Faya* from the Azores and *Banana Poka* from the Amazon) to germinate, outcompete and spread destruction like a cancer.

Beginning in about 1981, park management announced to the community that the federal laws prohibiting marijuana cultivation would be enforced and anyone engaged in the practice should discontinue and move out. Many did, but at least 25 growers – eventually prosecuted - decided to remain.

The park understood that defense against prosecution would be vigorous: at the time, marijuana use and its cultivation were popular in Hawaii and the law was downplayed as anachronistic. Harder yet, there was a cadre of defense attorneys standing by as contract public defenders, who specialized in this area, worked free of charge for defendants, and were paid by the government. Jury nullification was a continuous threat to prosecution if cases were charged simply as drug violations.

To bring the practice to an end, the park undertook four tactical thrusts: internal education, reasoned charging strategy, scientific partnership, and public awareness.

1. Internal education, simply put, involved creating partnerships with all potential agencies and offices necessary to succeed in making cases that would eventually tell a deterrent story and educating them about the problem to the point that a team mentality and commitment evolved. These included the prosecuting attorneys in the Department of Justice, the federal magistrates that would hear the cases in the most preliminary phases, adjacent law enforcement agencies that would assist under cooperative agreements in the field, crime labs that would do the forensic work necessary to validate evidence, scientific ecosystem and cultural experts, and the media.

2. A charging strategy developed that included (with the prosecutors' blessing based on the education phase) filing every available criminal charge, even if it seemed redundant to do so. For example, this might include: possession of marijuana, possession with intent to distribute, cultivation on federal land, conspiracy to cultivate and distribute, destruction of park natural resources. The objective was to make it easier for the defense to see the full scale of chargeable activity and seek an agreement once they were convinced of their client's involvement. This

may seem logical, but many prosecutors will not use this approach because of the workload. The strategy also – and most importantly – included an educational component where the resource destruction was described by scientific experts both during trial and during the sentencing phase.

3. The park partnered with resource experts - who were scientific staff within the National Park Service and partner agencies - and with the University of Hawaii to testify as to the impacts the rainforest ecosystem suffered, as a result of marijuana cultivation, The case agent tied those destructive impacts into the purpose of the prosecution and annunciated them as a reflection of the responsibility of the Park Service to protect those resources. The park also brought in experts on Hawaiian culture that helped the court understand the ancient cultural importance of ecosystem protection, thus providing community relevance and taking the prosecution out of the realm of the enforcement of (for some) an archaic drug law.

4. Each case prosecution was followed by a carefully crafted educational public affairs release with the media that emphasized the resource protection province of the national park and that stressed the role of the park as the steward of ecosystem and native bird protection. This, to create a sense of community relevance, shared values, and to overcome reluctance to convict in an otherwise simple marijuana case.

III.   Conclusions on Universal Best Practices.

The four-part strategy was measurably successful by 1987 and remains so to this day. Almost no growing occurred in the park in the intervening thirty-five years.

The approach was viewed as being fair and reasonably proportioned by the court, the prosecutor's office, the juries, and most importantly the public.

A sentiment developed in the villages surrounding the park and throughout the islands that the park maintained a kind of sacred responsibility for the safe functioning of the rain-forest system and health of the wildlife within. Although each defendant served time – (in one case, out of 25, a fine), there was a sentiment that it was fair because the park was clear in its warning before the fact.

The deterrent did not come from incarceration, but most apparently from peer pressure. To this day, marijuana cultivation cases in Hawaii Volcanoes National Park are rare, in large part because it is considered a breach of environmental justice to harm the park's forests.

To perpetuate this deterrent, the park needs to continuously educate and not lose the power of the story.

Project Phase 2.3 – Briefing Paper, Law Enforcement - Constitutional and Statutory Underpinnings in the U.S. National Park Service
Lead Author: Steve Shackelton

I. Introduction.

The Organic Act of the National Park Service[1], charges the agency with protecting park resources without impairment. These resources are often rare or unique. A particular park may be one of the few places on Earth where that type of resource continues to exist in enough numbers to provide the genetic diversity for it to thrive in a sustained way.

It is not enough for law enforcement to take legal action against people who take or kill a thing or a species that falls into a "protected" category. The park must deter illegal activity through a successful and correctly proportioned law enforcement program and use the outcome to create a public message that effectively discourages future harms to that resource.

II. Overview, Discussion, Demonstration Examples.

The majority of the time – in national parks within the United States – law enforcement cases that go to court pass through the trial process without fanfare or controversy. However, sometimes park resources or areas of jurisdiction are contentious enough that lawyers for defendants, states, or "friends of the court" will side against the government to fight the Park Service's position on a case. In American law, the outcome of such cases can create precedent that will impact future policy. In that light, sustaining the desired federal view on these cases is important to sustain optimal protection powers.

Sometimes these differences have to do with who has property rights over a resource: such a migratory wildlife. Sometimes the dispute has to do with who has jurisdiction over a physical or theoretical area: such as submerged lands, flowing water, airspace, or private property within the boundaries of a park.

   A. Example: Shooting a moose in a national park during hunting season in a park in Alaska from a marshy area on a river may provoke an amicus (friend of the court) action by the State of Alaska. In this case, Alaska might argue on behalf of the defendant where the state believes it has jurisdiction on submerged lands (underwater) within the park, in contrast to the federal view.

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[1] 39 Stat. 535; 54 U.S.C. § 100101-104909.

B.   An illegal BASE-jumping case (sport parachuting from a fixed point), initiated by an activity launching from a granite wall in Yosemite may provoke an amicus action by an advocacy group for the sport, claiming the park has no jurisdiction in airspace above the park.

III.   Conclusions on Universal Best Practices.
The attached addendum is less a case study and more an explanatory discussion on the importance of tying a park's law enforcement program to the constitutional powers that allow a park to protect its host of resources and the people who visit – as well as the statutory specifics that bring life to law enforcement and that descend from the Constitution.

Takeaway: Failing to be able to tie any law enforcement action taken within a park to statutes and Constitutional powers that enable those statutes will cause failure in resource and public protection strategies in court. These failures will set precedent that can negatively affect law enforcement on a local or national level.   There is no component of a park law enforcement program more important than establishing this essential foundation and ensuring that all law enforcement personnel are trained on its relevance.

Attachment: See separate attachment – *Draft V4 Final – Law Enforcement Context Brief for Paata*

DEPARTMENT OF THE INTERIOR - INTERNATIONAL TECHNICAL ASSISTANCE PROGRAM
GEORGIA PROTECTED AREAS POLICY REVIEW
SUBGROUP: LAW ENFORCEMENT/SEARCH AND RESCUE
DATE: MARCH 16, 2023. FINAL: APRIL 21, 2023

Project Phase 2.3 – Briefing Paper, Subtopic: Search and Rescue, Emergency Medicine
Contextual Framework
Lead Author: Steve Shackleton

I.   Introduction

This abstract provides an overview of how search and rescue (SAR) operates in the U.S National Park Service (NPS).

This framework describes the internal and collaborative structures and underlying philosophies upon which NPS relies to provide search and rescue services to the public and its own workforce.

It also discusses the big questions common to search and rescue organizations, given that demand for searches and rescues is variable (not constant), expensive, and requires different types and numbers of human resources, depending on the nature of the operation:
- What is the duty to perform search and rescue – duty to service
- How to elastically staff for search and rescue
- How to efficiently train
- How to equip responders
- How to fund expensive operations
- How to prevent accidents and the risk of lost people in wild park settings
- How to know when to respond and when not to risk a response
- How are medical services provided?

With this framework, the pieces of the NPS SAR program come together in a system that is predictably qualified, reliably responsive, and affordable to operate.

II.   Overview, Discussion, Demonstration Examples

The American national park system contains some of the wildest natural landscapes in the world. It includes mountain ranges, glaciers, deserts, marine environments, white-water rivers, vertical granite cliffs, limestone caverns, waterfalls and volcanic lava flows, boiling geyser features and endlessly more of nature's most potentially dangerous features.

The very environments that make parks dangerous also make them attractive to 280 million visitors a year, from almost every nation, around the world.

The mission of the US National Park Service (NPS) to protect parks and their resources for the enjoyment of the public, in perpetuity, and without impairment – means that the enjoyment of

park visitors (in the endless varieties of activity that enjoyment might take place) is baked into the purpose of American parks. It's not optional.

NPS seeks to allow access to recreation in these wild places unless such recreation would create intolerable, unreasonable, or reckless risk. NPS may also prohibit those recreational uses that are deemed inconsistent with the other purposes for the creation of the park (although those forms of recreation may be pursued elsewhere).

In other words, very seldom do we curtail an activity – rock-climbing, mountaineering, kayaking, surfing, diving, cave exploration – just because there is an element of danger. In some rare instances, regarding dangerous sports (such as BASE-jumping), prohibitions have been established because the opportunities to enjoy the sport elsewhere are many, where impacts on other visitors are not negative.

In many instances, additional federal laws preserve the wild character of an area. The Wilderness Act and Wild and Scenic Rivers Act are two examples. The need to preserve wild and natural conditions means an absence ofengineered mitigations that might be available in non-park, non-wilderness areas.

We, as American people, through legislative evolution, have established that we want our parks to be generally primal and wild, , so that we can encounter nature on its own primitive terms.

As a result, some people that come to national parks, come there expecting to encounter a certain level of risk in the outdoors.

Predictably - entering these environments - visitors sometimes have accidents and get lost, requiring park staff to provide search and rescue services to correct the misadventure.

This predictable outcome is exacerbated by the reality that people come to parks from virtually all cultures, all ages, almost all languages and all levels of outdoor experience from expert down to no experience at all.

Park managers must operate the park to be as accessible as possible to millions of people from all these backgrounds, while providing reasonable balance of relatively unfettered access that does not cross the line into recklessness.

A. Duty to Service

As the Republic of Georgia analyzes the function of search and rescue, the first question that arises is: does the park service have a duty to provide these services? It is an open question and not a question for assumptions.

It may be that another (or several other) organizations in Georgia are better qualitied and equipped to provide search and rescue service.

In the United States, that is usually not the case. Although, as we will see, the NPS almost always relies on a partnership approach to search and rescue with neighboring organizations. The partnership culture helps fill in the gaps of training, staff-power, technology, medical services, and related resources.

Basically, the NPS has determined that it will provide these services and in almost all cases, will not charge the injured or lost parties a fee for that service. Nationally, we feel that it is included in the *service* part of National Park Service.

This duty is not specifically called out in the law but the NPS search and rescue program has evolved to exist as a function that is expected in parks and is supported by and not contravened by law. At least part of the reason for this expectation is that – because of the remoteness of many older national parks – there historically was no other nearby agency available to perform searches, rescues, and medical services.

B. How Does a Park Staff for Search and Rescue?

Because rescues and searches are based on accidents of human behavior, and because in most instances their frequency is not very predictable, and because park budgets are modest and never allow for over-staffing, it is a challenge to create a staffing model that can rise to the occasion of a large-scale search or rescue.

The challenge is met, however, through innovative methods that involve creating elastic or expandable staff models and partnerships.

As a case study, we will discuss methods in use today in Yosemite National Park to make the point.

Core Staffing: To begin with, in Yosemite, a small core is established of three of four rangers in the park, who specialize in search and rescue and emergency medicine: known as Emergency Operations. This core group is specifically assigned to take the lead in this field.

The park has about 450 search, rescue, and medical incidents a year.

This Emergency Operations core exists to provide coordination, training, equipment management, and leadership for these functions.

Park-wide Ranger Staffing: Another 80 to 120 park rangers (depending on the season of the year) work in the 750,000-acre park, in at least six park villages and along the 800 miles of backcountry trails. These rangers are all trained in basic search and rescue techniques and emergency medicine at what is known in the United States as the Emergency Medical Technician or EMT level.

In addition, many dozen additional park employees in interpretation and maintenance positions are trained at the advanced first aid level.

The result is that in most searches, simple rescues and minor medical incidents are handled very quickly by staff who are on-site when the accident or need for a search arises.

In cases where the rescue is more complex and the search is over a large area or extends for many days, the Emergency Services core team works with the ranger leadership in the incident (usually called a district) to mount a protracted response.

Many of these efforts can be handled by the rangers in the district of the park where the incident first developed.

But every now and then – between 12 and 20 times a year, a rescue or a search takes on giant proportions.

In these cases, there are several methods for meeting the staffing challenge.

SAR-siters: In Yosemite, there are two camps that are home to ten rescue personnel each. One is in Yosemite Valley, and one is in Tuolumne Meadows. These people live in highly developed camps called search and rescue sites or SAR-sites. The rescue people are known as SAR-siters.

The logic of the SAR-siters is based on the universal draw of Yosemite as a premier rock-climbing region. The SAR-siters are generally people with highly advanced rock-climbing and/or medical skills. In exchange for being housed in Yosemite where they can climb as much as possible, they are able to respond as force-multipliers when there is a demanding search or a rescue.

This is an affordable solution. When there is no incident going on, they can climb and enjoy the park, off the government pay-roll. When an incident occurs, they come on the payroll under an authority given to the Park Service by Congress, to handle emergency incidents. Because they are generally climbing, mountaineering, and sharpening their skills all the time, they provide an incomparable rock-climbing expertise on difficult rescues. Because they are only paid when there is an incident, they are an affordable auxiliary workforce.

Volunteers: An additional emergency workforce comes from volunteer search and rescue teams. Many counties in the United States have teams of search, rescue, and medical enthusiasts, who become very skilled as a form of community service or hobby. On very large scale searches, these teams may be requested to come and aid a search. In some cases, the team works in a volunteer mode, but more often, they are compensated under the same authority described above with the SAR-siters.

The teams are often made up of ground searchers, who are available to search on foot, skis, or snowshoes.

Dogs: In addition to ground searchers, there are dog teams. In the Yosemite region is a volunteer team called Yodogs. This team is comprised of state certified dog handlers and dogs trained to find people and not disturb wildlife. The dogs are usually trained at a particular skill

such as grid-searching, scent searching and cadaver sensing. Many are certified to fly in helicopters and some to be hoisted or lowered from a helicopter with their handler.

Volunteer Aircraft: In the United States, there is an organization called the Civil Air Patrol or CAP. CAP is made up of private pilots who are motivated to provide community service in times of emergency. CAP is affiliated for standards with the US Air Force but is not a military entity. In many types of searches where there is value in having observers or searchers in the sky, the Civil Air Patrol may be activated to help.

Inter-agency Assistance: In addition to volunteer resources, Yosemite (and all other parks) can enter into cooperative agreements with neighboring agencies and other parks and national forests. These professional partners can often provide very high levels of expert search, rescue, and medical personnel.
They also provide much needed air resources. Yosemite, over the decades, has developed partnership arrangement for air resources with different agencies that compliment Yosemite's aviation program.

To begin with, Yosemite contracts a "medium" helicopter to be stationed in the park during the fire season between May and October. The fire season months generally correspond to the heaviest search and rescue months. The helicopter has the capacity to do fire-fighting operations, known as special uses, as well as highly evolved search and rescue functions.

However, when there are multiple incidents going on in the park at the same time, this helicopter is not able to keep up with the case demand.

In these cases, the park can call in aviation support from partners. In the case of Yosemite that help can include:
- helicopter assistance from nearby Sequoia and Kings-Canyon National Parks
- helicopters from the California Highway Patrol Aviation Division, with aircraft that have hoist capability, heli-rappelling and short-haul certification.
- larger helicopter assistance from the Military Assistance to Safety and Traffic (MAST) program of the US Army near San Francisco, the California National Guard near Sacramento, and the US Navy rescue from a base in the San Joaquin Valley.

C. How Does a Park Sufficiently Train

This is a very involved question and books have been devoted to it. However, succinctly put, the United States works under a framework called the National Incident Management System or NIMS. NIMS has spent decades evolving standards of training to qualify all predictable positions that will likely be needed on the full range of searches.

The range of skills is diverse. Examples include aircraft managers, dog-handlers, climbers, swift-water rescuers, and levels of medical qualifications.

A ranger interested in developing their skills under the NIMS system will take a course of class-room training, often accompanied by field skills development. Then they will be subjected to a

period of "trainee" time where they must go on real incidents under the guidance of a mentor to develop real-world experience. During this time, they maintain a diary called a "task book". When they have satisfied the criteria, they received certification at given level for that type of assignment on incidents. They are given a card that has that skill documented on it that allows them to deploy for that task….it's referred to as being "carded".

Inventories are kept that keep track of all personnel carded for the various search, rescue, medical and fire tasks.

When an incident unfolds, Yosemite puts in a request for certain numbers of people carded with certain skills – and other parks, forests, and cooperating agencies free up people to come to the park to assist, knowing that the people arriving have met a uniformly-recognized set of standards that guarantees their proficient to work on the incident.

D. How To Equip Responders

In most cases, in the National Park Service, equipment is purchased by the park for search, rescue and medical incidents. Because it is, in most cases durable equipment – climbing gear, litters, SCUBA gear, boats – it can be amassed over time and centrally located in small warehouses known as rescue caches.

There are provisions in rescue incident funding rules, described below, for replacing gear that is damaged or used up on an operation – so once the caches are stocked, they can often remain well-stocked with serviceable gear.

However, in some lean budget cycles, this time-honored method fails to keep up. In the case of Yosemite, in 2002, a non-profit friend's group was established to accept money through philanthropy to support emergency services. The non-profit is called Friends of Yosemite Search and Rescue. Such an organization is allowed for by federal law and policy as an "arms-length" way for the park to accept donations from the public. These donations often come in after a successful search or rescue from a grateful family. Sometimes, they come in after an unsuccessful search by family members who came to recognize how much effort was put into finding their loved one. Friends of Yosemite Search and Rescue focusses on four objectives: training, equipment, support for the SAR-siters, and accident prevention.

E. How To Fund Expensive, Large Incidents

This is a critical question in American search and rescue – as is probably the case in Georgia. No American park has the fiscal resources on hand to cover the costs of large search and rescues.

In the United States, federal budgets are appropriated each year, initially in the House of Representatives. Each agency is distributed a budget through what are known as line-items. Line-items are specific amounts of funding for very specific agency purposes, directed by Congress. Under US law, an agency manager cannot use money in one line-item for a different purpose than that which Congress directed.

In the case of the US National Park Service, Congress has developed, over the decades, a method of carving out an exception for emergency search and rescue, fire, and law enforcement cases.

In the case of search and rescue, when a park's expenses exceed a certain threshold, an appeal can filed to headquarters in Washington, DC asking for what's known as a "SAR account". The authority is found in 50 United States Code 103101(c), which allows the Secretary of the Interior to approve the redistribution of funding up to $250,000 to cover the costs of a large incident.

Without this authority, it would not be possible for the National Park service to handle its large expensive incidents.

F. How To Prevent Accidents

In the US National Park service, a new field is developing, commonly known as PSAR for preventative search and rescue. PSAR is about 20 years old now as a concept and is not fully formed or uniformly understood, structured, or distributed between parks.

It is raised here for the Georgia study group, so that there is a recognition that a prevention program is in development.

Problems confronting PSAR are many, but two major stumbling blocks are how do you reach people of unlimited backgrounds, cultures, ages, languages with safety messages that are effective – and the age-old phenomenon that prevention is always poorly funded because all existing funding is already going to urgent and emergency priorities.

Yosemite is taking a three-pronged approach:
- Basic attention in the Emergency Operation core office – often under-funded
- Assistance from the non-profit Yosemite Conservancy
- Assistance from the non-profit Friends of Yosemite Search and Rescue

Perhaps the lesson here is to look to volunteer groups and philanthropy to help with this important, but often overlooked necessity in the search and rescue domain.

G. How To Know When to Respond and When Not to Risk a Response

It is almost always the case that responding to a search, or a rescue, has some degree of danger to the rescuers. Park managers typically mount a rescue, but they have also have an obligation to make sure the rescuers do not get hurt during the operation.

In all candor, rangers put themselves at risk to save visitors all the time. Occasionally, they get injured or lose their lives in the process.

In the mid-2000s, the National Park Service borrowed a set of safety protocols from the US Coast Guard, and forged them into a program, now called Operational Leadership.

The operational leadership method asks the incident leader to look at eight elements and characteristics of the incident and the team being composed to address it. Each of the eight elements is scored from 1 to 10. The lower the score, the better conditions of that element or condition. If the total score lies between 8 and 35, the incident response may proceed as it stands. If it scores between 36 and 60, either steps need to be taken to get it below35 or a higher-level supervisor has to approve continuation of the mission. If it scores above 60, the operation does not move - unless changes are made to the response or conditions improve to the point that it may proceed.

GAR Operational Risk Management Assessment	
Rate 1-10 → Any category rated > 5 should receive specific mitigation	
1. Supervision	Qualified, effective, accessible? Clear chain of command? Appropriate span of control ratio?
2. Planning	Information available & clear; adequate time to plan? SOPs & JHAs? Team briefed & input solicited?
3. Team Selection	Level of training and experience? Cohesiveness & attitude? Prone to skill error; complacency error?
4. Team Fitness	Physical & mental state of the team? Consider rest, fatigue, morale, outside distractions.
5. Communication	Communications equipment, infrastructure & dispatch? Interpersonal communications of team?
6. Contingency Resources	MOU's and pre-plans in place? Shared communications plan? Response time?
7. Environment	Time of day, weather, topography, approach & access, fuel load, urban challenges, chemicals?
8. Incident Complexity	Exposure time, environment stable? Potential for taxing staff? Multiple tasks? Sense of urgency?
Green (8-35)	Amber (36-60)	Red (61-80)

With the advent of Operational leadership, for the first time in its history the National Park service has a way of analyzing risk objectively and making go-no go decisions based on metrics that could be communicated to all interested parties…including loved ones who might otherwise wonder why the park rangers "…aren't doing anything".

The beauty of Operational leadership (alternatively known as the GAR model for Green, Amber, Red above) is that everyone on an incident has a common understanding of the risks and an opportunity to weigh in with suggested ways to mitigate the various risk factors in a response.

H. How Are Medical Services Provided

In the United States, professional medical services are provided by doctors who are certified by state or federal medical boards. Citizens that provide emergency medical services as volunteers, out of compassion are generally covered under "Good Samaritan Laws" in each of the states. These laws recognize that no citizen would render emergency medical aid if they could be easily sued by stopping to help an injured fellow citizen. So, they are protected in the law for doing a reasonable job of attempting to provide emergency medical care, as necessary.

Park rangers, who provide medical services for the National Park Service fall somewhere in between.

Most permanent park rangers must train to the Emergency Medical Technician (EMT) level or higher. Some are paramedics. Some are in between the two categories and are Park Medics.

In Park Service medical work, all ranger medics serve in affiliation with a park medical director, who is a board-certified doctor. These doctors do not generally work in the park, nor are they employed by the National Park Service, but generally work in a nearby community hospital.

It is these doctors who assist in defining the levels of emergency medical training the rangers receive and how they receive it. They often provide access to the *emergency room* training hours the rangers must pass to be and remain certified – and often help in defining the scope of medical operations they will support. This can include an analysis of the need for, and authorization to perform advanced life support and the administration of certain life-saving drugs in the field.

Once again, as in the case of the NIMS qualifications mentioned above, very careful record-keeping is done on all park medical personnel, along with routine re-certifications to stay certified from year to year.

Liability can be higher for a park ranger than a citizen acting as a Good Samaritan, so rigorous training and certification, along with fidelity to the accepted medical protocols are essential elements of a medical program.

In Yosemite National Park, the rangers not only have a relationship the US Public Health Service doctors stationed in the Yosemite Medical Clinic, but also a "medical director" stationed in a regional general hospital in the City of Fresno 90 miles to the south of the park.

III.   Conclusions and Universal Best Practices

This case description – using Yosemite National Park as a model – is intended to convey the point that search, rescue, and emergency medical services can thrive and operate at very high levels of competence and effectiveness, in even modestly funded park settings, if the functions are viewed, planned, and activated as an integrated partnership ecosystem.

The SAR-medical community establishes systems of synergy, where partner agencies, the military, volunteers, and philanthropy – the enthusiasm of the public - can all be marshalled to create a vibrant, sustained program.

If the parks reviewing this document can perform a stakeholder and partnership assessment and map out an ideal mosaic of contribution by the park service, the military, donor groups, allied agencies (perhaps allied neighboring countries' SAR programs), there should be every confidence a highly functioning SAR-medical program could be in operation in Georgia parks in a short time.

These same parks have a standing invitation to visit Yosemite through the University of California to study the organization there, firsthand.

PUBLIC OUTREACH AND ENVIRONMENTAL EDUCATION SUBGROUP

JULY 22, 2022

Project Phase 2.3 – Briefing Paper: Citizen Science in Protected Areas

Lead Author: Lawrence Sperling

I.   Introduction.

For many people, learning is best achieved through hands-on experience. Citizen Science programs can be a valuable tool to engage the public, particularly youth, in hands-on learning experiences that foster interest in environmental education and conservation, broaden visitor experiences in protected areas, and inspire participants to value and conserve nature. Citizen Science programs can encourage public appreciation of the importance of data and sound science to inform decision making and motivate young people to pursue educational and career opportunities in science, technology, engineering, and mathematics (STEM). Citizen Science programs can also provide an important vehicle for protected area managers to build partnerships with the local community, including schools and civil society organizations.

Effective protected area management is informed by sound science. Citizen Science programs can play a crucial role in helping protected area managers and scientists understand what is occurring and manage natural and cultural resources within and beyond protected areas. Well-designed Citizen Science programs can provide an important complement to official statistics, administrative data, and scientific research to inform decision-making. Through these programs, citizens lend their eyes and ears to park officials as they collect data throughout parks. Citizen-generated data (CGD) can help managers understand the state and dynamics of biodiversity within and beyond protected areas, monitor threats to fragile ecosystems, manage invasive species, and provide early warning of natural disasters or other events that require management responses.

II.   Overview/Discussion

A. Citizen Science and Open Data in the United States

The United States has been a leader in promoting the principle that government data should be open and accessible to the public. Launched in 2009, the official U.S. government open data website, data.gov, now makes over 310,000 data sets available to the public. In 2013, U.S. President Barack Obama signed an executive order making data managed by the government "open by default". The White House emphasized that "making information resources easy to find, accessible, and usable can fuel entrepreneurship, innovation, and scientific discovery that

improves Americans' lives." The U.S. Senate unanimously passed, and the President signed in January 2019, the Open, Public, Electronic and Necessary (OPEN) Government Data Act, enshrining into law the principle that data should be open by default wherever possible.

The U.S. Congress recognized the value of Citizen Science in advancing the missions of Federal agencies and facilitating public participation with passage of the 2017 Crowdsourcing and Citizen Science Act. The law defines citizen science as "a form of open collaboration in which individuals or organizations participate voluntarily in the scientific process," including: formulating research questions; designing projects; conducting scientific experiments; collecting analyzing and interpreting data; developing technologies and applications; making discoveries; and solving problems. The law encourages Federal science agencies to utilize citizen science data to conduct projects designed to advance their mission. It requires that agencies, where appropriate and to the extent practicable, make data collected through citizen science projects available to the public, in a machine readable format, unless prohibited by law.

CitizenScience.gov is an official government website launched in 2016 to accelerate crowdsourcing and citizen science across the U.S. government. The site provides a portal to three key components: a catalog of federally supported citizen science projects, a toolkit to assist federal practitioners with designing and maintaining their projects, and a gateway to a community of hundreds of citizen science practitioners and coordinators across government.

B. Demonstration Examples

DOI bureaus that manage protected areas – the National Park Service, the U.S. Fish and Wildlife Service, and the Bureau of Land Management, as well as the U.S. Department of Agriculture's Forest Service and the Department of Commerce's National Oceanographic and Atmospheric Administration offer a wide range of citizen science programs to visitors. Annex I describes some key examples.

Annex I also describes several local, regional, and global citizen science efforts offered by non-governmental organizations (often in partnership with U.S. government agencies). These efforts may provide examples around which Georgian authorities could design citizen science programs in national protected areas. In some cases, they provide existing platforms for reporting citizen science data that may be readily adapted for participation by Georgian protected area managers, visitors, local communities, and other partners.

C. Challenges

Citizen science is a valuable tool for environmental education, engaging citizens, partnering with the local community, and developing valuable data for decision-makers. Yet, official statisticians, scientific researchers and government officials often express skepticism of the quality, reliability and utility of citizen-generated data (CGD) for decision-making. For example, when CGD comes from multiple agencies or sites that employ different methodologies pursuing different priorities, it may be difficult to compare data across geographies. Therefore, CGD's

utility in observing trends at the macro level, like biodiversity and ecosystem health across landscapes, is limited unless projects collect similar data and employ similar standards and methodologies in multiple places. Yet, solving these concerns through top-down approaches using uniform data collection standards may not be suitable to meet a specific protected area's needs. On the other hand, a bottom-up approach, driven solely by the needs of individual protected areas, may not allow for meaningful comparisons across landscapes or ecosystems and may miss opportunities for capacity development and resource sharing among multiple protected areas and partners.

The Global Partnership for Sustainable Development Data (GPSDD) launched a Citizen-Generated Data Task Team to examine these challenges and develop recommendations for ensuring that CGD is fit-for-purpose and generates data that is of sufficient quality and reliability to inform decision-making. The Task Team developed Advancing sustainability together? Citizen-generated data and the Sustainable Development Goals, a report that examines different approaches to organizing CGD, how governments engage with these types of initiatives, and concrete benefits for implementing and monitoring CGD efforts. GPSDD's CGD Task Team then published Choosing and Engaging with Citizen-Generated Data, a guide that offers suggestions for designing CGD efforts that are fit-for-purpose and produce data of sufficient quality and reliability to inform decision-making.

III.   Universal Best Practices

<u>Data Stewardship for Use and Decision-Making</u>

Designing data initiatives that can inform scientific understanding and decision-making depends on good data management and stewardship practices. Informed in large measure by U.S. leadership on open data, in 2016 Nature's Scientific Data Journal published the FAIR Guiding Principles for Scientific Data Management and Stewardship. The FAIR framework elaborates four foundational principles for good management and stewardship of data to ensure they can be used by others to inform understanding and decision-making:

- Findability: The first step in (re)using data is to find them.
- Accessibility: The user needs to know how the data can be accessed.
- Interoperability: Data usually need to be able to be integrated with other data.
- Reusability: The ultimate goal of FAIR is to optimize the reuse of data.

<u>Citizen-Generated Data</u>

GPSDD's Choosing and Engaging with Citizen-Generated Data Guide identifies a number of steps that are worthy of consideration in designing a citizen science project in national protected areas. Among them, the Guide emphasizes the following:

Step 1: Define the goals and scope of your intervention
Step 2: Clarify what CGD approach is useful for your purpose
Step 3: Clarify how the participation of people will help.
Step 4: What resources are available to support CGD?

Annex II elaborates key questions for consideration in each of these steps, and additional factors to consider in designing citizen-generated data projects.

Citizen Science Projects in Protected Areas

Partnering

Engaging local schools and educators, and local or national civil society organizations and businesses as project partners can be a valuable strategy. Through this engagement, protected area managers can publicize the effort, leverage resources, recruit volunteers, build commitment to participation, train volunteers in project methodology, ensure sound project design and quality of data collection and analysis, and maximize the educational and public awareness objectives of the project. This engagement also builds lasting collaborative relationships with the local community and national partners.

Public Outreach and Engaging Volunteers

An important consideration in developing citizen science projects in protected areas is how information can be disseminated to potential volunteers and visitors about the project. In addition to working with local partners to get the word out about the project, information about citizen science projects may be distributed through social media so potential volunteers know about the program and what they need to do before arriving. Signs advertising the project may be distributed throughout visitor centers and entrances to inform and encourage more people to join the project. Rangers and staff should have a sufficient understanding of the project to encourage visitors to participate, and to provide guidance to visitors to ensure data collection and analysis are done properly and consistent with the project methodology.

Scoping and Designing the Project

As noted above in the discussion of Challenges, an important consideration in project scoping and design is whether the data produced is intended for use only for management of the sponsoring protected area, or whether it can inform broader scientific insights at the landscape or national level or beyond – such as assessing biodiversity, species range, seasonal variations, and trends over time, including the influence of climate and land use change over large areas. In the latter case, it is important to develop projects using data collection and analysis methodologies consistent with those used beyond the individual protected area. Projects that seek to develop insights, inform decisions, and build awareness of environmental challenges and trends that are not limited to local or national contexts may benefit from partnering with global platforms to ensure consistency of methodology and data quality across multiple jurisdictions and landscapes.

Complex research questions often require multiple data sources to provide scientific insights and inform decision-making, and analysis and re-use by multiple parties. Ensuring that data collected by citizen scientists is FAIR (findable and accessible, interoperable, and reusable) are

important factors to consider in project design. Data collected, and the reporting platforms used to report them, should be open to others for analysis and use, to the extent possible.

<u>Training and Equipment</u>

Training participants is often important to ensure that volunteers follow the same methodologies when collecting data and that their entries are of high quality. Volunteers should have access to common training materials to ensure consistency. The level of training needed to ensure quality results is an important consideration in designing projects. Training may be done in-person, through online training modules, or a combination.

Some citizen science programs, such as taking pictures of targeted species and areas, require little to no training for potential volunteers. On-line data collection guidelines, for example, might be sufficient. More intensive projects, such as determining the cause of death in animal carcasses, require more training- both to ensure quality data collection and to mitigate risks to participants. Volunteers may need to attend in-person training sessions to learn the guidelines and collection methods.

While training may increase the accuracy of data collection, volunteers may make mistakes. In some cases, data collection could be completed by volunteers with minimal training, while more extensive training could be provided for a cadre of volunteers to review, validate, correct, or add appropriate details to data uploads.

When schools participate in citizen science programs, materials and trainings may be provided to educators, who can serve as key partners in project implementation and data quality assurance. Teachers may be given lesson plans, to both train students in project implementation and maximize the educational value of participation by student volunteers.

The materials needed for volunteers to collect data for citizen science projects should generally be inexpensive, easy to make, or simple to acquire. If citizen science projects require volunteers to have specialized equipment that they cannot make or do not already have, project heads should ensure that volunteers use the same materials, obtained from common sources.

IV.   Conclusion

Citizen Science can be a great way of inspiring and engaging visitors, local communities, and schools in conservation efforts and science. The data collected by volunteers can be instrumental for protected area officials to make sensible decisions as citizen science can measure progress on protected area programs and monitor areas and organisms. Properly designed projects can also inform decision-making to address regional, national and global challenges. Citizen science projects should be designed with clear goals, like establishing local partnerships, creating engaging experiences and providing valuable data for local, regional, national or global decision-making. , Appropriate materials and training must be provided to support the number of individuals participating and ensure the accuracy of data collected by volunteers.

Citizen Science Programs in Protected Areas

Demonstration Examples

1. Citizen Science Programs in U.S. National Parks and Protected Areas

a.   National Park Service

The National Park Service encourages citizen science in national parks as it brings a series of unique hands-on experiences to park visitors. Working alongside fellow visitors, rangers, and scientists, visitors directly contribute to collecting useful data. These programs complement information a person learns independently or in classes by allowing participants to engage directly in developing information that impacts their community. A few examples:

Teacher-Ranger-Teacher Program: During a six-week course over the summer, teachers work alongside rangers to carry out duties relating to their interests and park needs. These duties could include staffing the visitor center desk, reviewing existing or developing new curriculum-based education materials, or undertaking special projects. Afterward, the teacher brings the knowledge and experiences they gathered to formulate lesson plans for their classes.

Great Smoky Mountains National Park Species SnapIt and MapIt: Volunteers download the iNaturalist app and its guide on what species the survey is targeting. Then, when volunteers observe a targeted species, they take a picture of the organism, upload it through the app or inaturalist.org and note its name and location.

Walking With Wildflowers: Monitoring Pacific Crest Trail Plant Communities as Climate Changes: From July to September, volunteers visit a predetermined phenology site that contains ~20 tagged plants, which could include 19 species of surveyed wildflowers, shrubs, and trees. Volunteers record whether the tagged specimen is flowering and the number of open flowers on plants in Nature's Notebook App on the volunteers' phone.

b.   U.S Fish and Wildlife Service

The Fish and Wildlife Service (FWS) supports citizen science projects covering a broad range of topics, geographic areas, and collection and monitoring strategies. FWS citizen science projects create an opportunity for young people to connect to and learn about fauna and their habitats, gain science skills, and learn about animal adaptations. Examples include:

eBird Trail Tracker: In 12 national wildlife refuges, eBird Trail Tracker terminals have been placed to inform visitors of the types of birds they might see during their visit and encourage them to report bird sightings after their visit. Observations that visitors record through the terminal are uploaded to the eBird website.

Mayfly Watch campaign: Mayflies are an essential food source for fish in the Mississippi river but can create public hazards when millions of mayflies emerge each spring. Volunteers join Nature's Notebook to record observations at either an observation deck or at one of the preselected pool sites. Volunteers then record their observations within 5-10 feet of where they were standing, following the instructions for mayflies or giant mayflies for several minutes.

c.   Bureau of Land Management

BLM works with citizen scientists to learn about public lands by monitoring, mapping, and otherwise documenting resource conditions and trends. For example, BLM engaged citizen scientists in a raptor research expedition to tag and record the size and weight of owl chicks at nesting sites in the Snake River Birds of Prey National Conservation Area in Idaho

d.   U.S. Forest Service

The U.S. Department of Agriculture's Forest Service uses citizen science projects in U.S. National Forests to inform management and decision making and connect its work to the public it serves. A wide variety of citizen science projects include studies of butterflies, dragonflies, watershed health, and trees. Volunteers help the Service fulfill its mission by collecting data it could not collect on its own and bring new and innovative ideas to resource management. For example, the Forest Service's Water Quality Monitoring in Alabama's National Forests teaches volunteers methods for detecting E. coli and other coliforms in water bodies and testing waters for pH levels, turbidity, dissolved oxygen, alkalinity, and hardness.

e.   National Oceanographic and Atmospheric Administration – Marine Sanctuaries

BeachCOMBERS uses trained volunteers to survey beached marine birds and mammals as an index of the Monterey Bay National Marine Sanctuary's (MBNMS) health. NOAA partners with California's Department of Fish and Wildlife (CDFW), the U.S. Geological Survey, and local research institutions. Trained volunteers search selected beaches for bird and mammal carcasses and note the cause of death (entanglement of nets, fishing line, oil). This project provides data for scientific papers and contributes to the conservation of sanctuary resources.

2. Citizen Science Efforts with Potential Application in Protected Areas:

a.   Global Earth Challenge

 Launched by Earth Day Network, in partnership with the U.S. Department of State and the Wilson Center on Earth Day 2020, the Global Earth Challenge engages citizens with citizen science programs and educational materials to bring awareness to Earth's plight. Earth Day Network supports new and ongoing citizen science projects all over the world.   Global Earth Challenge connects, builds, and enables global communities to leverage the power of scientific research to drive meaningful change. Participants use the Earth Challenge mobile app to collect billions of data and observations in air quality, water quality, insect populations, climate change,

plastic pollution, and food sustainability, providing valuable environmental insight and a platform for policy change in these areas.

For example, the Global Earth Challenge™ Insect Population program has volunteers measure local bee diversity by taking pictures of bees they come across in their daily lives. Once they take their photos, they upload them onto the Earth Challenge mobile app, where they document the species of bees and their location. Volunteers also help other volunteers identify bee species they uploaded.

b.   GLOBE Program

The Global Learning and Observations to Benefit the Environment (GLOBE) program is sponsored by the U.S. National Aeronautics and Space Administration (NASA), National Oceanographic and Atmospheric Administration (NOAA), Department of State, and the National Science Foundation (NSF). GLOBE works with schools (K-12 and beyond) worldwide to train teachers and engage students in data collection to improve understanding of the using protocols developed by the scientific community and validated by teachers. In the Republic of Georgia, (Georgia) the Caucasus Environmental NGO Network and the Georgian Ministry of Education, Science, Culture, and Sport have participated in GLOBE program projects.

For example, participants in the Trees Around the GLOBE Student Research Campaign follow guidelines for taking biometry tree height measurements using common protocols. After they record their measurements, they submit their data through GLOBE's data entry page. Teachers whose students participate in the program collaborate with other GLOBE affiliated schools and present their measurements at a campaign webinar.

c.   Humanitarian OpenStreetMap Team (HOT) and YouthMappers

The Humanitarian OpenStreetMap Team (HOT) trains and engages citizen volunteers to use satellite, aerial, and drone imagery and ground observations to build maps showing roads, buildings, and natural features in under-mapped areas, on the open-source OpenStreetMaps platform. HOT's mapping projects help monitor changes in environmental elements such as coastal erosion, wetlands, and local biodiversity to tackle climate change, flooding, and sustainable livelihoods. YouthMappers, funded by the U.S. Agency for International Development, has built a network of chapters at universities worldwide to support HOT remote mapping tasks. HOT and YouthMappers often host "mapathons," engaging students in developing maps of vulnerable and high-priority areas while imparting skills in demand in today's economy. While HOT and YouthMappers are not currently engaged in Georgia, engaging citizens in open mapping projects can help identify important natural (e.g., water bodies and forest cover) and artificial features in both urban and remote protected areas. The features include human settlement impacts, proximity to disadvantaged or marginalized communities, land-use changes, natural disasters, and crime and violence incidents.

d.   The Community Collaborative Rain, Hail, and Snow Network (CoCoRaHS)

Sponsored by NOAA and NSF, CoCoRaHS is a nationwide non-profit, community-based network of volunteers of all ages and backgrounds working together to measure and map precipitation (rain, hail, and snow).   By using low-cost measurement tools, stressing training and education, and utilizing an interactive website, the group provides high-quality data for natural resources, education, and research applications. For example, each time it hails, rains, or snows, volunteers note how much precipitation fell in their area and report their measurements on CoCoRaHS's website.

e.   iNaturalist

iNaturalist is a joint initiative by the California Academy of Science and the National Geographic Society that allows millions of volunteers worldwide to assist scientists and naturalists. Using an interactive website and app and letting volunteers use their mobile devices, volunteers collect, record, and crowdsource their observations for projects that monitor, measure, and map plants and animals. Projects started by iNaturalist members can be either a traditional collection or an umbrella collection that can be used to compare statistics across two or more projects.

For example, the California Fire Followers 2020 encompasses 29 projects that each correspond to a 2020 wildfire. Participants take pictures to record plant growth in areas affected during the 2020 fire season and upload them to the iNaturalist website or app. Afterward, participants identify the plant and collaborate with others to review other participant's uploads.

f.   eBird

eBird is one of the world's largest biodiversity-related science projects where birders can upload bird sightings, review other volunteers' uploads, and read information regarding a species movement, abundance, and general information. eBird has seen worldwide participation grow at about 20% each year, and in Georgia, there are 360 entries with about 407 participants.

Choosing and Engaging with Citizen-Generated Data

Global Partnership for Sustainable Development Data

Best Practice Recommendations

The Global Partnership for Sustainable Development Data's (GPSDD's) Choosing and Engaging with Citizen-Generated Data Guide identifies a number of steps that are worthy of consideration in designing a citizen science project in national protected areas. Among them, the Guide emphasizes the following:

Step 1: Define the goals and scope of your intervention

What is your priority when engaging people? CGD efforts, including citizen science, can have multiple goals, including, for example:

- Educate
- Engage with communities
- Gather baseline data
- Help manage services and interventions
- Define policy
- Inform research
- Monitor performance
- Make regulatory decisions

Scoping a citizen science project should be done with clarity as to the purpose of the effort. What is your question or problem? Data stocktaking is an important part of this step: What information are you lacking to address the problem, and how could the public help gather it?

Step 2: Clarify what CGD approach is useful for your purpose

Key questions include:

- How can citizens generate data? Examples include: On-site observations; Surveys; Sample collection and measurement; Audio-visual recording; Group deliberation; Classifying / tagging; Compiling; Triangulation; Pattern recognition
- How much data is needed to generate sufficient insights, and over what time-period?
- What tools do you plan to use for gathering data?

Fitness for purpose means data is relevant and *usable enough* to provide answers to a particular problem. Data can have many "qualities" which add up to make it a sufficiently useful dataset, including: Representativity; Reliability; Trustworthiness; Relevance; Completeness; Granularity; Timeliness; Interoperability; and Representational Consistency.

Step 3: Clarify how the participation of people will help.

Key questions include:

- Who are the target audiences of your project?
- How do you reach out to people?
- What is the adequate depth of participation?
- What motivates your audience?
- How do country culture and socio-economic factors influence your engagement?
- Can CGD build on existing participatory channels in your government?
- How open or closed should your project be?
- How many contributors do you need?

Step 4: What resources are available to support CGD?

Key questions include:

- How much work will the coordination and facilitation of partnerships require?
- How much support (e.g., financial, staffing) is needed during data collection?
- What tools do you plan to use for gathering data?
- Tool acquisition and maintenance - what costs will be incurred?
- Which funding sources are available to your audiences?
- How much data is needed to generate sufficient insights?

The Guide also recommends thoughtful consideration of whether it is important that the data generated be made public or shared with others, and considerations of risks that citizens might incur in collecting data.

Project Phase 2.3 – Briefing Paper, Cooperating Associations

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I.   Introduction

Cooperating associations are nonprofit charitable 501 (c)(3) organizations dedicated to enhancing the work of federal public land agencies. Individually or collectively, these associations represent hundreds to thousands of members and donors that provide critical funding for educational and interpretive programs that would be challenging for agencies to implement independently of their support.

Associations contribute millions of dollars to fund critical staff positions, exhibits, visitor centers, junior ranger and nature walk programs, living history demonstrations, special events and many other projects. Associations have resulted in some of the most dynamic, successful, and productive partnerships within the Bureau of Land Management. For example, cooperating associations working with the BLM California Desert District (CDD) throughout southern California provide a variety of capacities ranging from supporting educational, historical, and interpretive programs to assisting with land acquisitions. In addition, hundreds of special events that occur throughout the year in southern California and the CDD are due to the dedicated partnerships between cooperating associations, Department/BLM staff and volunteers.

Cooperating associations are a means to build, and support organized local community stewardship through the development of partnerships. They help foster collaborative partnerships with local, city and county communities, elected officials, stakeholders, and Tribal representatives because they can forgo the complex Federal government-to-government process and invite the Tribes to participate in these kinds of partnership endeavors/initiatives. In collaboration with the BLM, associations can help expand BLM partnerships with the capabilities and commitment of being part of a collaborative initiative to share resources and expertise and leverage limited funding. Collectively, BLM CDD-Association partnerships have helped to create seamless management across public, private, and BLM-managed public lands/National Conservation Lands, and build consensus at local, county, state, and federal levels to analyze proposed management actions, and identify and mitigate potential issues.

II.   Overview, Discussion, Demonstration Examples

A. The Wildlands Conservancy

Cooperating Associations, such as The Wildlands Conservancy (TWC), bring vision and determination that anything is achievable when political rhetoric is put aside to protect and

preserve the legacy of our Nation's lands. The Wildlands Conservancy owns, manages, and protects more than twenty nature preserves that compose California's largest nonprofit Nature Preserve System.

To encourage our nation's western expansion, in 1864 Congress gave the railroad every other section of public land in a 50-mile swath along what are now Interstate 40 and Route 66 between Barstow and Needles, California. These railroad inholdings represented some of the most pristine and scenic desert lands in the world, with their cinder cones and lava flows, spectacular ranges of rocks, flowing sand dunes, vast valleys, and intriguing cactus gardens. Private sale of these lands would have severely impacted the biological and aesthetic integrity, as well as recreational access for more than 4 million acres of public lands, due to the checker-boarded configuration of the lands owned by Catellus Development Corporation, the parent company of SF Pacific Properties (see Figure 1).
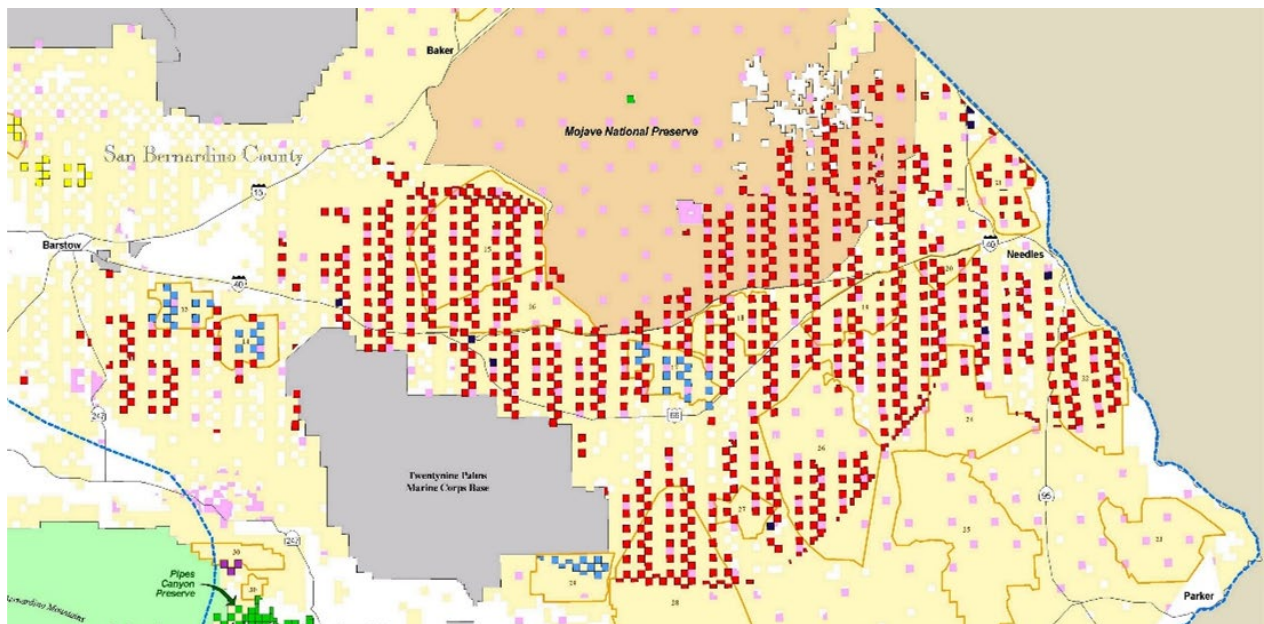
Between 1999 and 2004, The Wildlands Conservancy acquired more than 587,000 acres from Catellus for $18 million and donated the land to the Department of the Interior (DOI). TWC's acquisition is the largest nonprofit land acquisition donated to the American people in U.S. history. DOI also acquired more than 405,000 acres with $15 million in Land and Water Conservation Fund and private monies gifted by TWC's Wildlands Endowment Fund.

Most all of the Catellus and DOI lands were encompassed in the Mojave Trails National Monument, created by President Obama by Presidential Proclamation on February 12, 2016, and encompassed 1.6 million acres (650,000 ha) (see Figure 2).
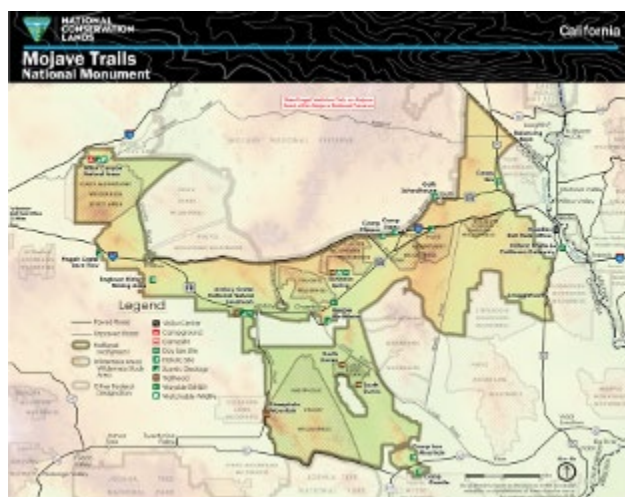
Figure 2

Cooperating associations recognize the public as an important resource for the preservation of public land and help citizens to better understand land management issues by providing information and services in visitor centers and public events. By doing so, cooperating associations contribute to the understanding of a variety of stewardship issues, cultivate an appreciation of public lands, and help reduce adverse impacts on natural, cultural, historic, and prehistoric resources. The BLM began working with cooperating associations in 1980, and currently works with dozens of cooperating associations in all twelve western States.

   B. California Historic Route 66 Association

The California Historic Route 66 Association (CHR66A) is a nonprofit 501 (c)(3) organization dedicated to the preservation, promotion, and enjoyment of Historic Route 66 in California. There are eight such organizations in each of the Route 66 states: Illinois, Missouri, Kansas, Oklahoma, Texas, New Mexico, Arizona, and California. The Associations are independent of one another and CHR66A is the youngest. Its history coincides with December 1990, when the California legislature designated Route 66 as a "State Historic Route 66 Highway". This legislation made signage permissible for the previously decommissioned federal highway.

CHR66A was instrumental in designing historic signs and coordinating with the California Transportation Authority (Caltrans) and installing directional signs to guide travelers to Route 66 from Interstate Highways 40 and 15. They produced and erected the earliest historic signs which, unfortunately, were stolen almost immediately. From there it was up to CHR66A to encourage Route 66 communities, businesses, or individuals to purchase and erect signs.

CHR66A initiated discussions with California State Highways regarding the process to get the 155-mile segment of California Historic Route 66 from Needles to Barstow, California designated a National Scenic Byway (NSB). CHR66A then initiated an Association agreement with the BLM's California Desert District. Approximately 155 miles of the California Historic

Route 66 crosses BLM-managed public lands within the California Desert District from Needles Barstow, and the BLM's participation in CMP planning process would be essential.

In 2011, the BLM worked closely with the CHR66A and California Preservation Foundation to co-write a grant proposal for a Department of Transportation, Federal Highway Administration, National Scenic Byway Program grant. The BLM and CHR66A would prepare a Corridor Management Plan (CMP) for the 155-mile segment of California Historic Route 66 between Needles and Barstow, California (see Figure 3). The CMP is a mandatory document that describes in detail how this segment of Route 66 assets (e.g., signs, buildings, etc.) would be managed, preserved, protected, and restored for present and future Route 66 enthusiasts.
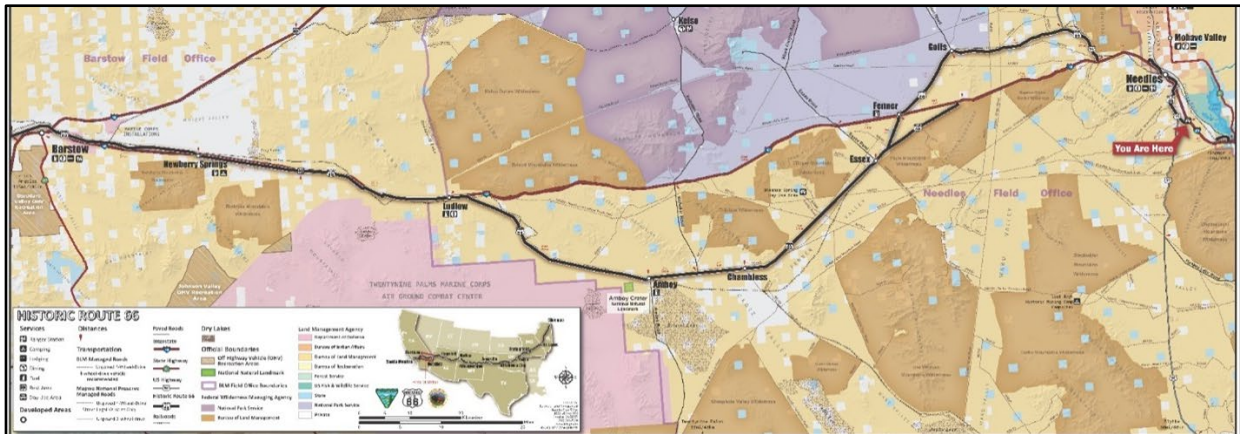
On August 27, 2012, U.S. Department of Transportation's Federal Highway Administration awarded the BLM and CHR66A a $152,300 grant under the National Scenic Byways Program to fund the preparation of a CMP. In June 2013, the former BLM California State Director assigned a BLM California Route 66 Program Lead to represent the BLM and assist in the preparation of the CMP. The BLM and CHR66A issued a Statement of Work for the project. After reviewing and evaluating all the submissions the BLM and CHR66A awarded the contract to Lardner-Klein Landscape Architects in September 2013.

The BLM and CHR66A formed an Executive Team: the BLM California Route 66 Program Lead, CHR66A Board members, and contract specialists. The BLM wrote and reviewed all BLM-related materials regarding public lands and researched and provided CHR66A and the contractor CDD maps, photographs, and planning documents as requested. The BLM Lead formed a cadre of BLM District, State and Washington Office managers and specialists who assisted in the review and approval of all BLM-related materials in the draft CMP. The BLM Program Lead, also a Public Affairs Specialist, wrote and coordinated all public and media outreach. In coordination with the BLM and the contractor, CHR66A members served as liaison with local, county and state and Federal representatives, elected officials, members of Congress and the state legislature, and stakeholders throughout the planning area and the state.
In December 2013, CHR66A hosted a two-day orientation bus tour of this segment of Route 66 and the adjacent public lands for the contractors and local, county, and state officials and

stakeholders. The Route 66 Historian with San Bernardino County was invited to serve as host for the tour.

Upon completion of the CMP, the BLM and CHR66A would submit a nomination package to the Secretary of the Department of Transportation for consideration to designate this California segment of Route 66 as an NSB. Currently, portions of Route 66 in Arizona, Illinois, New Mexico, and Oklahoma have NSB designations.

The CMP would provide travel information to domestic and international visitors about the intrinsic values of the history, culture, and natural landscapes, as well as recreational opportunities available on BLM-managed public lands adjacent to the corridor. The CMP also would include a comprehensive interpretive, Tourism and Marketing Strategy to enhance sustainable heritage tourism opportunities to promote and provide economic benefits to desert communities, local businesses, and the County of San Bernardino.

FIGURE SEQ FIGURE * ARABIC 4: BUS TOUR PARTICIPANTS AT THE HISTORIC ROY'S CAFÉ IN AMBOY. PHOTO: DORAN SANCHEZ, BLM ROUTE 66 PROGRAM LEAD.

The BLM and CHR66A oversaw preparation of the CMP and with extensive coordination and collaboration with Lardner-Klein Landscape Architects and participation from local, county, state and federal stakeholders and partners that participated in the development of the CMP, including Native American Tribes. This ensured all issues and concerns of the County, cities, and desert communities were addressed and resolved, and that the CMP did not impact County right-of-way or jurisdiction to provide ongoing repairs to the road and bridges. The BLM Program Lead also had a face-to-face briefing and presentation to a consortium of 22 tribes from throughout southern California who concurred with a NSB designation for the Route. The BLM and CHR66A would keep the Chairperson apprised of activities throughout the planning process.

C. California Historic Route 66

Designated a national highway in November 1926, U.S. Route 66 extends 2,448 miles across 8 states and 3 time zones from Chicago, IL to Santa Monica, California. The "Mother Road" essentially consists of connecting many existing roads, with some new road construction to complete a continuous route. The road was immortalized by Bobby Troupe's song "Get Your Kicks on Route 66."

Route 66 is a county-maintained road and right-of-way, and the BLM has no jurisdiction over the road. The BLM's jurisdictional concerns are specific to the public lands adjacent Route 66, and how these public lands would not be impacted by increased traffic when and if this section of Route 66 was designated an NSB.

County of San Bernardino

1. Route 66 is a county-maintained road and right-of-way.
2. More than 250 miles of Route 66 are in San Bernardino County.
3. The section of Route 66 across the Mojave Desert has more than 130 wood trestle bridges.
4. The bridges are more than 90 years old, and many are severely damaged by flash floods.
5. Repair costs of the bridges are estimated at more than $30 million.
6. BLM and CHR66A have written the County letters of support for emergency funding.
7. The County's collaboration in the development of the CMP was essential.

Jurisdictions/Partners/Stakeholders
1. California Department of Transportation
2. City of Barstow
3. City of Needles
4. State Historic Preservation Office

AD HOC Planning Committee Members
1. BLM.
2. CHR66A.
3. National Park Service.
4. County and municipal communities.
5. State and Federal agencies.
6. Non-governmental organizations.
7. Stakeholders with interest in Route 66.

CMP Goals
1. Preserve the iconic legacy of Route 66.
2. Protect cultural and historical resources.
3. Promote sustainable heritage tourism.
4. Stimulate economic growth.
5. Enhance public safety.
6. Preserve BLM-managed public lands and National Conservation Lands (National Monuments, Wilderness Areas, Areas of Critical Environmental Concern).

CMP Schedule
1. December 2013, CHR66A hosted Route 66 orientation field tour for contractors & stakeholders.
2. Week of February 24, 2014.public meetings in Barstow and Needles.
3. Four webcasts scheduled throughout 2014 to solicit public comment on specific topics:

CMP Webcasts
1. Four webcasts held in 2014 to solicit public comment on specific topics:
    1. April 28: Route 66's Intrinsic Qualities and Stewardship.
    2. May 22: Visitor Experience.
    3. August 28: Transportation.

4. October 30: Marketing and Heritage Tourism Development.
2. Utilized Ad Hoc Committee to maximize outreach and effectiveness of webcasts.
3. Provided ongoing notice/outreach to publicize webcasts.
4. More than 200 stakeholders participated in webcasts.

Draft Route 66 CMP Public Review
1. January 2015, released Draft CMP.
    a. 30-day public review and comment.
2. February 2015, webcast to solicit public comment.
3. May 2015, published Draft Route 66 CMP
    a. 30-day public comments
    b. CMP Executive Team responded to every comment.
4. July 2015, release Final Draft Route 66 CMP.
5. 18 months comprehensive collaboration with partners, stakeholders, elected officials, etc.
6. Scheduled briefings with elected officials, partners, and stakeholders.
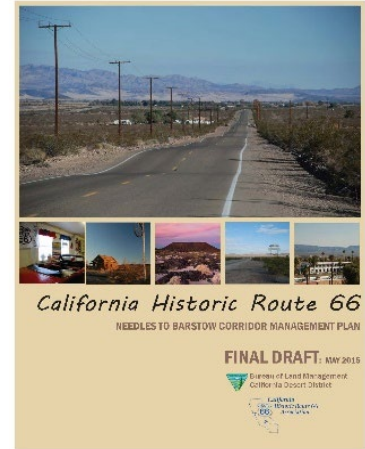
Congress had not funded Federal Highway's National Scenic Byways Program since 2012. The BLM and CHR66A continued to pursue endorsements of the CMP through events, resolutions and gateway partnerships with the cities of Needles and Barstow and San Bernardino County.

Route 66 CMP Resolutions
1. 8-11-2015: Needles City Council unanimously passed a resolution to adopt the Route 66 Corridor Management Plan (CMP) (copy attached).
2. 9-8-2015: Barstow City Council unanimously passed a resolution to adopt the Route 66 CMP (copy attached).
3. 10-1-2015: former CDD District Manager signed a letter to CHR66A President endorsing the Route 66 CMP (copy attached).
4. 12-15-2015: San Bernardino County Board of Supervisors unanimously passed resolution to adopt the Route 66 CMP (copy attached)
5.
**Route 66 Gateway Memorandums of Understanding (MOU) Partnerships**
1. 4-7-2016: former CDD District Manager signed Route 66 Gateway MOU with the City of Needles (copy attached).
2. 4-13-2016: former CDD District Manager signed Route 66 Gateway MOU with the City of Barstow (copy attached).

The MOUs formally renewed Gateway Partnerships between the BLM and the cities of Needles and Barstow to assist in the management and administration of an external outreach strategy to enhance public awareness of the California Historic Route 66 National Scenic Byway (NSB) between Needles and Barstow, California, promote the Mojave Trails National Monument (MTNM), and stimulate the preservation and protection of cultural, natural, historical and natural

resources located on Route 66, and encourage recreation opportunities on BLM-managed public lands/National Conservation Lands within and adjacent to the MTNM.

CHR66A-BLM Route 66 Economic Development Symposium

To build upon the success and momentum of the Route 66 CMP resolutions and Gateway MOUs, CHR66A in collaboration/partnership with the BLM sponsored the first ever Economic Development Symposium on May 18, 2016, at the Ramada Inn, located on Historic Route 66 in Barstow. Guest speakers from across the United States shared their experiences and expertise regarding how the cities, towns and counties can work together to tap into Route 66's boundless economic tourism potential and utilize existing grant opportunities to fund Route 66 revitalization opportunities and programs.
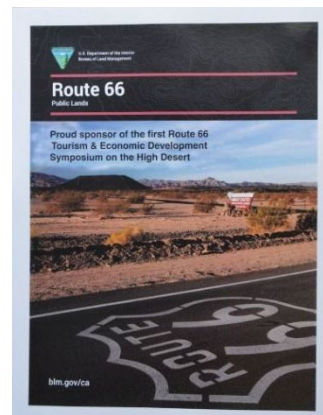
Experts from the tourism industry provided insight on how California communities can develop dynamic tourism portfolios to attract national and international visitors. Discussions also recommended strategies on how to promote Route 66 attractions, including museums, historic buildings, and other community attractions to enhance tourism development opportunities.

Route 66 Tourism and Economic Symposium Attracts Sold Out Crowd

More than 100 representatives from throughout southern California attended the Route 66 Tourism and Economic Development Symposium. Guest speakers from Illinois and New Mexico shared heartfelt experiences and success stories in how they transformed their fading Route 66 community into a major tourism attraction. They also provided insight into how local cities and counties can tap into California Route 66's tourism and economic potential.

In a letter, California State Senate Republican Leader Jean Fuller wrote, "events like the symposium to discuss economic development and tourism, and ways to enhance the Route 66 experience will add to the appeal of the historic route and improve the economic conditions of communities located alongside and near this iconic roadway" (attached).

BLM California State Director Jerome (Jerry) Perez wrote the Symposium is a critical component of how we can work together to protect and preserve Route 66, promote sustainable heritage tourism, and utilize Adjacent BLM National Conservation Lands and other BLM-managed public lands to further enhance economic development opportunities for local communities, San Bernardino County, and the State of California (attached).

Symposium participants also had the opportunity meet and talk with BLM managers and staff from the Barstow and Needles Field Offices and Desert District Office, who provided information about the CDD's Discover the Desert initiative, the new Mojave Trails National Monuments, and the Desert Discovery Center in Barstow.

Military Convoy

The BLM and CHR66A continued to implement the marketing and outreach goals identified in the CMP to promote Route 66 and BLM-managed public lands/National Conservation Lands. In August 2017, the BLM Project Lead and CHR66A Board members invited the City of Needles Mayor and City Council, the Needles Chamber of Commerce, Business Association, local veterans' groups, stakeholders, and County Supervisor to help organize a reception and welcoming ceremony for the Military Vehicle Preservation Association after the MVPA announced their Route 66 Highway Convoy from Chicago to Santa Monica.

Military Vehicle Preservation Association Convoy

Established in 1976, the non-profit Military Vehicle Preservation Association (MVPA) is an international organization for military vehicle enthusiasts, historians and collectors interested in the acquisition, restoration, preservation, and public education of historic military transport. The MVPA has 8,000 members worldwide, including 100 affiliate groups around the world.

After traveling more than 2,000 miles from Chicago, the MVPA convoy of more than 45 historic military vehicles rolled into Needles, California on Monday, October 10, 2017. The convoy, celebrating the 91st anniversary of the dedication of U.S. Highway 66/Route 66, was greeted to a hero's welcome by the City of Needles, local and county elected officials, veterans' groups, the BLM's California Desert District and CHR66A staff.

The convoy paid tribute to America's war veterans, celebrated the military history of General George Patton, the founding of the Desert Training Center (DTC), the contributions of Route 66, and BLM-managed public lands during World War II. The convoy followed the original Route 66 alignment across BLM-managed public lands in the Mojave Desert from Needles to Barstow, enroute to its destination in Santa Monica.

FIGURE SEQ FIGURE * ARABIC 6: MILITARY CONVOY. PHOTOS: DORAN SANCHEZ, BLM

Note: In February 1942, General George S. Patton Jr. established the boundary of the Desert Training Center (DTC) to train U.S. soldiers in tank warfare for combat under the harshest desert conditions possible. The DTC encompassed 18,000 square miles of rugged, desolate and largely uninhabited terrain within the Mojave and Colorado Deserts in southern California, western Arizona, and southern Nevada, making it the largest military installation and maneuver area in the world.

Patton identified sites for twelve divisional camps, which were massive tent cities laid out in grids, and measured up to three miles long, a mile wide, and could house more than 15,000 soldiers at a time. The convoy helped visitors and veterans take a trip back in time when more than one million young American soldiers trained at the DTC.

California Historic Route 66 National Scenic Byway

Upon completion of the CMP, the BLM and CHR66A planned to submit a nomination package to the Secretary of the Department of Transportation for consideration to designate the California segment of Route 66 from Needles to Barstow a National Scenic Byway (NSB). Currently portions of Route 66 in Arizona, Illinois, New Mexico, and Oklahoma have NSB designation.

However, Congress did not fund the U.S. Highway's National Scenic Byway Program since 2012. The eight Route 66 Associations worked with their Congressional representatives and the National Associations of Counties (NACo) to restore funding. The NACo is the only national organization that represents county governments in the United States.

1. The eight Route 66 State Associations and a coalition of national recreation organizations worked with their Members of Congress and NACo to get the funding restored.
2. Former President Trump signed the Reviving America's Scenic Byways Act September 26, 2019.
3. The new law required the Secretary of Transportation to start the application process for new byways within 90 days and to designate a round of new National Scenic Byways within one year.

4. The BLM and CHR66A prepared and submitted a nomination package to Federal Highways in March 1920.

BLM and CHR66A staff collaborated with the California Desert District Manager and staff and volunteered to write and submit the nomination package but requested District GIS help to prepare a map. The BLM and CHR66A staff contacted constituents across and throughout southern California. CHR66A's liaison also solicited letters from the National Route 66 Associations.

Collectively, they received more than 60 letters of support, did the site write-ups, wrote the 508 compliances for all the photos, and submitted the package. The CHR66A liaison coordinated with the State and National NSB Program Leads to ensure the CDD package was complete and tracked the package almost daily.

On February 24, 2021, CHR66A and the BLM were notified by the U.S. Department of Transportation, Federal Highway Administration's National Scenic Byway Program that the segment of California Historic Route 66 between Needles and Barstow, California had been designated a National Scenic Byway (2-24-2021: BLM-CDD News Release: Historic Route 66 in California receives National Scenic Byway (NSB) Status).

III. Conclusions and Universal Best Practices

The Route 66 dedication is just one example of the role cooperating agencies, such as CHR66A, can make for public lands management. The thorough preparation of the CMP, which involved hundreds of presentations, briefings, and reviews to ensure the BLM, CHR66A, and the contractor correctly captured the true intent of each commentor's thought, is why the CMP was universally accepted. It is challenging to quantify the rewards, accomplishments and most importantly the extraordinary partnership and friendship CHR66A has brought to the BLM, California desert communities, the County, and stakeholders throughout southern California.

CHR66A has been at the forefront to build, support and organize local community stewardship through the development of partnerships with area resource managers, elected officials, stakeholders, and local Tribes. The symposium, military convoy, and national scenic byway designation represents more than 200 similar/high-profile events that CHR66A, in cooperation with the BLM, has planned and implemented, which has earned them great respect from our stakeholders and partners. CHR66A has contributed thousands of hours of work and expertise to support the BLM, the CMP, and the California Historic Route 66 National Scenic Byway.

The BLM's Association collaborations represents hundreds of partnerships that DOI's natural resource agencies have established over many decades and played critical roles in the management, protection, and preservation of our public lands. Most importantly, they continue to

serve as models as other DOI natural resource agencies move forward to establish new national and international partnerships.

IV.   **References** –documents not cited are not published on the web – copies attached

- ROUTE 66 CORRIDOR MANAGEMENT PLAN, FINAL DRAFT: HTTPS://ROUTE66CA.ORG/WP-CONTENT/UPLOADS/2016/03/COMPLETE-CMP-DOCUMENT.PDF
- RESOLUTION, CITY OF BARSTOW
- RESOLUTION, CITY OF NEEDLES
- RESOLUTION, SAN BERNARDINO COUNTY BOARD OF SUPERVISORS
- CITY OF NEEDLES, ROUTE 66 MEMORANDUM OF UNDERSTANDING
- CITY OF BARSTOW, ROUTE 66 MEMORANDUM OF UNDERSTANDING:
- REVIVING AMERICA'S SCENIC BYWAYS ACT OF 2019: https://www.govinfo.gov/content/pkg/CRPT-116srpt61/html/CRPT-116srpt61.htm
- 2-24-2021, Historic Route 66 in California Receives National Scenic Byway Status; https://www.blm.gov/press-release/historic-route-66-california-receives-national-scenic-byway-status

DEPARTMENT OF THE INTERIOR – INTERNATIONAL TECHNICAL ASSISTANCE PROGRAM
GEORGIA PROTECTED AREAS POLICY REVIEW
SUBGROUP: PUBLIC OUTREACH & ENVIRONMENTAL EDUCATION
12/30/22

Project Phase 2.3 – Briefing Paper, Gateway Partnerships
LEAD AUTHOR: DORAN SANCHEZ
TEAM MEMBERS: SANDY RABINOWITCH, ANDREA SHARON, CORKY HAYES, BOB DANLEY

I. Introduction

Key to the successful management of Bureau of Land Management (BLM) public lands and National Conservation Lands (wilderness areas, national monuments, Areas of Critical Environmental Concern, national trails, wild and scenic rivers, etc.) is the development of effective community involvement and a sense of community "ownership." The primary means to accomplish this is the establishment and implementation of "Gateways." The BLM has utilized Gateways for decades as a means to build public support, community ownership, stewardship and preservation of fragile public land natural resources. Gateways provide a sense of place for users and links it with local communities.

Gateways can be areas, towns, cities, communities, or specific locations that are ideal for providing visitor information and services and have the infrastructure and interest in serving in this capacity. Each Gateway is also the vehicle to establish a local "flavor" for a specific portion of the resource and provide local stewardship.

Gateway partnerships utilize the principles of geotourism, that is - tourism that sustains or enhances the geographical character of a place, including its environment, culture, aesthetics, heritage, and the well-being of its residents. Gateways provide the foundation to build community-based conservation and sustainable heritage tourism for the BLM and the nation.

Gateway partnerships are a means to support organized local stewardship through the development of a consortium of the area's resource managers and advocates; enhance partners' capabilities by being part of a collaborative initiative to share resources and expertise; leverage limited funding; create seamless management; and consolidate local, state, federal and Congressional support for special management areas.

II. Overview, Discussion, Demonstration Examples

On January 11, 2000, President Bill Clinton established the California Coastal National Monument (CCNM) under the authority of the Antiquities Act of 1906. The Monument protects all unappropriated or unreserved lands and interest in the lands owned or controlled by the United States, including more than 20,000 offshore islands, rocks, exposed reefs, and pinnacles above mean high tide within 12 nautical miles of the shoreline. As of 2014, the monument has expanded to 2,272 acres (919 ha).

The CCNM encompasses 840 miles (1,350 km) of the California Coastline from Oregon to Mexico. It protects and preserves critical habitat for hundreds of sensitive, threatened, and endangered plant species, thousands of otters, seals, sea lions and other mammals, and hundreds of thousands of seabirds. The BLM, California Department of Fish and Game, and California Department of Parks and Recreation signed a memorandum of understanding (MOU) in June 2000, to collaborate on the management of the CCNM.

The BLM completed the CCNM Resource Management Plan (RMP) in September 2005. The Plan established the management framework for the CCNM, outlining goals and objectives, management actions to be implemented over the next 15 to 20 years that would focus on preservation (management – protection, research education, planning), landscape (ecosystem – abiotic, biotic cultural), partnerships (Core-managing partners, collaborative partners, Stewards), and Communities (CCNM gateways, Gateway Communities, local stewardship, local involvement. The RMP also identified six implementation priorities.

1. Protect CCNM resources and resource values.
2. Conduct, maintain, and update the CCNM Site Characterization Study and Survey.
3. Develop and implement a Seabird Conservation initiative.
4. Initiate and maintain a Tidepool Connections network.
5. Develop and maintain partnerships:
    1. Core-Managing Partners: Agencies that collaborate on management.
    2. Collaborative Partner: An organization, governmental or private, that is interested in collaborating with the core-managing partners in any of a variety of programs, actions, and management elements associated with the long-term management of the CCNM.
    3. Steward: A select entity with ownership and management responsibility for a specific portion of the coast that adjoins part of the CCNM and that is interested in serving as the "steward" for that portion of CCNM.
6. Establish and support a series of "CCNM Gateways".
    1. Gateways provide a sense of place.
    2. Serve as visitor contact locations.
    3. Promote community involvement.
    4. Link with local initiatives and conservation.
    5. Create partnerships to protect coastal resources.

CCNM Gateway Partnerships

Because of its scope, the only effective way to manage the CCNM is through partnerships. The CCNM is located adjacent to or embedded within many federal, state, county and city lands as well as tribal and other privately owned lands. In addition, California manages approximately thirty percent of California's coastline that includes premier coastal wetlands, estuaries, beaches, and dune systems. The BLM manages the monument, which includes 2,272 acres (919 ha) and extends the entire length of the State's coastline. The coastline area attracts tens of thousands of

national and international visitors annually and provides billions of tourism dollars to local communities.

The RMP stated goals included using the CCNM to help enhance cooperative and collaborative partnerships and gateway initiatives and through cooperation, collaboration, and partnerships with a variety of communities, agencies, organizations, academic institutions, the public, and other stakeholders.

The public rarely differentiates between federal or state managed lands and believes the management of these lands should be seamless irrespective of administrative boundaries. As such, the CCNM Gateways bring forth a seamless, holistic approach to the management of California's coastal resources.

CCNM Gateway Network

A key part of the management of the CCNM is the implementation of its community Gateway program as the means to develop active community involvement, which is critical to ensure the effective management of the CCNM. Gateway partnerships are a means to support organized local stewardship for shoreline regions through the development of a consortium of the area's resource managers and advocates and provides communities a forum in which to develop local projects, address local problems, and be involved in the local "participatory governance." The Resources Agency-BLM CCNM community gateways are ideal for providing visitor information and services and have the infrastructure and interest in serving in this capacity. It also is the vehicle to establish a local "flavor" for a specific portion of the CCNM and provide local stewardship of the CCNM and the area's coastal resources.

Benefits to Becoming a Gateway Partner

1. Provides an opportunity for local communities and organizations to be directly involved in the day-to-day oversight and direction of their portion of a unique national monument and to work together for the benefit of their portion of the California coast.
2. Does not limit or restrict any existing authorities of the partner.
3. No direct costs - each partner defines its level of participation.
4. Increases visibility of the community through representation in outreach efforts.
5. Relationship recognizes the long-term commitment of each partner to the stewardship of the Gateway's natural and cultural resources.
6. Partners share resources and expertise and reduce duplicating efforts for shared goals.
7. Formal status enables assistance from and collaboration with other agencies and organizations.
8. Relationships often develop into grant partnerships and funding opportunities.

CCNM Collaborative Partnerships

The BLM California State Director proposed to implement The Coastal Collaborative in coordination with the California State Resource Agencies (copy attached). The BLM and State of

California brought the Gateway, Steward and Collaborative partnerships under a single umbrella, a consortium where all the partners could continue to pursue their own missions, as well as meet and work together, to strategically plan for and implement both short and long-term goals to implement one cohesive strategy to improve the management within the Monument. The consortium expanded partnerships with the State of California and the BLM and added invaluable alliances with scientific, botanical, and research organizations to build upon successful collaborative efforts to develop, implement, and build community-based conservation and tourism heritage for the California Coast.

The CCNM collaborative partnerships provided the opportunity to develop a long-lasting network that produced substantial improvements in public service and enhanced communications and collaborative working relations between the participating agencies. This was an innovative approach that provided a wide variety of opportunities during a time of reduced budgets, increasing impacts to the coastal resources, and rising demands for visitor services. CCNM Collaborative partnerships and Gateways also helped ensure that present and future generations of Californians and Americans can continue to enjoy the economic prosperity and ecological wealth provided by BLM-managed public lands and state lands in California.

Opportunities

At the broadest level, the Coastal Collaborative is a concept of how the State of California and the BLM worked together with a united focus to achieve land stewardship and conservation objectives. For example, through the CCNM, BLM established efficient cooperative partnerships across agency boundaries and local jurisdictions to strengthen integrated management of landscape resources and provided quality service to shared publics. Coastal Gateway partnerships also align with State, BLM and DOI priority goals:

1. Collaborative strategic focus to protect, conserve and promote BLM NCLs and State Park units for the benefit of all Californians, national and international visitors.
2. Reduce agency costs by pooling human resources and property.
3. Eliminate redundant efforts.
1. Increase responsive problem solving.
2. Enhance communication between agencies and the public.
3. Provide one stop shopping to the public by reducing points of contacts.
4. Improve customer convenience and dissemination of information to our visiting publics.
5. Provide more opportunity for partner involvement.
6. Utilize innovative and coordinated local, state, Federal and nongovernmental partnerships to implement community-based collaborations to oversee and promote State and Federal special areas to benefit State and local economies.
7. Leverage employee skills and expertise across the land management agencies.
8. Enhance cross jurisdictional data collection and sharing and decision making.
9. Ensure future generations can enjoy ecological wealth and economic prosperity provided by public lands in California.

BLM California Strategic Framework

The BLM State Director employed/instituted the same standards of the Costal Collaborative into the S tate's Strategic Framework.

Sustainability

Sustainability is the result of local, state and federal partners and stakeholders working together to expand tourism, strengthen state and local economies, enhance visitor recreation opportunities throughout the state, and conserve California's treasured coastline landscapes and resources to ensure they will exist in perpetuity for present and future generations of Americans.

Conservation

Improve the environmental stewardship of the coastal resources through collaborative efforts in natural and cultural resource monitoring, watershed management, law enforcement, trail construction and maintenance, fuels reduction, habitat protection, restoration, acquisition, and oil spill prevention and response.

Community

This is about supporting community life at all levels, where the citizens of California receive benefit from the wise and strategic management of State Park land and federal public lands near them. The Coastal Collaborative can actively engage coastal communities to build upon the CCNM Gateways and programs. Gateways also can expand/create new student conservation partnerships to provide youth the opportunity to work with state and federal natural resource management agencies to see, learn about, work and recreate on public and state lands, and connect with the outdoors to help BLM and California achieve our conservation goals. The CCNM Gateways' greatest legacy may be the leadership they provide in working with the tribes, local communities, and diverse publics to build stewardship partners to help conserve California's landscape heritage.

On September 8, 2005, the Trinidad Rancheria (Humboldt County) became a CCNM Steward, and the BLM California State Director signed Record of Decision for CCNM Resource Management Plan (RMP). In March 2006, the City of Trinidad became CCNM Collaborative Partner. On April 3, 2006, the Tsurai Ancestral Society became a CCNM Collaborative Partner, and in July 2006, the Yurok Tribe became a CCNM Steward with the signing of stewardship MOU with the BLM.

During this time more than five additional Steward and Collaborative partners joined the CCNM Coast Collaboration. More importantly, In August 2015, after five years, the City of Trinidad settled a suit with the Tsurai Ancestral Society for allegedly hiring workers to cut down trees on

sacred tribal ground, and in a separate but related case, the City of Trinidad has agreed to spend $20,000 to improve the tribal heritage site, a longtime home and burial ground for a subset of the Yurok tribe.

The mission of the Trinidad Rancheria Indian Community is to preserve and promote their cultural and traditional beliefs; improve quality of life and self-sufficiency; uphold tribal sovereignty; create positive partnerships; and protect the environment in order to provide a healthy community, honor our elders, and guide our youth. As the City of Trinidad signed on as a Gateway, perhaps understanding in the CCNM Collaborative partnerships helped all the communities find the common ground.

Visitor Services and Youth

Visitor Services components of agencies work to provide visitor services, including interpretation, environmental education, and youth outreach; build stewardship values; engage youth in the outdoors; and recruit youth, including those from underserved communities, into natural resource and land management. There are numerous opportunities to expand visitor and youth services through the Great American Outdoors Act, youth education, engagement and employment initiatives, including ways to link the federal initiative with the various initiatives offered by California Fish and Game's Youth in the Outdoors and State Parks' Children in Nature.

PUBLIC LAW 116–152—AUG. 4, 2020, GREAT AMERICAN OUTDOORS ACT: https://www.congress.gov/116/plaws/publ152/PLAW-116publ152.pdf

1. ''(3) RECREATIONAL PUBLIC ACCESS.—Amounts expended from the Fund under this section shall be consistent with the requirements for recreational public access for hunting, fishing, recreational shooting, or other outdoor recreational purposes under section 200306(c).

2. 222 projects have been funded in fiscal years 2021 and 2022 with work planned in every state and multiple territories. An additional 63 projects are proposed for fiscal year 2023. Improvements will improve/create access and increase recreational opportunities for all recreation enthusiasts throughout the United States.

Tourism Marketing Goals and Objectives

Sustainable national-international tourism is a major economic contributor in California. The CCNM gateway and Collaborative partnerships provided an unprecedented State-Federal partnership opportunity to promote public lands and state parks, expand tour destinations, extend vacations, and enhance California's national-international tourism industry that ultimately provided tremendous economic benefits to state and local economies and businesses. State parks and BLM-managed public lands in California offers a broad array of recreational opportunities and tourism destinations and experiences that have additional potential to contribute significantly

to California local and state economies. Many of these areas can be found in close proximity to major transportation gateways such as San Francisco and Los Angeles.

1. Utilize existing resources to expand national and international awareness of California's State Parks and the BLM's special conservation units within the NCLs.
2. Serve as model for the BLM and Department's collaborative tourism planning process.
3. Create a legacy for the State of California, BLM California, the Bureau and the Department.

Next Steps

1. The BLM and Resource Agency of California (California Department of Fish and Game and California Department of Parks and Recreation) continue to implement objectives outlined in the MOU and RMP and expand collaborative efforts on a statewide basis.
2. The Regional Collaborative Groups tiered off the State MOU and developed an annual strategy for partnered delivery of services.
3. A Coastal Summit was held to develop the working structure of the Coastal Collaborative partnership, develop a plan of work, and identify short and long-term goals.

Conclusions and Universal Best Practices

Gateways not only are cost-effective and sustainable over time but adheres to the goals and priorities outlined in the President's and the Department of the Interior's National Travel and Tourism Strategy. As part of its ongoing commitment to CCNM, BLM California continues to promote multi-jurisdiction State-Federal-Community management. Collaborative Gateways help resource agencies improve overall effectiveness of implementation of on-the-ground conservation initiatives, as well as help communities gain ownership and invest in their local State Park or BLM NCL unit, enhance public education and outreach awareness opportunities, and benefit from the economic rewards.

The Gateways and Collaborative partnerships develop options and alternatives for delivery of services to the public, which enhance the protection and management of coastal values and resources to address key concerns such as climate change. Multi-jurisdictional partnerships helped create a consortium of the Collaborative partnerships that continue to grow to protect and preserve California's resources in perpetuity, which will help the BLM and California protect its landscapes and public land resources for the benefit and enjoyment of current and future generations of Americans.

CCNM Gateways are communities that have been chosen to provide a sense of place for the monument, serve as visitor contact points, and link the CCNM with local communities and local initiatives. CCNM Gateways help develop community involvement and a sense of community "ownership," which aid in effectively managing the CCNM. The CCNM's seven gateways also serve as locations where visitors are able to receive educational and interpretive materials regarding the CCNM.

There are nearly 40 CCNM Collaborative Partners working together to protect, conserve or restore CCNM resources within their local areas (list attached). Volunteers contribute to

biological and cultural resource monitoring, garbage removal, invasive weed removal, and lead interpretive talks and hikes.
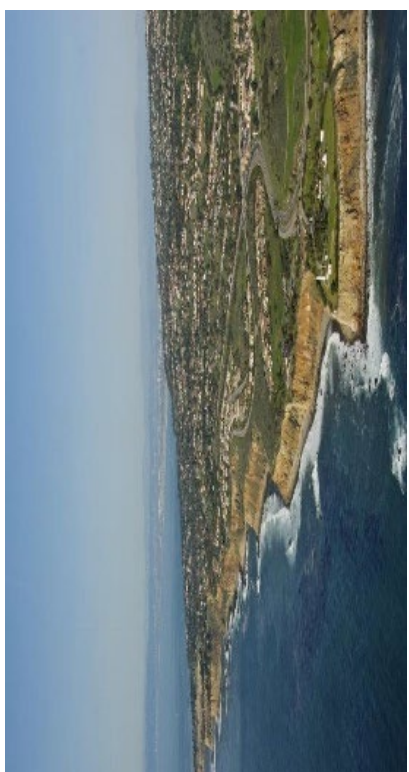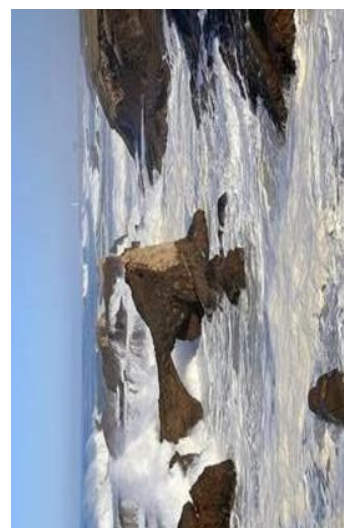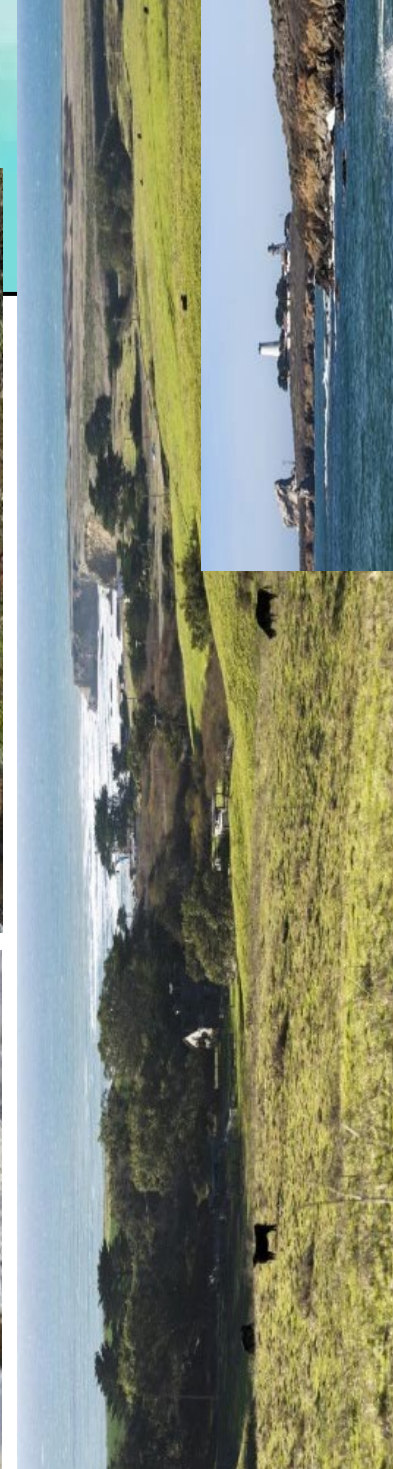
In addition to the core managing partners, California State Parks and California Department of Fish and Wildlife there are other resource management agencies with statutory and regulatory authority that allows them to operate within the entire area of the CCNM. In FY21 BLM staff joined the Marine Protected Area (MPA) Statewide Leadership Team, an advisory team that collaborates on interests pertaining to California's Marine Protected Area (MPA) Network, which was completed in 2012 through the Marine Life Protection Act.

Established in 2014, the MPA Statewide consists of representatives from state and federal agencies, California Native American Tribes and non-governmental partners. The Leadership Team enables communication across our large state in which different regions have varying priorities, ecosystems, deep-time histories and immediate threats. The BLM also continues participation on the Executive Board of the Central California Coast Joint Venture and remains a member of both the Renewable Energy Intergovernmental California Task Force and West Coast Ocean Alliance.

The CCNM gateway and collaborative partnerships represent more than fifteen years of building partnerships committed to protecting and preserving the CCNM's critical habitat for hundreds of sensitive, threatened, and endangered plant, mammal, and bird species. These partnerships, such as the MPA, also provide unique opportunities to utilize and integrate multidisciplinary multi-jurisdictional resources to strategically prioritize conservation efforts throughout California to promote sustainability and economic growth and development.

References

- AMERICAN ANTIQUITIES ACT of 1906: www.nps.gov/rabr/learn/management/upload/antiquities-act.pdf
- CCNM MOU – BLM/DOI, CALIFORNIA DEPARTMENT OF FISH & GAME, CALIFORNIA DEPARTMENT OF PARKS & RECREATION, JUNE 5, 2000
- CALIFORNIA COASTAL NATIONAL MONUMENT RESOURCE MANAGEMENT PLAN, http://npshistory.com/publications/blm/california-coastal/rmp-2005.pdf
- TRAVEL AND TOURISM ACTION PLAN NATIONAL TRAVEL AND TOURISM STRATEGY: https://www.trade.gov/sites/default/files/2020-06/national-travel-and-tourism-strategy.pdf
- RECREATION
- NATIONAL CONSERVATION LANDS
- THE COASTAL COLLABORATIVE (ATTACHED)
- BLM California Strategic Framework (attached)
- GREAT AMERICAN OUTDOORS ACT: PUBLIC LAW 116–152—AUG. 4, 2020, https://www.congress.gov/116/plaws/publ152/PLAW-116publ152.pdf
- The BLM: A Sound Investment for America 2021: https://www.blm.gov/sites/default/files/docs/2022-03/2021-BLM%20A%20Sound%20Investment%208.5%20x%2011.pdf
- COASTAL COLLABORATIVE 2013 Strategy (attached).

7

Trinidad Head

Waluplh-Lighthouse Ranch

Lost Coast Headlands

Cotoni-Coast Dairies

Piedras Blancas

Orange County Rocks and

Project Phase 2.3 – Briefing Paper, Topic - Introduction to Thematic Interpretation
Lead Author: Andrea Sharon

I.   Introduction.

Interpretation is a communication process with the goal of the visitor gaining an understanding, appreciation, and ultimately interest in stewardship of natural and cultural resources. It connects the visitor to the site's resource(s). Thematic interpretation is based on interpretive themes which use; complete sentences to define a relationship inherent in a protected area's resources (*see: Addendum #1 Interpretive Themes*). A site's comprehensive interpretive program should include conducted activities (Project Phase 2.3 Briefing Paper, Subtopic Personal Services Personal Services) as well as interpretive media (Project Phase 2.3 Briefing Paper, Subtopic Non-Personal Services). Also *see: Graphic of the Types of Interpretation.*

II.   Overview, Discussion, Demonstration Examples.

A. Background

John Muir, one of the country's most famous naturalists and conservationists (1838-1914) stated, "I'll interpret the rocks, learn the language of flood, storm, and the avalanche. I'll acquaint myself with the glaciers and wild gardens and get as near the heart of the world as I can."

–John Muir, 1896 Yosemite National Park

Muir's quote is credited as one of the first times the term "interpretation" was used in that context—and not referring to translating from one language to another.

At Rocky Mountain National Park in Colorado, Enos Mills (1870-1932), a keen observer of the natural world, and an out-spoken advocate for nature and nature guiding, led nature walks for park visitors. He also helped train other nature guides, and wrote what is perhaps the first book about nature guiding, *"Adventures of a Nature Guide and Essays in Interpretation."*

In the 1950s, the National Park Service (NPS) hired Freeman Tilden, a journalist, writer, and playwright, to travel to the national parks and observe the types of visitor services being offered. These travels and his research led to the landmark book*, "Interpreting Our Heritage"* in 1957. This is still a widely read book for the profession, as it lays out six principles of interpretation and describes them in detail (*see: Addendum #2 List of Tilden's Principles*).

Natural and cultural resource interpretation, often referred to as "Heritage Interpretation," is now recognized as a profession and many universities offer a Bachelor of Science degree, as well as

advanced degrees in the discipline. Rooted in the NPS, many other protected sites managed by Federal, state, county and local agencies offer interpretive programs to some degree, and park visitors have come to expect them as a part of their park experience. Zoos, botanical gardens, nature centers, adventure-tour companies, cruise ships, etc. also recognize the value of interpretation and offer programs.

The knowledge and skills presented in this paper are geared towards the professional interpreter. Other employees such as park guides, Student Conservation Association volunteers, college interns and docents can still be an asset to an interpretive operation even if their skills do not meet all the suggested levels.

Founded in 1988, The National Association for Interpretation (NAI) is the leading organization dedicated to advancing the profession. NAI has recently partnered with the NPS to standardize certain aspects of the profession, and have begun certifying interpreters who demonstrate mastery of various skills. While the NPS certification program is only available to NPS employees, anyone in the field of interpretation can work to become certified through NAI (*see: Addendum #3 National Association for Interpretation*).

B. Definitions

Types of Thematic Interpretation:
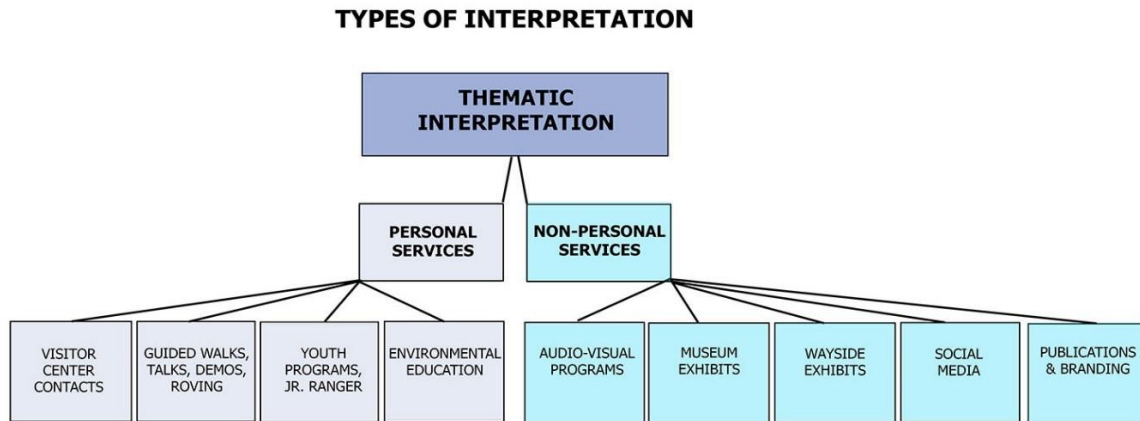
As a graphic model, the process of interpretation can be illustrated as a bridge connecting the visitor to the resource.
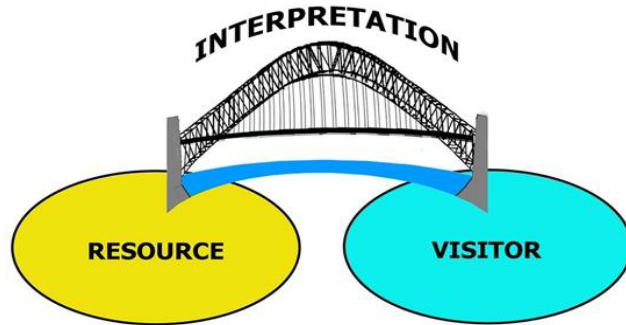
As a mathematical illustration, the process of interpretation can be described using the Interpretation Formula: **(Kr + Kv) + AT = IO**. (Knowledge of resources + knowledge of visitor) with (appropriate techniques) equals an (interpretive opportunity).

In 2001, the NPS defined the process of interpretation as, "A catalyst in creating an opportunity for the audience to form their own intellectual and emotional connections with the meanings and significance inherent in the resource."

The key element within these definitions is the term "interpretive opportunity," in that the interpreter presents a program, but the interpretation actually occurs within each individual visitor based on their life experiences. So, the experience could be different for each visitor and there is also the possibility that a connection is not formed at all. In evaluating the effectiveness of a program, it is providing the opportunity to visitors that matters. We really don't have a way to evaluate how the visitor internalized the experience, except to possibly ask them directly, which is not often feasible.

C. Discussion

Interpretation relies on multi-disciplinary knowledge to provide different audiences with relevant and meaningful connections to park resources. Interpreters supervising staff programs must have a thorough understanding of the underpinning research, tangible features, associated concepts, context, relationships, systems, processes, human values, and other meanings associated with the resource. Interpreters must also understand multiple points of view regarding the resource as well as the park's past and current conditions and possess the skills to interpret them for all visitors. (*see: Multiple Points of View* - https://www.nps.gov/idp/interp/340/mpv.htm).

CASE STUDY: Trail Guide

Bandelier National Monument is nestled in the canyons of the Pajarito (little bird) Plateau in Northern New Mexico. The site preserves the archeological remains of the Ancestral Puebloan Culture (formerly known as the Anasazi) who inhabited the area from approximately 1150 AD to 1550 AD. A popular one-mile loop paved trail just outside the visitor center provides access to several surface dwelling and "cavates" along the steep cliff face of Frijoles Canyon. The cavates were carved by the early inhabitants into the soft volcanic tuff as back rooms for storage and living. A trail guide has been developed and for a small fee visitors can self-guide the route;

visitors learn about the geology, how we think the site was utilized, and what daily life was like. The left side of the guidebook provides information and theories based on the perspective of the archeologist/anthropologist and the right side presents the story from the perspective of the modern Pueblo Culture who still occupy the region and are thought to be the descendants of the ancient inhabitants. Neither perspective is necessarily right nor wrong, they are just different ways of interpreting the resource. During the planning process for the brochure, NPS provided funding to pay a tribe-selected representative to write the text.

This case study illustrates the importance of the use of terminology. The term "Anasazi" was established in 1927 through the archaeological Pecos Classification system, referring to the Ancestral Pueblo people who spanned the present-day Four Corners region of the United States. The term is Navajo in origin, and means "ancient enemy." The Pueblo peoples of New Mexico understandably do not wish to refer to their ancestors in such a disrespectful manner, so in the mid 1980s, the term was changed to the more appropriate "Ancestral Pueblo" or "Ancestral Puebloan."

"The term 'Anasazi' is a word not used within our Pueblo communities. Therefore, how can we, as a universal collective, honor our past people with dignity and respect? Now is the time to take back control of how to accurately describe our ancestral people.
–Stephanie Oyenque, Indian Pueblo Cultural Center Education Specialist, Albuquerque, New Mexico.

A similar approach has been applied to the names of the Pueblo Villages. When Spanish explorers first visited the region in the 1500s, they named them after saints in the Catholic Religion. Most Pueblo people prefer referring to their culture and their villages in the native language; for example, San Juan Pueblo prefers Ohkay Owingeh, from their Tewa language.

Developing interpretation that is relevant to a wide variety of audiences requires understanding of the audience characteristics, interests, expectations, and multiple points of view. Psychological, social, cultural, economic, political, religious, historical and philosophical factors affect visitor points of view. Accommodating varied learning styles and developmental functioning among different audience members is important to fulfill varied expectations and interests of the audience. Understanding the many motivations for visiting a resource and being cognizant of the existing meanings, present interpretations, and current attitudes that visitors hold about a resource can be important components in making interpretation relevant to as many visitors as possible.

Interpretation relies on the appropriate integration of a wide variety of techniques to foster opportunities for meaningful connections to the resource. The selection of techniques must always be based on specific program objectives and on knowledge of the strengths and weaknesses of each technique. In addition, knowledge of both the audience and the resource is necessary to determine the appropriateness of the technique. Possessing and demonstrating the skills necessary to execute the chosen approach must also be considered.

Accessibility laws and polices provide guidelines assuring that both physical and programmatic accessibility is provided for all visitors. Physical accessibility includes accommodations such as: designated handicap parking; cuts in curbing to allow easy transition from the parking area to

paths and trails; accessible restrooms; and visitor center desk height; and audio-visual programs being captioned with audio description and head phones as needed. Programmatic accessibility includes accommodations for those with physical and/or cognitive limitations, such as scaled models of park resources for tactile exploration and audio description of exhibit text.

The internet and wide-spread cell phone use and coverage have recently opened up new opportunities for the use of apps and an array of techniques to reach wider audiences with special needs. The new National Park Service mobile app (*see:* go.nps.gov/app) is now available for visitors to national parks across the country. Created by park rangers with visitors in mind, the app gives the public up-to-date information about all 423 national parks in one easy-to-use site.

Universal Design, when used as a noun, is an outcome of a design process, indicating that something is as functional as possible for as many people as possible. In planning and designing both the physical and programmatic aspects of interpretive programs and media, the principals of Universal Design should be interwoven throughout. For example, when planning a walkway, design it as a ramp instead of a set of stairs with a ramp next to it, or even worse, a ramp in a different location than the main route. There are numerous other examples of Universal Design and organizations that specialize in this area (*see: Addendum #4 Accessibility and Universal Design and Addendum #5 Examples of Accessible Museum Exhibits*).

III.   Conclusions and Universal Best Practices

· Interpretation explores the primary reasons for preserving natural and cultural resources. These resources represent who we are as a society, what we value, where we have been, and most importantly where we can go. Interpretation fosters active participation in a society by building skills for respectfully exploring complex questions and issues. As lifelong learners, participants develop understanding, empathy, and respect for the perspectives of others. Interpretation also explores the changing nature of truth and meaning. It analyzes past actions and considers modern relevancies. The reach of interpretation stretches beyond physical boundaries and the strict reading of enabling legislation, exploring a resource's contemporary significance and the perspective of diverse audiences, thereby helping people view historical, cultural and environmental legacies as ever-evolving.

· An effective interpretive program relies on investments in staff including: training in interpretation skills; regular coaching and evaluation; access to current research and resource information; and allowance of the time, equipment, and facilities to develop professional programs and media (*see: Addendum #6 Additional Foundations of Interpretation documents*).

· An effective interpretive program is both programmatically and physically accessible.

· Effective interpretive presentations and media provide multiple-points of view.

To delve deeper into the details of personal and non-personal interpretive services see briefing papers on those topics (Project Phase 2.3 Briefing Paper, Subtopic Personal Services) as well as interpretive media (Project Phase 2.3 Briefing Paper, Subtopic Non-Personal Services). (Also *see: Addendum #7 Director's Orders for Interpretation*).

Addendums:

Addendum #1
Interpretive Themes:

Interpretive themes convey a park's significance. Primary interpretive themes are the key ideas through which the park's nationally significant resource values are conveyed to the public. They connect park resources to the larger ideas, meaning, and values of which they are a part. They are the building blocks—the core content—on which the interpretive program is based. Each primary theme may connect to a number of specific stories or subthemes. These elements are helpful in designing individual services, ensuring that the main aspects of primary themes are addressed.

Interpretive themes are usually a single sentence that expresses meaning. They link a tangible resource (something that can be touched) to its intangible meanings (abstract concepts). They use tangible resources to focus on universally relevant concepts, linking them together.

Often the terms "topic" and "'theme" are interchanged—but they are quite different. A topic identifies the subject and the theme tells a story and delivers a message. Developing interpretive themes in general is an abstract exercise and can be difficult for those learning the process— especially across cultures and different languages.

Example 1.
Topic: Fire in nature
Theme: Fire is a natural process that creates life out of death and provides insight into tangible and intangible loss and renewal.

Example 2.
Topic: The power of water
Theme: The power of water to carve, smooth, and continuously reshape this landscape provides opportunities for us to marvel at how a seemingly simple liquid can play such a profound role in every landscape on the planet.

Addendum #2
Freeman Tilden's Principles :

In his 1957 book *Interpreting Our Heritage*, Freeman Tilden tried to define the craft of interpretation: "Heritage interpretation is an educational activity," he wrote, "which aims to

reveal meanings and relationships through the use of original objects, by firsthand experience, and by illustrative media, rather than simply to communicate factual information." To help interpreters make those meanings, he defined six principles of interpretation:

1. Any interpretation that does not somehow relate what is being displayed or described to something within the personality or experience of the visitor will be sterile.

2. Information, as such, is not Interpretation. Interpretation is revelation based upon information. But they are entirely different things. However, all interpretation includes information.

3. Interpretation is an art, which combines many arts, whether the materials presented are scientific, historical or architectural. Any art is in some degree teachable.

4. The chief aim of interpretation is not instruction, but provocation.

5. Interpretation should aim to present a whole rather than a part, and must address itself to the whole person rather than any phase.

6. Interpretation addressed to children (say up to the age of twelve) should not be a dilution of the presentation to adults, but should follow a fundamentally different approach. To be at its best, it will require a separate program.

Addendum #3
National Association for Interpretation - *see:* https://www.interpnet.com/

Based in Fort Collins, Colorado, this not-for-profit organization is dedicated to advancing the profession of heritage interpretation. It currently serves about 6,000 members in the United States, Canada, and over thirty other nations. Individual members include those who work at parks, museums, nature centers, zoos, botanical gardens, aquariums, historical and cultural sites, commercial tour companies, and theme parks.

Addendum #6
Accessibility and Universal Design Resources:

National Center on Accessibility - *see:* https://ncaonline.org
US Government, General Services Administration - *see:*
https://www.section508.gov/develop/universal-design/

Accessibility PowerPoint Training by Ray Bloomer, NPS Accessibility Coordinator - *see:*
https://1drv.ms/p/s!Am7I5yN6S2n1hGZnG71TB7qyYZjv_2022

Addendum #7
Examples of Accessible Museum Exhibits, Statue of Liberty National Monument, NJ/NY:

Scaling down size from an original object gives a sense of the overall features. This model gives the visitor an opportunity to explore Lady Liberty from her crown down to the pedestal. As a good example of Universal Design the model can be used by all visitors.

Here a scaled-down tactile map of Liberty Island gives the visitor an idea of the features at the site and their relationship to each other.

This life-sized model of Lady Liberty's foot gives the visitor a comparison to their own foot size.

The life-sized model of Lady Liberty's facial features also gives the visitor an idea of how big the full statute is.

Addendum #6
Additional Foundations of Interpretation documents:

1. [Foundations of 21st Century Interpretation - 2017](#) [PDF]
2. [Foundations of Interpretation - v.2016](#) [PDF, 282 KB]
3. [Foundations of Interpretation - 2007 Legacy version](#) [PDF]

Addendum #7
NPS Director's Orders:
Director's Orders - *see:* https://www.nps.gov/subjects/policy/upload/MP_2006.pdf.
  - Director's Order #6, Interpretation and Education
  - Director's Order #36, Cooperating Associations and Partnerships

NOTE - Applicable Directors Orders for Managing Protected Areas:
Each Federal Agency, as well as most state, local and nonprofit organizations, responsible for various protected areas, have an established set of written laws, policies, and regulations which provides formal guidance to manage their areas.

Using the United States National Park Service as an example, the Agency's primary reference source for policy is titled: National Park Service Management Policies 2006.
This document is the most recent version and a pdf can be accessed at - *see:* https://www.nps.gov/subjects/policy/upload/MP_2006.pdf. Currently an updated version is being drafted for future implementation.

The National Park Service Office of Policy coordinates the following:

- Policy Development
- Management Policies
- Laws
- Executive Orders
- Regulations
- Director's Orders & Related Documents • Policy Memoranda
- Advisory/Operating Committees

Visit the Office of Policy website for more information on NPS policies and how they are developed.

NPS Director's Orders are documents which provide detailed written guidance to help managers make day-to-day decisions.

Two important Director's Orders used in management of Interpretive Services are:

- Director's Order #6, Interpretation and Education
- Director's Order #36, Cooperating Associations and Partnerships

Director's Orders can be assessed at - https//www.nps.gov/policy/DOrders/

An additional site for Cooperating Associations and Partnerships Is "Common Learning Portal" at learning.nps.gov

Glossary:

Accessibility/Universal Design: Design principles that provide for accessibility for all people, including those with disabilities. Examples include audio description, captioning, signing, braille, structural ramps, and others.

Audiovisual Program(s)(AV): Sound and/or visual non-personal interpretive programs offered to visitors from short audio clips to full-length feature films.

Advisory Committee: A group comprised of citizens and outside experts intended to ensure transparency and public participation in the decision making process.

Citizen Science: People who voluntarily collect data to answer real-world questions and contribute information that helps the agency manage the site.

Concessions: Private companies that work with an agency to offer services to site visitors that parks do not provide directly. Examples include lodging, food service, fuel, and others.

Cooperating Association: Official nonprofit education partners of an agency working side-by-side with agency staff to provide materials which enhance the park experience. These materials include books, trail guides and maps, AV-programs, and other items reflecting park interpretive themes. Proceeds support the interpretive, educational and scientific programs and services of land management agencies.

Cultural Resource: A physical feature associated with human activity; includes sites, structures and objects possessing significance in history, architecture or human development.

Demonstrations: A practical, hands-on exhibition and explanation by a subject-matter expert of a skill reflecting some aspect of the park's story.

Environmental Education: A process which allows individuals to explore environmental issues, engage in problem solving, and take personal action to improve the environment.

Friends Group(s): Any nonprofit organization established primarily to assist or benefit a park, a group of parks, a specific program, or the entire park system by helping support interpretive, educational, and scientific activities through fundraising and membership programs.

Gateway Communities: Communities on the boundaries of protected areas that provide hospitality services and additional recreational activities.

Graphic Identity Program & Branding: Graphic standards that guide the design of a broad range of communication media within an agency and serve as a "brand" identifying that institution.

Guided Walks & Talks: Thematic interpretive presentations which provide in-depth information about natural and cultural resources specific to the site.

Intangible: Intangible meanings are abstract and include ideas, feelings, relationships, values, and beliefs. Some intangible meanings are also universal concepts—concepts to which everyone can relate but no two people will see exactly the same way. Tangibles, intangibles and universal concepts form the basic building blocks of the interpretive process.

Interpretation: A catalyst in creating opportunities for audience members to make their own intellectual and emotional connections to the meanings inherent in park resources.

Interpretive Equation: The basic elements used to create an interpretive opportunity— knowledge of the resource, plus knowledge of the audience, plus appropriate techniques equals an interpretive opportunity (KR + KA) + AT = IO)

Junior Ranger Program(s): A program that invites the youngest visitors to become a member of the National Park Service family. Junior Ranger programs give children and their families the opportunity to uniquely explore and learn about their national parks, and how they can help protect them today and into the future.

Museum Exhibits: The primary and traditional means by which a park museum reaches the public. Exhibits allow visitors to learn about park resources by displaying original or replica items. Exhibits communicate information, concepts, ideas and stories about people, events, activities or the natural world that a park commemorates and/or preserves.

Natural Resources: Components that exist in the world without the input of humans. Natural resources are diverse ranging from renewable resources to non-renewable resources, living to non-living, tangible to intangible. Natural resources are essential to the survival of humans and all other living organisms.

News Media: Those elements of the mass media that focus on delivering news to the general public or a target audience. These include print media such as newspapers, magazines, broadcast news, and the internet.

Non-personal Services: Thematic interpretive experience communicated to the public through means other than a person. This includes displays, signs, audiovisual programs, publications and other static means.

Park: A general, commonly used, inclusive term for any protected area. May include natural or cultural areas, or structures managed by a governing oversight body.

Partnerships: Organizations that provide support for projects and programs in protected areas.

Personal Services: Information conveyed to the visiting public in a live, person to person basis; this could include casual conversation answering individuals' questions, to formal thematic interpretive talks, conducted walks, live demonstrations, and other person interactions.

Protected Areas: Designated by national, regional or local authorities to help preserve an area's special qualities. Management of these zones may vary to reflect the primary reasons for designation. Varying types of protected areas include national parks, national monuments, nature reserves, wildlife sanctuaries, and the protection of landscapes as scientific reserves. Access by the public can vary from limited public access to protect the scientific integrity to management for sustainable use to public access for recreation.

Public Outreach: An action performed by a protected area's management team or a supportive friends group to connect, inform, and/or get feedback from local communities, park users, or other constituencies.

Public Service Announcement (PSA): A message in the public interest distributed by the media at no cost, to raise awareness and change behavior. The term may vary from country to country, but the purpose remains the same.

Roving Contacts: Informal one-on-one visitor contacts by park staff in the field to answer visitor questions and provide additional information about a wide variety of specific park resources.

Senior Ranger Programs: Similar to the Junior Ranger program but targeted towards adults.

Social Media: Web-based communication tools that enable people to interact with each other by sharing and consuming information.

Tangible: Interpreters use the word tangibles when talking about the physical elements of a site. A tangible has qualities that you can see, touch, taste, hear, or smell. Tangibles, intangibles and universal concepts form the basic building blocks for the interpretive process.

Theme: A complete sentence that conveys the key ideas through which a park's nationally significant resource meanings are conveyed to the public. Themes provide the foundations for all interpretive programs and media; they are the "take home" message for the visitor.

Thematic Interpretation: An interpreter relies on a central theme to guide development of personal and non-personal services. In presenting the activity the interpreter develops the theme in such a way that it will be highly relevant to an audience.

Universal Concepts: Concepts to which everyone can relate but no two people will see exactly the same way. They provide the greatest degree of relevance and meaning to the greatest number of people. Tangibles, intangibles and universal concepts form the basic building blocks for the interpretive process.

Visitors: People who use protected areas for a variety of purposes—to enjoy a natural setting, to learn about cultural heritage, for recreational opportunities, and many other personal reasons.

Visitor Center Contacts: The live interface between park staff and park visitors at an established location which provides visitors with orientation and basic park information necessary for an enlightened and safe park experience.

Visitor-Use Management: Process for managing visitor behavior to achieve and maintain desired conditions and visitor experiences.

Volunteers: Non-paid individuals that donate their time, knowledge and skill in support of park programs.

Wayside Exhibits: Non-personal service consisting of signage fabricated of weather-proof material providing an interpretive message that explains features on the landscape

Youth Programs: Personal services interpretive presentations which address younger audiences in language and with activities appropriate to their age. Includes "Junior Ranger" programs which also promotes conservation and preservation ethics through both live interactions and structured independent activities.

END OF DOCUMENT

DEPARTMENT OF THE INTERIOR - INTERNATIONAL TECHNICAL ASSISTANCE PROGRAM
GEORGIA PROTECTED AREAS POLICY REVIEW
SUB-TEAM: PUBLIC OUTREACH & ENVIRONMENTAL EDUCATION
7/13/2022

Project Phase 2.3 – Briefing Paper, News Releases/Public Service Announcements
Lead Author: Bob Danley

I.   Introduction.

News Releases and Public Service Announcements (PSAs) are important communication tools or processes to support outreach or civic engagement. The goals of outreach and civic engagement are: a) building trust b) connecting to new audiences c) engaging advocates of wild places and d) promoting deeper understanding of park and nature reserve roles by creating correct, interesting, and up-to-date content for stakeholders. The National Park System promotes civic engagement in policy guidance. The National Park System advisory board of 2001 in "Rethinking the National Parks for the 21st Century" explains:

> "Parks are places to stimulate an understanding of history in its larger context, not just as human experience, but as the sum of the interconnection of all living things and forces that shape the earth…. In many ways, the National Park Service is our nation's Department of Heritage…. Parks should be not just recreational destinations but springboards for personal journeys of intellectual and cultural enrichment…. [We] must ensure that the American story is told faithfully, completely, accurately…. Our nation's history is our civic glue."[1]

Staff at a network of seven park units of the Mojave Desert (Arizona, California, Nevada) realized the importance of civic engagement but discovered they lacked a plan[2] to distribute research and monitoring results to internal staff. They needed strategies to convey study results (inventory and monitoring of biotic/abiotic resources) to interpretive staff who would in turn disseminate that information to the public and stakeholders. The job of all staff, especially interpreters, is to connect park visitors to park resources. This enriches and expands visitor experience and awareness. To that point in time staff surveys identified "personal communication" as the main method of becoming aware of science results. Employees recognized this as somewhat effective if only the staff size was small. They felt a better method of communication would be a newsletter, deemed to be very effective.

Those folks correctly recognized "news" as an effective path for internal (staff) and external (public) communication and what follows is an overview of "news" in the form of releases and PSAs.

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[1] retrieved 13 July 2022 from
https://www.nps.gov/subjects/policy/upload/Rethinking-the-National-Parks-for-the-21st-Century-2001.pdf
[2] retrieved 13 July 2022 from
https://irma.nps.gov/DataStore/DownloadFile/448416

II.   Overview, Discussion, Demonstration Examples

Definitions
News releases and PSAs each have different goals as communication tools. A news release is a statement intended for public release distributed to members of the news media for the purpose of a.) providing newsworthy information b.) publishing an official statement or c.) making an announcement. A PSA is designed to make the public or a targeted audience more aware of an issue deemed important; PSAs should provide a reader with a greater understanding of an issue and, if appropriate, promote action.

Messages
News releases and PSAs should include short and pithy mission statements and/or other branding components (text, logos, icons) in all formats. This creates an understanding and consistent focus on "who we are, what we do and how we do it." A simplified and official message from the U.S. Fish & Wildlife Service (Service) is: *The Service helps Americans conserve and enjoy the outdoors.*[3]

When to use
News releases are excellent for:
- staff involvement in creating and producing; they become aware/informed of park issues
- announcements of: meetings, office hours, closures for safety issues, new trails/infrastructure, wildlife walks, visitation statistics, peak migration times for birds, peak bloom times for wildflowers
- sharing expertise: tips for seeing/photographing plants/animals, wildlife lectures, fact sheets, historical background of lands, culture, training volunteers
- recruiting: volunteers with different skills or interests
- recreation information: usage of bicycles, horses, motorized vehicles, hiking trails
- management actions: visitation (describes who, when, where, why and how), resource actions (outlines where and when of prescribed fires, mowing, restoration, irrigation, etc.)
- economic opportunity advertisement: advertise for grazing permits, mushroom picking
- alerts on fees/possible costs associated with: entrance, hunting, fishing, photography, etc.

PSAs provoke action by the reader/listener/viewer in correcting a prioritized problem by:
- building awareness
- reminding readers that your organization has expertise, but the problem extends past the size/capabilities of your organization
- highlighting how an issue affects readers or their community
- targeting specific members of the public by tailoring the message to them

Creating
A news release…
- is typed, to be printed or read digitally
- identifies an objective

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[3] retrieved 13 July 2022 from
https://digitalmedia.fws.gov/digital/collection/document/id/70/

- develops message(s) addressing objective
- considers the public/stakeholders…how are they affected and answers "why care?"
- should have the most important facts at the beginning…other facts follow in order of lesser importance.
- answers "who, what, when, where and why?"
- keeps text to a minimum, is simple and to the point
- avoids technical terms, acronyms

A PSA…
- has similar processes and questions as the steps in creating a news release
- will either be read, listened to or viewed (format detailed in next section). Decide upfront what the final product(s) or format(s) will be.
- should be about a single issue and move readers emotionally, e.g., 380 species of vascular plants in Georgia are endemic (found nowhere else).
- researches the single issue thoroughly so that current, accurate facts and statistics appear within a PSA.
- identifies the target audience (by age, gender, education, income, etc.)
- uses visuals/graphics (colors, shapes, lighting, etc.) for conveying or provoking emotional reactions

Formatting…
News Releases - The purpose of a traditional news release is to garner news reporter interest and follow-up. This requires a short and pithy narrative, though there is no set limit for the number of words used. The staff at each of the Georgian national parks, state habitat/species management areas, state nature reserves and three monuments of nature should be able to create news releases containing information of a routine nature. A generic template for doing so is below.

News releases submitted to a news organization are usually structured from the top down as follows:
1. Letterhead or logo of organization
2. Contact information (name, phone number, email address, mailing address) for person who wrote and posted press release to news media
3. Headline - one to six words describing and summarizing news. It should also draw attention
4. Dateline - Date of press release and city of origin
5. Introduction - immediately establishes the who, what, where, when and why of the news release theme.
6. Body - further development of news: context, statistics, relevancy
7. Boilerplate - brief background of issuing organization, i.e., an "about" section

Alternatively, news releases can be published to an in-house blog or website. This is in response to lesser numbers of newspapers and news reporters available to refine or expand a news story.

PSAs - can be formatted in three ways to be:

1. read…like a poster, flier, leaflet or pdf. It usually has a combination of text and graphics and can be a printed product or online digital product. It is likely you already have employees at a regional or national level creating informational or interpretive signs; the same skill set is necessary for creating this type of PSA. These same people could easily design, create and produce this PSA type in-house. The visual image or graphic is the most important part of this PSA (a picture paints a thousand words). If your staff doesn't have the talent to do this, hiring a professional is probably best. Costs associated with graphic design work are usually not prohibitively expensive.

2. listened to… Keep in mind that most radio stations prefer 30 second PSAs. The table below gives guidance as to number of words per time interval:

PSA length (seconds)	15 seconds	20 seconds	30 seconds
Number of words	30-35 words	40-50 words	60-75 words

A radio PSA can be produced in two different ways.
   a. A script is produced and typed as hard copy (double spaced) or e-mailed to a radio station to be read exactly as written during on-air broadcast. Producing this PSA type requires strong writing skills detailing the facts. An interpretive and/or educational emphasis is also useful at times. Costs are minimal using office computers to produce and distribute scripts. A radio PSA is the easiest to make by cost and effort. Here is a sample template in the form of a table for submission to a radio station:

Sample PSA script for radio broadcast
Use: for immediate release July 8, 2007 on Radio Tbilisi 93.5 MHz
PSA length: 20 seconds
Organization: Georgian Ministry of Environmental Protection and Natural Resources
PSA Title: Borjomi-Kharagauli National Park joins International Network
Text: BORJOMI-KHARAGAULI NATIONAL PARK JUST BECAME A MEMBER OF PAN-PARKS. IT'S NOW GROUPED WITH THIRTEEN OTHER EUROPEAN PARKS. ALL PROVIDE EXCEPTIONAL WILDERNESS AREAS AND HIGH-QUALITY TOURISM FACILITIES IN

BALANCE WITH ENVIRONMENTAL PROTECTION AND

SUSTAINABLE LOCAL DEVELOPMENT. VISIT OUR RENOWNED

NATIONAL PARK THIS SUMMER AND ENJOY SPECTACULAR VISTAS

AND WILDLIFE.

-END-

b. A script again is created with the word count matching the thresholds for a 15, 20, or 30 second duration PSA. The script is then read and recorded in-house using software (e.g., Audacity, Adobe Audition) compatible with your computer operating system and USB microphone. The resulting file should be either a .wav (large, uncompressed file) or .mp2 (smaller, compressed file) file type. The resulting audio file is delivered to the radio station and played as is.

The voice is the main focus. It should reflect the targeted audience (by age, gender, education, income, etc.) and the PSA theme. So, choose either staff, volunteers or professional actors to match up with your audience and theme. A recorded PSA will give you exactly what you want an audience to hear, but will be challenging to produce because of additional expertise needed.

3. viewed…Video seems daunting. Don't be deterred. Some types of video PSA can be done in-house simply and look quite professional. A video PSA is much like a radio PSA in terms of duration and script. However, it has much more flexibility and creativity that can really impact a viewing audience. Video PSAs can be simplified and produced inexpensively without intervention from professionals. How so?

The simplest and best example is creating a presentation using Microsoft PowerPoint. Use this YouTube tutorial entitled *Creating a PSA Video (.mp4) using PowerPoint*[4] as a guide. Animation, text, graphics, music, voice overs and just plain still photos (!) can all be embedded in a series of slides to export as video. The result is stunning and can be saved and exported as an mp4 file ready for upload to a television station. Similarly, a timed slide show can be uploaded with accompanying script to be read by television staff.

PSAs actually containing video run a spectrum from simple to complex. Complex videos containing live action shots, camera movement, character movement, special effects, and extensive editing are better left to contracted professional videographers. Instead, what follows are two simple PSA video types that can easily be scripted, storyboarded, shot, edited in-house and finally uploaded as an mp4 file to a television station as a 60 second PSA (common length).

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[4] retrieved 13 July 2022 from
https://www.youtube.com/watch?v=Q8C2xcMWQBg&t=3s

A storyboard is a visual extension of the script. It is a collection of drawings or sketches (cartoon or map-like) depicting what a particular set of video frames should look like when filmed. Directions for lighting, camera movement, sounds, characters, transitions, actions, etc. are included. This gives guidance to the person(s) filming the separate parts of the PSA. The Media Insider has a detailed 13:35 minute YouTube tutorial on storyboarding.[5]

The two types of video PSAs are A) announcement video B) narrative or voice over video.

    A. An announcement video is a spokesperson (likely Georgian Ministry of Environmental Protection and Natural Resources staff member) standing in front of a background (usually focus of announcement) reading an official statement looking straight into the camera. Watch a demonstration example posted on YouTube from the *City of Adelaide Outdoor Activation Grants* announcing grants to deal with the challenges of COVID 19 and Australian city businesses.[6]

Work matrix in producing an announcement video PSA	
Script	straightforward…is the official announcement for an event, safety measure, closing, etc.
Storyboard	a.) determine where filming is done (background) b.) who is the spokesperson (tailored to theme and audience) c.) how and where are they standing so that ¾ of the person is in the frame facing the camera d.) how much of the background should be visible.
Shot(s)	One static shot with natural front lighting. Tripod-mounted camera will automatically track slight movements of the head. Use either a 35 mm or 50 mm lens with a digital single lens reflex camera.
Edits	minimal steps…a.) do color correction b.) adjust sound levels c.) trim video to specific length d.) fade ending to black and e.) add branding (logo or icon) f.) export as mp4 file. Use video editing software (e.g., Adobe Premiere Pro or something similar) to do this work. See Premiere Pro beginners' tutorial for doing this work from Justin Brown - Primal Video[7]

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[5] retrieved 13 July 2022 from
https://www.youtube.com/watch?v=NPrkxj2MyZI
[6] retrieved 13 July 2022 from
https://www.youtube.com/watch?v=-bRy1HbDk8E
[7] retrieved 13 July 2022 from
https://www.youtube.com/watch?v=NPrkxj2MyZI

The spokesperson stands static (no need for panning) while relaying information. A digital camera (single lens reflex or even a smartphone) mounted on a sturdy tripod can assure quality output. Focus on the face of the spokesperson; the camera will track the face automatically. Make sure the internal microphone is turned on with appropriate settings for video type. Film in landscape mode either in 4K (individual frame size equals 3840 x 2160 pixels) or 1080p (individual frames measure 1920 x 1080 pixels). If possible, film footage using the RAW setting; it will allow for better post processing of video elements (colors, lighting, sharpening, etc.).

B. A narrative or voice-over video PSA is much like the announcement PSA. Except, the person doing the speaking is not seen and the background is not static. It's simply a voice talking over a series of video images. Images and voice-over are very powerful in combination. Review the 32 second nokidhungry.org PSA[8] posted on YouTube as a demonstration example. It is about childhood hunger in America.

Work matrix in producing a voice-over video PSA	
Script	Single person verbally records the script as audio file (.wav file) separate from video footage…
Storyboard	In the nokidhungry.org PSA example, there are 19 separate video clips. The developers would have first portrayed the clips as storyboard sketches. Each clip has a different visual message exhibited by the children's expressions, message signs, backgrounds (hinting at poverty), and fruit held in their hands. The message is further strengthened by the children's different races and genders.
Shot(s)	Nineteen individual video clips with natural lighting directed from the storyboard (who, what, where) sketches. Much panning and zooming by camera using a boom and gimbal hardware. Likely three lenses used: a couple of prime lenses with a single zoom lens. All probably attached to a digital single lens reflex camera.
Edits	Steps include…a) do color correction b) import audio file, sync with video and adjust sound levels c) trim video to specific length d) add organization brand slide to end of video e) add branding (logo or icon) f) fade ending to black and g) export as mp4 file.

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[8] retrieved 13 July 2022 from
https://www.youtube.com/watch?v=z7fQaTjFe-g

Scope and Authority for news releases and PSAs

The Georgian Ministry of Environmental Protection and Natural Resources has territorial bodies and Departments (Forestry Department et al) similar in organization to the U.S. government agencies. The U.S Fish & Wildlife Service (Service) is one agency within the U.S. Department of the Interior. It is a large organization of 5,540 people that has a supervisory chain-of-command structure. As a simple overview, there is a Service Director that gives executive and official approval to all policy and actions. Answering to the Director are several Assistant Directors of specific niches. In the case of news releases and PSAs, an Assistant Director-External Affairs[9] oversees the development and dissemination of these communications from a national perspective. The Assistant Director provides guidance and collaboration to eight geographic regions (akin to Georgian territorial bodies) of the U.S. similarly organized with a director and various assistant director staff. Each of the Regional offices have personnel dedicated to External Affairs. They, in turn, work with 567 individual National Wildlife Refuges providing leadership, coordination and guidance for public communications.

At the refuge level, usually a single staff person, from a small number of employees, is authorized by the refuge manager to do news releases. This does not preclude others from participation in new release creation. In fact, it should be encouraged as a way for internal staff to become aware of newsworthy issues. "Official" news releases from refuge staff do not need regional or national approval if they contain information of a "routine" nature. Routine matters include Refuge operating hours or details of an event or public program. If the news release contains information that is not routine, consultation with External Affairs within a regional office is required. This is particularly important to prevent employees from inadvertently revealing information protected by statute, executive order or regulation. This system works well when controlling for: controversial issues, high-profile species/habitats, policy implications, public notification of Federal law and generating widespread interest for Service issues.

All staff are encouraged to communicate with news media and public, but must keep in mind in what capacity they are doing so. The Service defines two types of communication capacity with the public[10]: 1) official communications that represent the Service regarding policy, procedure or decisions and 2) personal communications by Service employees that represent themself and not the Service, i.e., does not contain knowledge acquired through their official duties.

PSA authorities and communication capacity are similar to news releases. The exception is that PSAs contain information beyond routine. As such, regional and national External Affairs staff would be involved in any type of PSA produced. Most Refuge employees do not have the software or skillset to design, edit and produce a PSA. This does not preclude Refuge staff from participation in such a product. Participation is important for the awareness it brings to internal and external audiences of important issues.

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[9] retrieved 13 July 2022 from
https://www.fws.gov/policy/115fw1.html
[10] retrieved 13 July 2022 from
https://www.fws.gov/policy/115fw2.html

III. Advantages and Disadvantages of Different Mediums for Distributing News Releases and PSAs

The National Park Service was quoted in the introduction emphasizing the importance of civic engagement by news release and PSA to an external audience. The National Park Service also recognizes the importance of news communication to the internal audience of staff. The reasoning: the job of all staff, especially interpreters, is to connect park visitors to park resources which enriches and expands visitor experience and awareness. Two tools for this communication are news releases and PSAs. The positive reasons, processes, examples and authorities for these tools were briefly outlined above. What are the drawbacks?

News releases have been in use since 1906; the first one reported a railroad accident. Video PSAs came into being during World War II (1941) promoting savings bonds. A lot has changed since then. According to Pew Research,[11] [12] United States employment (2008-2020) of reporters at traditional newspapers has declined 57%; radio station newsroom employment has dropped 26% and television newsroom employment has stayed relatively static. Alternatively, digital-only newspapers have added reporters (up 144%), but overall reporter employment still has declined. This means there are fewer reporters to distribute your newsworthy stories and traditional newsrooms are not the only platform for news. 63% of Facebook and Twitter users reportedly get their news just from these social media sites. Georgia may face similar patterns. These trends in news indicate that posting news releases and PSAs in the same way over time with the same radio or television stations may not be smart.

Another downside to using radio and television for news releases and PSAs is the lack of analytics indicating whether you've reached your audience. The success of civic engagement can be gauged indirectly by event attendance or phone calls, if that was the call to action. The lack of analytics is one reason to not be entirely dependent on radio and television to distribute your news.

Many private businesses now communicate directly with clientele or supporters, which requires. having a presence on the internet. Your news releases and PSAs of whatever type can easily be reformatted and posted on your website, blog or social media sites. Web platforms can provide powerful analysis on how effectively you've reached audiences. Further, you can reach an audience that is internal, external, local and international. This action was one of four to-do items (disseminate information abroad, advertise on mass media, create web pages and tourism exhibitions) included in Georgia's Law on Budget of 2007.

IV. Conclusion

While some drawbacks of news releases and PSAs are outlined above, they are still a valuable tool : to: a.) build environmental awareness and b.) increase participation by the public for planning and functioning of protected areas. Posting reformatted news releases and PSAs on

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[11] retrieved 13 July 2022 from
https://www.pewresearch.org/fact-tank/2021/07/13/u-s-newsroom-employment-has-fallen-26-since-2008/
[12] retrieved 13 July 2022 from
https://www.pewresearch.org/journalism/fact-sheet/newspapers/

your website, blog, YouTube, and social media sites will only assist in reaching more audience; doing so regularly will lay the foundation for emotional and intellectual connection to Georgian lands. It is the best path forward to achieve the goal in Article 37 paragraph 3 of the Georgian Constitution: "Everyone shall be obliged to care for natural and cultural environment."

DEPARTMENT OF THE INTERIOR - INTERNATIONAL TECHNICAL ASSISTANCE PROGRAM
GEORGIA PROTECTED AREAS POLICY REVIEW
VISITOR SERVICES & PUBLIC OUTREACH
10/31/22

Project Phase 2.3 – Briefing Paper, Subtopic Non-Personal Services
Lead Author: Andrea Sharon

. Introduction

The Non-Personal Services component of Thematic Interpretation for protected area visitors is comprised of five major sections:

- **Audio Visual Programs:** Feature introductory park films projected in a visitor center to large audiences, shorter programs accompanying introductory information, and museum exhibits with sound and/or images.
- **Social Media:** Non-personal interpretive media based on available internet programs such as park websites, podcasts and postings on Face Book, Twitter, Instagram, Flickr, Linkedin, YouTube, and other platforms.
- **Museum Exhibits:** Non-personal interpretive media which provide in-depth information about natural and/or cultural resources specific to the site, usually located in a visitor center and/or related site museum. The exhibit may contain original items, artifacts, or replicas.
- **Wayside Exhibits:** Non-Personal services interpretive media usually installed outdoors providing safety/information and/or interpretive themes with text and graphics. Low-profile wayside exhibits caption the scenery and provide site specific interpretation of cultural and natural landscapes. They are usually installed at a specific resource location. Up-right wayside exhibits contain information, directional, and safety information. They are usually located at a trail head.
- **Publications, Branding and Graphic Identity**: As the most traditional and low-tech of the various media, publications remain a core element in a park's interpretive program. Written materials (books, guides/maps, site bulletins, site newspapers, etc.) related to park resources produced by the agency and private authors can be available free to visitors or as sales items in a cooperating association book sales area or a concession-managed store. Agency Branding and Graphic Identity guidelines provide templates and style details to organize those publication, exhibits, etc. in an effective professional way and to save time and money by not having to reinvent a design template for each product. Signage is also included under this topic as it is a major element of the visitor experience, safety, and an agency's graphic identity.

II. Overview, Discussion, Demonstration Examples

As with Personal Services, offering a variety of types of Non-personal Services to protected for a safe visit, and other in-depth information to enrich and educate users to the attributes of those areas, keeping in mind that the ultimate goal is to gain new supporters and resource stewards

A. Audio Visual Programs (AV):

Most park visitor centers offer an introductory film about the site's resources and suggest activities that are available, such as hiking, birding, fishing, boating, etc. They often show the park during different seasons and images of wildlife, etc. that the average visitor might not be able to see. Depending on budget and conditions, the presentation could be as simple as images projected on a digital monitor or TV screen, to a feature film projected on a big screen, in a large auditorium with comfortable seating, surround sound, etc.

In addition to an introductory film, AV presentations can be incorporated into museum exhibits, safety messages at a back-country permit station, and audio elements added to wayside exhibits along a hiking trail.

B. Social Media:

Non-personal interpretive media based on available internet programs such as park websites, podcasts and postings on Face Book, Twitter, Instagram, Flickr, Linkedin, YouTube, and other platforms. The National Park Service embraces today's technologies to give digital visitors, partners, and collaborators the information they want where, when, and how they want it. Park visitors can explore national parks from home, school, or on the go.

With the widespread availability of internet service and cell phones, social media has given people the opportunity to learn about, engage, and connect with their national parks and public lands like never before. As a great communication tool, it has definitely changed the way people look at parks, plan trips, and support parks. But the rise of social media has obviously changed how people visit—sometimes adversely. Whether there's overcrowding at overlooks featured on Instagram, or people trying to get the perfect "selfie" photos at all costs. The challenge is holding that fine line—educating people as they are welcomed, leading by example, and continuing to showcase the best of what the parks have to offer. At the same time, encouraging visitors to keep safety in the picture, respect park resources, and take time to enjoy the park.

Social media has a bigger impact on wild places than you might think. Behaviors, that alone have very little impact on the environment, are spread and amplified on social media. Encourage positive behavior! Posting about conservation, Leave No Trace programs, and safety helps spread and support the mission of the National Park Service.

Each park site should have an assigned web coordinator. They should be the primary point of contact for establishing each new social media accounts and for overseeing the park website. NPS social media presences must be branded with NPS design elements provided by the NPS Office of Communications as those elements become available and posted at https://www.nps.gov/subjects/digital/social-media.htm.

C. Museum Exhibits:

Most visitor centers contain a museum with exhibits. They can also offer larger facilities with multi-media experiences that use diverse techniques to interpret park resources, teach concepts, and stimulate interest. Larger parks with multiple resources may have several museums throughout the park that are specific to a topic such as geology, archeology, high-altitude ecosystems, etc.

Museum exhibits require extensive planning, budget to fabricate, install, maintain and replace as needed, and often require climate controlled facilities to protect the exhibit objects. Park staff need to be trained in performing routine maintenance, handling of artifacts, etc. Special considerations may exist that require accommodations for high-altitude ultraviolet light (UV) coming through the windows, temperature and humidity monitoring, potential for insect infestations, and numerous other situations based on the nature and location of the park (*see Addendum #1 for Examples of Museum Exhibits and Addendum #2 Case Study - Museum Exhibit Project at Glacier National Park*).

Some parks may have a position dedicated as a curator that is specially trained in this field and provides on-site expertise for the facility and contents. (The National Park Service Museum Handbook is a reference guide on how to manage, preserve, document, access and use museum collections. https://www.nps.gov/museum/publications/handbook.html)

D. Wayside exhibits:

Waysides give focus to significant features on the landscape and facilitate their connection to larger meanings. They foster a direct interaction between visitors and park resources. The physical landscape feature within the viewing area of the visitor is the "original object," and waysides are the caption. (*see addendum #3 and #4 for illustrations of wayside frames, bases, and the types of wayside panels*.)

Wayside exhibits are sometimes referred to as "rangers on a stick," implying they can provide interpretive opportunities for visitors without actually having a ranger on-site that would require a salary, benefits, annual leave, supervision, etc. Waysides are on duty 24/7!

The planning steps for a wayside exhibit are to:
- locate the featured resource or trail head, keeping in mind access to the site, is it flat or will equipment be needed to modify it, how will the final surface be prepared (gravel, grass, concrete, asphalt, etc.),
- plan for physical accessibility, designated handicap parking, pavement markings and other directional signing,
- select a topic and write themes, body text, and captions,
- select appropriate images/illustrations or arrange for new ones to be made, (acquire copyrights as needed)
- design the panel using the agency's graphic identity program,
- arrange for fabrication,
- installation,
- celebration (public announcements, media, recognition of key figures),
- plan for on-going monitoring and maintenance.
- eventual replacement.

With modern digital technology and UV resistant inks, wayside panels can be printed on a variety of materials that can withstand outdoor conditions such as salt air, intense high-altitude ultraviolet light, mold and mildew and many other adverse conditions found in many national park sites. Popular fabrication techniques are digital prints on high-pressure laminate and new to the industry is a digital print on both sides of an aluminum panel. This way you have a spare on the reverse side as a replacement if the first version gets damaged.

Wayside exhibits require regular monitoring and up keep; removing bird droppings, leaves, sticks, or other debris that may fall on them. It is helpful to have a small backpack filled with cleaning rags and a mild cleaning solution readily available so a staff member or volunteer can readily grab it and head out to the sites where the exhibits are located. The average life-scan for wayside panels is around 10 years. So, if they are not vandalized before then, funding needs to be budgeted for a replacement.

The NPS Harpers Ferry Design Center along with the NPS Graphic Identity Program have very specific detailed design guidelines to produce professional and accessible wayside panels. Many elements have been taken into account in compiling these guidelines, such as how our brain reads a line of text, what text fonts are easiest to read, etc. Via professional visitor surveys it has been found that visitors spend 3 seconds at a wayside if not very interested, 30 seconds if only looking at the graphics and captions, and at the most 3 minutes if really interested. So, the goal is to keep the layout simple, use high-quality graphics, and layer the design with primary and secondary text.

The English language in written form is easiest to read if it is left justified (straight up against the left margin) and ragged right (aligning unevenly along the right margin). Full justification should never be used as it causes reading blocks with unnatural spacing between words; the same goes for centering the text. A mix of capital letters at the beginning of each sentence and for proper names along with lower case for the remainder of the next will assure visitors the easiest readability. Never use all capital letters, except possibly for a short title. For typography, no more than two fonts should be selected; usually a sans-serif style for titles (such as Adobe Fruitiger) and a serif style for body text (such as Clarendon).. Serif typeface fonts have a small line or stroke attached to the end of a larger stroke and are best to use in body text as they give the brain a visual path to the next letter. A sans-serif font does not have this attachment and is best used for titles. (*see addendum #5 for An Example of a Wayside Panel Layout*.)

A protected area, or better yet the agency, should have these guidelines written up before embarking on an in-house design project or when working with a contactor. They should be consistently applied across all media projects to present a professional look, as well as save time and money by not trying to reinvent a style for each project.

E. Publications, Branding, and Graphic Identity:

One of the standard publications found in most parks is a site specific brochure. These are usually distributed at an entrance station after paying an entrance fee, inside the visitor center, or if there are no

staffed locations, then at an information kiosk (*see addendum #6 and #7 for Examples of the Unigrid Brochure Design*).

Since the inception of the NPS Graphic Identity Program, park brochures are designed. based on the Unigrid Design Templates. This way, all of the brochures are the same size and follow the same guidelines for text fonts, style guidelines and formatting, while still expressing the individual flavor of park resources and aligning with the NPS brand and vision. Most brochures are designed at the NPS's Harper's Ferry Center for Media Services (HFC), Harpers Ferry, WV. The professional designers at the center produce top-quality publications and their cartographers are known for their three dimensional maps.

In the mid-1970s, following a major publishing effort related to the Bicentennial celebration, the NPS Division of Publications at Harpers Ferry Center reevaluated its entire program. With the help of noted designer Massimo Vignelli, new standards were developed for a full range of interpretive brochures, books, and posters. Known as the Unigrid Program, the work is considered one of the most significant examples of public sector graphic design in recent years.

The Unigrid style is characterized by bold black bands, the use of two specific typefaces, grid based layouts with strong horizontal orientations, and a limited range of publication sizes. The strategy behind the program is to standardize design so that efforts can be focused on visual content and editorial quality, and especially, to provide the most economical means of managing a high volume program that produces nearly 30 million brochures every year. The approach also strengthens the overall NPS identity and takes advantage of the savings and efficiencies that come with systematic design and production. In 1990, the Unigrid standards were extended to the design of NPS outdoor exhibits.

The NPS logo is a well thought out symbol of the agency. The arrowhead was authorized as the official National Park Service emblem by the Secretary of the Interior on July 20, 1951. The elements of the emblem symbolize the major facets of the national park system. The sequoia tree and bison represent vegetation and wildlife, the mountains and water represent scenic and recreational values, and the arrowhead represents historical and archeological values. The arrowhead is widely recognized and is a protected symbol. Official permission must be obtained for its use. (*see addendum #8 for photographs of the NPS Logo and Related Branding Elements*).

Signage

The way the National Park Service presents itself to those who visit parks says much about the agency, its mission, and the work. In fact, communicating effectively with the public is part of NPS work, essential to its mission, and is one of the agency's proudest traditions.

Signs are the most frequently used means of communicating with park visitors. Entrance signs offer greetings, welcoming visitors and reminding them that the place they are entering is part of a system of parks cared for by the National Park Service. Other signs guide visitors as they travel to or within parks, inspire them to understand and appreciate what they encounter, remind them of their role in caring for parks, direct them to various events and landmarks, and help them have a safe and pleasant stay **(***see Addendum #9 for examples of Park Entrance Signs That Reflect the Character of the Resource*).

Making media accessible to visitors with disabilities makes the products even better and is critical in all stages of the planning, design, and production process. It is also the right thing to do. For more information about programmatic accessibility for National Park Service interpretive media, visit:

- Harpers Ferry Center. Accessibility site
[HFC's Accessibility webpage](#) and https://www.nps.gov/dscw/ds-accessibility-universal design.htm

- Harpers Ferry Center for Media Services;
https://www.nps.gov/subjects/hfc/upload/HFC-Brochure_v4-2.pdf

- NPS Graphic Identity Program:
https://www.nps.gov/subjects/hfc/nps-graphic-identity-and-style-guides.htm

- National Park. Service Style Guides: https://www.nps.gov/subjects/hfc/hfc-editorial-style-guide.htm

- Harpers Ferry Center follows the *Chicago Manual of Style, American Heritage Dictionary,* and its own *HFC Editorial Style Guide* and are guided by the principles of clarity, simplicity, and nonbiased language

III.   Conclusions on Universal Best Practices
- In looking at best practices in park design, incorporating a variety of facilities and locations suitable to contain audio-visual equipment and provide visitors a multi-media experience should be considered. This would include access to electricity or alternative sources of power, some type of protective covering to shield visitors from the sun, rain, etc., and possibly a place to sit if the presentation is more than around ten-minutes long.
- Accessible features for AV programs, such as the use of headphones, audio-description, and language translations should be included in the planning budget.
- AV programs should be of high quality sound and images, kept current with a budget for replacement after it becomes outdated.
- Social media strategies must be flexible to accommodate new needs, priorities, or a project's maturation. They should be reviewed regularly for effectiveness and to determine if new social media tools and techniques may better fulfill communications goals or augment existing efforts.
- The effective use of social media in support of the National Park Service's mission is an important skill set in the 21st century. Equally important, we must have a policy in place that allows us to take advantage of expanding social media communication opportunities while protecting parks, programs, and employees from undue risk, liability, and expense.
- Wayside exhibits should follow established agency design guidelines, be monitored and maintained on a regular basis and have funding built into the budget for eventual replacement.
- Park staff should continually be on the lookout for new publications and appropriate theme-related items for possible additions to their cooperating association sales outlet. Resource management staff should be encouraged to publish their research also as possible sales items.
- All non-personal services interpretive media should be reviewed and evaluated on a regular basis to determine if it is still appropriate for the visitor, in good condition, and continues to reflect management goals.

Addendums:

Addendum #1
Museum Exhibits:

Natural history exhibits at the Multi-Agency Visitor Center in Anchorage, AK.

Archeological exhibits at Bandelier National Monument Visitor Center, NM. Specialized exhibit cases protect artifacts.

Addendum #2
CASE STUDY - Museum Exhibit Project at Glacier National Park:
In 1990, interpretation staff at Glacier National Park in northern Montana started developing a plan for the Logan Pass Visitor Center. Located atop the Continental Divide on the historic Going to the Sun Road in the park, the facility provided interpretation and orientation information as well as natural history books for sale through their Cooperating Association. Due to its' central location, the busy Visitor Center parking lot was full by 10:00 am. Important communication to be conveyed to the public included safety messages such as proper behavior while hiking in grizzly bear country and hiking on delicate sub-alpine flora.
Park management determined there was a significant need for new and improved interpretation. Financially the Glacier Natural History Association (GNHA) provided matching dollars to government grant funds. Because the Logan Pass Visitor Center sales outlet had the highest sales within the park, GNHA was extremely supportive of the renovation work.
Once the funding was secured, the district supervisor attended training on museum exhibit design. They learned how to put together a large black binder, called an exhibit notebook. This notebook would have the images, graphics and photos for the exhibit, including the captions and each item would have a number assigned to it. Once park staff decided on the primary interpretive theme for the exhibits, they began planning in earnest. The theme was "Hardy Yet Vulnerable" referring to the sub-alpine plant species growing at 6,660' elevation surrounding the visitor center. These plants can survive desiccating winds and deep snow only to grow, flower, attract a pollinator, reproduce and go to seed within a six-week time frame. They can withstand environmental elements but not a footstep when the snow is receding, and the ground is wet. "Please stay on the boardwalk" is the significant message here.
Planning consisted of developing a scope of work that identified and details the work is to be accomplished. Next was to conduct research and to locate:
1) Specific photographic images and to secure copyright.

2) Select the plants and mammals for models.

3) Specific line art to be identified and purchased.

Once the necessary line art, photos and objects for the models were obtained, the designer began work. The district supervisor was designated COTR (Contractor Official Technical Representative) and needed to be on site or available to approve work. The design was fabricated, and the models constructed. All the elements were delivered to the park in June of 1992. At such a high latitude and elevation, UV (ultraviolet) resistant curtains needed to be installed on the facility windows. An unanticipated glitch was that the UV curtains did not provide sufficient blockage and the plant models melted and had to be redone! They were reconstructed with a silica type material that could withstand hours of intense UV light in the summer and sub-zero temperatures in the winter.

The installation of the remainder of the interpretive exhibits went smoothly. Part of the exhibits included small sliding doors with information and questions where a visitor could lift a lid for an answer. The interactive exhibits were made to purposefully withstand many inquiring hands. There were minimal high tech elements planned because in the high country a generator was used for power.

Best practices for exhibit design would have also included a built-in evaluation plan to provide feedback on the project. The feedback was mostly anecdotal and unfortunately no social science survey was conducted simultaneously to see if it increased visitors staying on the boardwalk and off the alpine tundra.

Addendum #3
Types of Wayside Exhibits Bases:
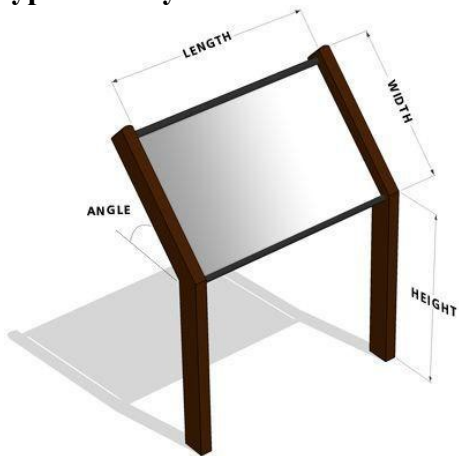
NPS style low-profile wayside exhibit base usually installed near the resource it is interpreting. The base/frames are fabricated of extruded aluminum.
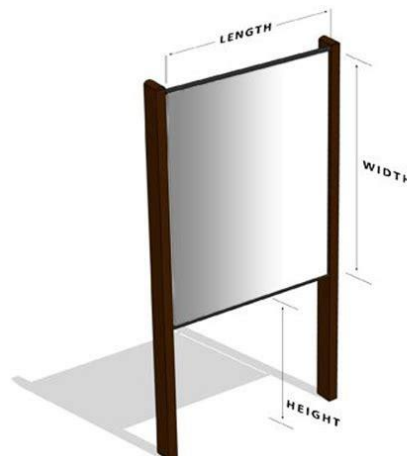
NPS style upright wayside exhibit base usually installed at a trailhead providing informational/ directional and safety information.

Addendum #4

Types of Wayside Exhibits:

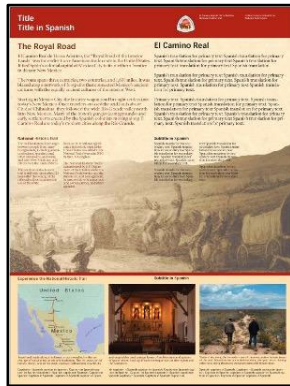*Low-profile wayside exhibit installed at historic site.*

Low-profile 3-D tactile accessible wayside exhibit. The fish is made from a molded resin.

Low-profile wayside exhibit with solar-powered audio message.

Upright informational/ directional wayside exhibits.

Upright informational/ directional bilingual wayside exhibit.

Upright informational/directional wayside exhibits at a trailhead.

Addendum #5
Example of Wayside Exhibit Panel Layout:

The End of the Journey

Between June 1838 and March 1839, more than 15,000 Cherokee trekked west from their traditional eastern homeland to Indian Territory (present-day Oklahoma) over the "Trail of Tears." More than 1,000 died during the journey westward, and there may have been as many as 4,000 that died as a direct result of their forced migration. Once they arrived in their new homeland, Cherokee detachments disbanded at one of seven disbandment depots, the most popular being sites near present-day Sportman, Westville, and Stilwell.

In accordance with the Treaty of New Echota, the new arrivals were promised one year of subsistence provisions, to be distributed at one of five depots in the Cherokee Nation. That year proved exceedingly trying, however. The delivery of provisions proved halting, and most Cherokee spent the year 1839 living in tents and other temporary quarters while awaiting their first year's harvest.

The number was found to be 489 ... I have issued a sufficient quantity of cotton domestic to the Indians for Tents to protect them from the weather ... as they were for the most part separated from their homes in Georgia, without having the means or time to prepare ...

— Lt. Edward Deas, June 1838

Federal Indian Removal Policy

Today

Wayside exhibit along the Trail of Tears National Historic Trail. Following the NPS Graphic Identity Guidelines, best practices for a wayside panel layout includes layering of the text with primary (top section) and secondary (bottom) text and graphics.

Photographs, illustration, maps, quotes, etc. are all important elements resulting in an attractive layout that will keep the reader's attention. Appropriate logos should appear on all media. Also, since this national historic trail is managed as a partnership, the two partners are recognized.

Addendum #6
Graphic Identity and Unigrid Brochures:
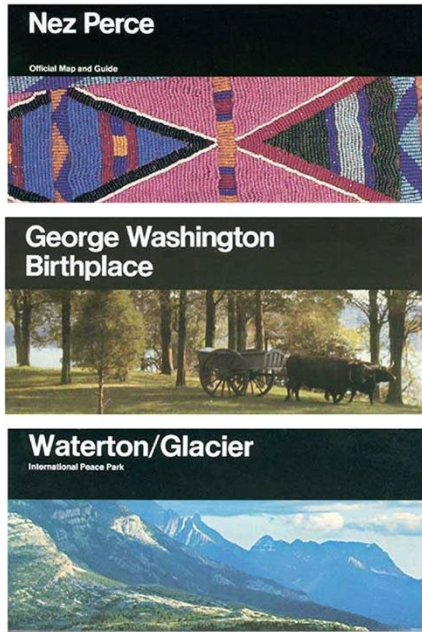
Examples of park brochures using the Unigrid Design templates.
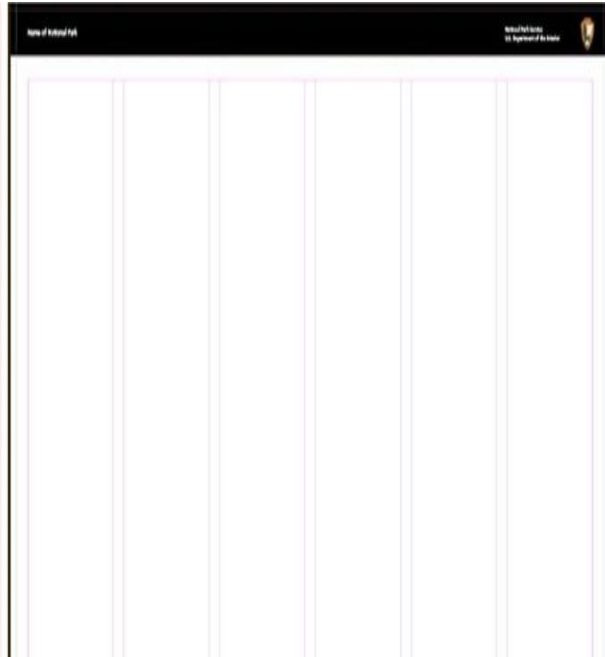
NPS Unigrid design templates provide consistent formats for park brochures, waysides, & other printed media.

Addendum #7
Publications:
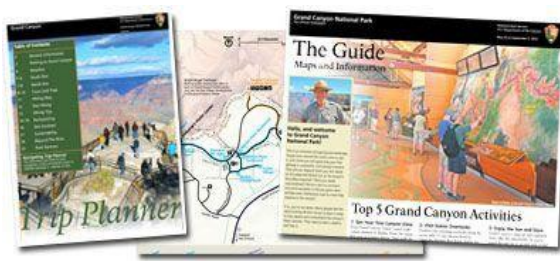
Unigrid designed park-specific guides & newspapers.

Samples of Unigrid designed park publications.

Unigrid designed park newspaper from Katmai NP.

Addendum #8
Branding and Graphic Identity Program:

NPS arrowhead logo, park ranger hat, and park ranger uniforms form the basis of the NPS agency identity.

Addendum #9
Examples of National Park Entrance Signs that reflect the character of the resource:

Bandelier National Monument, NM
Cliff dwellings of the Ancestral Puebloan Culture.

Haleakala National Park, HI
Volcanic crater, stunning. views, endangered species.

Denali National Park & Preserve, AK
Highest Peak in the USA & wide variety of wildlife.

Zion National Park, UT
Spectacular red-rock canyons & mesas.

NOTE: Applicable Director's Orders for Managing Protected Areas

Each Federal Agency, as well as most state, local and nonprofit organizations, responsible for various protected areas, have an established set of written laws, policies, and regulations which provides formal guidance to manage their areas.

Using the United States National Park Service as an example, the Agency's primary reference source for policy is titled: National Park Service Management Policies 2006

This document is the most recent version and a pdf can be accessed at: https://www.nps.gov/subjects/policy/upload/MP_2006.pdf. Currently an updated version is being drafted for future implementation.

The National Park Service Office of Policy coordinates the following:

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• Management Policies
• Laws
• Executive Orders
• Regulations
• Director's Orders & Related Documents
• Policy Memoranda
• Advisory/Operating Committees

Visit the Office of Policy website for more information on NPS policies and how they are developed.

NPS Director's Orders are documents which provide detailed written guidance to help managers make day-to-day decisions.

Two important Director's Orders used in management of Interpretive Services are:

• Director's Order #6, Interpretation and Education
• Director's Order #36, Cooperating Associations and Partnerships

Director's Orders can be assessed at: https//www.nps.gov/policy/DOrders/

An additional site for Cooperating Associations and Partnerships Is "Common Learning Portal" at learning.nps.gov

END OF DOCUMENT

Project Phase 2.3 – Briefing Paper, Subtopic Personal Services
Lead Author: Corky Hays

I.   Introduction.

The Personal Services component of Thematic Interpretation for protected area visitors is comprised of four major sections:

- Visitor Center Contacts: The live interface between park staff and park visitors at an established location which provides visitors with orientation and basic park information necessary for an enlightened and safe park experience.
- Environmental Education: A process which allows individuals to explore environmental issues, engage in problem solving, and take personal action to improve the environment.
- Guided Walks, Talks, Demonstrations, and Roving Contacts: Thematic interpretive presentations which provide in-depth information about natural and cultural resources specific to the site.
- Youth Programs including Junior Ranger Programs: Personal services interpretive presentations which typically address younger audiences in language and with activities appropriate to their age. Includes a variety of "Junior Ranger" programs which promotes conservation and preservation ethics through both live interactions and structured activities.

    Offering a variety of types of Personal Services to visitors to protected areas will provide basic information to enhance their experience, provide tools for a safe visit, and offer in-depth information to enrich and educate users to the attributes of those areas.

II.   Overview, Discussion, Demonstration Examples.

A. Visitor Center Contacts: Typically, a site visitor center provides the first opportunity for a quality, face-to-face interchange between a park visitor and a knowledgeable park employee. This interchange serves as initial orientation to the area, its resources, and to answer basic questions about the park. Park visitors can ask specific questions about the area. Ideally, the exchange is conducted in a friendly, conversational manner. In addition to basic orientation and information, it is important for the employee providing this service to be versed in a wide breadth of specific information about the area and its resources in order to be able to accurately answer visitors' questions. The employee must

be approachable, conversational, and professional in their demeanor to be seen as a credible source of accurate information. The employee can also suggest other sources of information to supplement the personal interchange by offering maps and a variety of printed handouts for future use, and by suggesting museum exhibits, audio visual displays, and specific subject matter books, etc.

Every effort should be made to have this be a positive experience by providing:
- Basic amenities such as drinking water and clean restrooms;
- Access to safety information and up-to-date road conditions; weather forecasts; and any other changing conditions of note;
- Printed material in several languages, especially those languages reflecting an area's visitor-use statistics. These handouts would include park brochures, newspapers with current articles, program schedules, and maps; and
- Easy access to an outlet retailing interpretive and other educational materials.
- *(See addendum # 1)*

A well-functioning visitor center takes years of detailed planning for the physical building as well as for the interpretive exhibits.

B. Environmental Education: Often targets younger audiences, but is not necessarily limited to youth or directed solely to formal school groups. Frequently includes hands-on, experiential learning techniques, and is usually most effective when learning takes place out of the traditional classroom setting in natural surroundings. Major environmental issues may be addressed such as: global warming and climate change; water pollution and ocean acidification; and loss of biodiversity. Possible solutions to help combat these threats may be proposed. Environmental education programs provide a powerful opportunity to inform and educate students who may eventually become friends and allies for park resource protection. *(See addendum # 2 and 3)*

C. Guided Walks, Talks, Demonstrations, and Roving Contacts: Generally, these consist of a formal presentation about a topic specific to the resource(s) of the area. Presenters can enhance the experience through use of the resources and the setting, individual elements specific to the setting, and appropriate props, images or sounds used to illustrate a point.

Important points to remember when doing a live presentation:
- Ensure members of the audience can hear the speaker. With a large group, consider speaking from an elevated position at the front of the group or relocating to a more central position within the group. In some settings, such as in a large auditorium or outdoor amphitheater, an amplification system may be needed.
- If props are being used, ensure all members of the audience can see and experience what is being shown; it may be appropriate to pass the item or multiple examples among the group for closer examination or a tactile or olfactory experience.
- Employ multiple senses (smell, touch, etc.). Encourage listening to natural sounds of the setting, or offer the opportunity to experience a moment of silence.

Demonstrations are a practical, hands-on exhibition and explanation by a subject-matter expert of a skill reflecting some aspect of the park's story. "How to" demonstrations may incorporate individuals with local cultural expertise employed to add unique skills reflective of the area. Examples could include pioneering skills such as fabrication of split oak baskets, making hand-dipped candles or spinning wool into yarn. Other demonstration examples include food-gathering, such as how to harvest shellfish or surf-cast for fish in a coastal area.

Roving contacts are a less formal type of personal interpretation. An employee or volunteer makes roving contacts while stationed at an overlook or other zone or walking a trail to provide onsite information and to answer visitors' questions. The key to effective roving is to be friendly and approachable. The rover should offer an opening greeting or observation to start a conversation. Wearing an identifying hat, vest, or a complete uniform with name tag is also helpful to give a park visitor "permission" and encouragement for an interchange, and to send the unspoken message that the employee is there to help. One could also carry a clipboard with an agency logo on the back as a means of identification.

D. Youth Programs including Junior Ranger Programs: These are a variety of special programs specifically targeting a younger audience. The activity should target the audience with a topic, language, and learning techniques appropriate to the specific age of the group. An example of a special youth program offered at one National Park was a Wild Cave Tour for children, similar to the park's famous Wild Cave Tour for adults. The activity was offered only to children of a certain age span (no adults); each member of the group was issued a headlamp and hard hat. After a short walk down an access trail from the park visitor center, the guide led the limited-size group into a small chamber complete with dripping water, cave formations, and cave crickets clinging to the low ceiling. The special activity offered a sense of adventure and discovery, but still within the sight of the entrance and reassuring daylight.

The National Park Service (USA) hosts a popular "Junior Rangers" activity-based program which invites young visitors to become a member of the National Park Service "family." Junior Ranger programs offer children and their families the opportunity to explore and learn about their national parks, and ways they can help protect parks now and into the future. These programs vary from area to area. Generally, the programs target audiences between 6 and 13 years old, but these age guidelines can vary, and often younger and older visitors participate as well. Most parks have developed an activity book specifically tailored to that area; some programs are based online; and others encourage participants to attend live interpretive activities in the park, such as guided walks and talks. After completing activity requirements, new Junior Rangers usually take an oath and receive a badge or patch recognizing their achievement. There are currently over 200 active Junior Ranger programs in National Park Service areas. Other protected areas managed by Federal agencies and state parks have established similar programs. Adapting this template, the idea has also spread to other countries such as Parks Canada's

Xplorers Program and to some UNESCO World Heritage sites. The Junior Ranger concept serves to inspire the next generation of stewards of protected lands.

III.   Conclusions on Universal Best Practices.

To ensure quality personal services are presented to the visiting public, protected areas should develop a formal multi-tiered training and developmental program for employees and volunteers presenting these activities.

In an area where most of the interpretive programs are presented by seasonal staff (part time employees who supplement permanent staffing during the busy visitor-use season), formal training should be implemented at the beginning of the season before these employees assume their duties. Depending on the breadth of responsibilities, the length of the formal training may vary from several days to a week or more. Protected area managers should invest sufficient time and attention to provide staff with appropriate personal service tools to completely meet the requirements of their job description.

All those presenting personal services should have the opportunity to attend interpretive skills training sessions in the classroom and in the field. These sessions should be conducted by interpretive staff skilled in the topics being taught. Trainers should be able to lead by example, provide illustrations of a variety of interpretive techniques, and reflect current recognized standards for quality interpretation.

For full-time employees presenting various personal services as part of their job responsibilities, more extensive training should be provided on an ongoing basis at interpretive skills workshops, professional conferences, and advanced academic classes or degrees.

Follow-up monitoring activities are integral to ensure individual interpreters are effectively using appropriate interpretive techniques and factual information. Interpretive supervisors should regularly audit public activities presented by visitor center staff and field interpreters. Audits can be as simple as spending a short time observing personal interactions with the public in a visitor center setting, or as involved as attending a guided walk or formal talk as a member of the audience (i.e., out of uniform). It is important that the audit is comprehensive so there is a clear, accurate understanding of techniques used and accuracy of information provided. The ideal means of review is a one-on-one conversation between the employee and supervisor summarizing and discussing the strengths of the presentation, and offering positive suggestions for further development of the activity. Some may choose to add more formal, written comments to the review which can serve as a later reference by the presenter and be used as a reference by the supervisor for future performance evaluation.

Addendums:

Addendum #1
Visitor Centers:

Example:
Grand Canyon National Park
This large national park located in the American Southwest has many miles of paved roads, several entrances/exits and is divided by the vast canyon with a north and south rim. Multiple visitor centers are located throughout the park and several focus on resources specific to their location:

Grand Canyon Visitor Center South Rim
This is a large complex with multiple parking areas and access to the south rim free shuttle bus system. It also offers an easy walk to nearby Mather Point where you can get your first view of the canyon. Staff are available to answer questions and provide interpretive programs and demonstrations. Restrooms and drinking water are easily accessible. Exhibits introduce the significance of the many natural and cultural resources.

Tusayan Pueblo Museum:
This archeological site interprets the remains of a small Ancestral Puebloan village. Traditional handicrafts made by the park's associated tribes are demonstrated and sold.

Desert View:
This small visitor contact site provides an outdoor information desk, cultural demonstrations and a Grand Canyon Conservancy sales outlet.

Verkamp's Visitor Center:
Located in the Village Historic District, the center features exhibits that focus on the Grand Canyon Community and what it was like to live and work there over time. Staff are available at the information desk to answer visitor questions and restrooms and drinking water are available. A Grand Canyon Conservancy sales outlet is available.

Kolb Studio:
Kolb studio is a historic structure situated on the edge of the South Rim of the Grand Canyon. It was operated from 1904 until 1976 as the photographic studio of brothers Ellsworth and Emery Kolb. The Grand Canyon Conservancy now operates an art gallery, book store, and information desk inside the building.

North Rim Visitor Center: (open spring, summer, and fall):
Park rangers staff an outdoor information desk to assist with trip planning and provide information about the day's activities and programs. Restroom and drinking water and a Grand Canyon Conservancy sales outlet are available.

The Grand Canyon Conservancy:
A non-profit park partner since 1932, operating book and gift sales outlets throughout the park. Tax-free purchases help support interpretive programs and resource management projects in the park.

Addendum #2
Environmental Education:

Everglades National Park provides a classic example of the long-lasting effects of a successful environmental education program. Everglades NP pioneered one of the first curriculum-based programs in 1971, bringing area students into the park. For many, it was a first visit and their first exposure to the wonders of a natural ecosystem. Participating children not only learned about natural systems experientially, but they also gained self-confidence, a sense of responsibility, leadership skills, and other life lessons that will serve them well. The program offered both day trips and overnight camping experiences three days in length (two nights) in the park. The successful prototype expanded to two sites: the Tamiami Trail in the northern part of the park and the Royal Palm area to the south. One essential component to success was the in-depth training program for teachers participating in the outings. A follow-up study discovered that many of these early students are now returning to the park with their children to share the same experiences that captivated them in their youth. For in-depth information about this classic environmental education program and measurements of its success, reference the Clemson University study at http://media.clemson.edu

Conversely, less successful environmental education programs failed when parks attempted to implement similar efforts based entirely on the use of unpaid volunteers with no training or experience in environmental education and with reliance on the use of new "gimmick" methodology dependent upon computers, cameras and other similar props, but offering little to no interaction with the outdoors and the natural resources of the park.

Addendum #3
The History and Development of Environmental Education:

In the United States, the modern environmental education movement began to emerge in the late 19th century with the Nature Study movement, which in turn evolved from efforts to promote the field of natural history by naturalists. In the latter half of the 1800s, the western frontier was settled and the continent no longer seemed limitless. As children increasingly grew up in urbanized and polluted environments, interest in fostering a connection to nature grew. Well known naturalists from this developmental era, which bridged into the 20th century, include John James Audubon, Henry David Thoreau, John Muir, and many others.

Environmental education gained greater definition and structure in the United States and elsewhere in the 1970s. As the movement grew and more public lands were identified for varied degrees of preservation, the Environmental Education Act of 1970 led to the creation of the Office of Environmental Education in the US. The United Nations' Belgrade Charter of 1972 and proceedings from the 1977 International Conference on Environmental Education held in Tbilisi in the Republic of Georgia, brought the field of Environmental Education greater international acclaim.

Today, Environmental Education Programs are well established in US Department of Interior agencies, providing citizens with opportunities to make intellectual and emotional connections to their local and national natural and cultural resources.

Addendum #4
Policies for Managing Protected Areas

Each Federal Agency, as well as most state, local and nonprofit organizations, responsible for various protected areas, have an established set of written laws, policies, and regulations which provides formal guidance to manage their areas.

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NPS Director's Orders are documents which provide detailed written guidance to help managers make day-to-day decisions.

Two important Director's Orders used in management of Interpretive Services are:
• Director's Order #6, Interpretation and Education
• Director's Order #36, Cooperating Associations and Partnerships

Director's Orders can be assessed at:
https//www.nps.gov/policy/DOrders/

An additional site for Cooperating Associations and Partnerships Is "Common Learning Portal" at learning.nps.gov

DEPARTMENT OF THE INTERIOR - INTERNATIONAL TECHNICAL ASSISTANCE PROGRAM
GEORGIA PROTECTED AREAS POLICY REVIEW
SUBGROUP: PUBLIC OUTREACH & ENVIRONMENTAL EDUCATION
DATE: OCTOBER 27, 2022, UPDATED DECEMBER 22, 2022, FINAL REVIEW JANUARY 3, 2023

Project Phase 2.3 – Briefing Paper, Subtopic: Public Outreach
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I.   Introduction

Since at least the 1970s, public outreach/public involvement has been an engrained and commonly required component of planning and managing protected lands in the United States (U.S.). Various federal laws, regulations, and agency policies, require U.S. federal agencies to conduct outreach and public involvement in their planning efforts. Most planning efforts and many management efforts do not move forward without some amount of public outreach and public involvement.

For example(s) of NPS policy see the *NPS Management 2006 Policies* found at: https://www.nps.gov/subjects/policy/upload/MP_2006.pdf> (See chapter 1, The National Park Idea/Civic Engagement section 1.7; Also see Chapter 2, Park Planning sections 2.1.3 and 2.3.1.5)

I.   Overview, Discussion, Demonstration Examples

Public outreach is a normal and expected part of U.S. federal planning and management. Usually, the use of federal funds creates the requirement for some level of public outreach in planning and management throughout the U.S. A significant law around public outreach is the 1964 National Environmental Policy Act (NEPA), which requires varying levels of public outreach and public involvement for many if not all federally protected areas.

The Citizen's Guide to the NEPA explains, "with some limited exceptions, all Federal agencies in the executive branch have to comply with NEPA before they make final decisions about federal actions that could have environmental effects. Thus, NEPA applies to a very wide range of federal actions that include, but are not limited to, federal construction projects, plans to manage and develop federally owned lands.…"[1]

A. Resources related to Public Outreach and Involvement

Public involvement and outreach are not a single recipe, meaning one type of approach does not fit all needs. Over the years, practitioners have learned that different kinds of projects and situations are best dealt with by using a thoughtfully crafted mix of approaches. Following are some resources that describe various public participation processes.

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[1] See: https://ceq.doe.gov/docs/get-involved/Citizens_Guide_Dec07.pdf>

The Public Participation Handbook: Making Better Decisions Through Citizen Involvement by James L. Creighton (2005) explains the topic in detail. It is worth noting that this book predates the advent of the Iphone and subsequent ubiquitous use of social media.[2]

Another example handbook by the Prague Institute of Planning and Development (2015), the *Participation Handbook (Executive Summary)* focuses on participatory planning at the city level for a major European city. This book explains why Prague does participatory planning, presents a step-by-step guide and presents several model scenarios and methods.[3]

There are many other guides to learning about public outreach. The organization, AmericaSpeaks, recommends eight key principles to engage diverse groups of people.[4] These are to:

1. Relate to people's lives by crafting your message carefully.
2. Use active outreach strategies that are engaging and interactive.
3. Enlist trusted spokespeople and ambassadors.
4. Touch people multiple times through multiple mediums.
5. Communicate why participation matters.
6. Track who is coming and adjust your strategy as needed.
7. Assume that half of the people who intend to participate will not participate.
8. Take your outreach to social media – especially social networks.

The online site, Organizing Engagement, is dedicated "to advancing knowledge, understanding, and practice at the intersection of education organizing, engagement, and equity." Their site highlights the International Association for Public Participation's "Spectrum of Public Participation" and includes a useful graphic presenting the concept under the "models" section.[5] It is similar but different from Appendix 1 in this paper.

B. The Alaska National Interest Lands Conservation Act (ANILCA)

This briefing paper now turns to explain an example presented by the DOI ITAP in Georgia in 2010. It is very specific to its use associated with the hunting, trapping, fishing and gathering of resources from within protected areas. The authors of this paper believe it is the single most comprehensive model of its kind in the U.S. for protected areas. The example is based on federal law focusing only on the federal lands inside the State of Alaska. This law is codified as 16 USC (United States Code) 3101 et. Seq. the *Alaska National Interest Lands Conservation Act* (ANILCA), it is commonly known and pronounced as "A-nil-ka". This complex law set aside and protects more land (104,000,000 acres / 42,087,306 hectares) in a single law than any ever passed in the history of the United States.

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[2] See: https://smartnet.niua.org/sites/default/files/resources/Public%20Participation%20Handbook.pdf>
[3] See:
https://www.un.org/ecosoc/sites/www.un.org.ecosoc/files/files/en/2018doc/participation-handbook-exec-summary1.pdf>
[4] See: http://www.americaspeaks.org/wp-content/uploads/2011/02/PrinciplesofPublicOutreach.pdf
[5] See: https://organizingengagement.org/models/spectrum-of-public-participation/>

Within ANILCA, there are 15 major sections known as Titles. Title VIII deals "Subsistence Management and Use,"[6] and focuses on the taking, gathering, use and consumption of flora and fauna inside the boundaries of protected areas. The land within the boundaries of protected areas have historically provided food, fuel, shelter, and tools to people living nearby and continue to be actively used today through ANILCA, serving an estimated 130,000 people within Alaska.

Subsistence use under ANILCA can also be simply described as hunting, fishing and gathering (wood, plants, mushrooms and other resources) by local people. With the passage of ANILCA in 1980, and within Title VIII, there are provisions that provide for the public involvement of local people (those determined to be "rural") and a programmatic structure to ensure that this involvement is meaningful and influences the decisions made by State of Alaska and federal agency decision-makers.

A section-by-section listing follows enabling the understanding of the public involvement structure and requirements.

ANILCA Title VIII:

ANILCA Title VIII is further sub-divided into 16 separate "sections" dealing with individual aspects of subsistence use and management. This paper only references those sections which play a role in aspects of public outreach.

Section 801. *The Congress finds and declares that-- (1) the continuation of the opportunity for subsistence uses by rural residents of Alaska, including both Natives and non-Natives, on the public lands and by Alaska Natives on Native lands is essential to Native physical, economic, traditional, and cultural existence and to non-Native physical, economic, traditional, and social existence;*

The terms Subsistence Uses means:

Section 803. *...the customary and traditional uses by rural Alaska residents of wild renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making of and selling of handicraft articles out of nonedible by products of fish and wildlife resources taken for personal or family consumption, for barter, or sharing or family consumption and for customary trade.*

Local and Regional Participation:

Section 805. Local and Regional Participation is mandated. Originally, in 1980, the law required the establishment of six geographically based regions and matching Regional Advisory Councils to fulfill this mandate. In 1992, following a significant State court lawsuit and a subsequent State of Alaska Supreme Court decision the implementation of this section increased the number of regions from six to ten and the number of Regional Advisory Councils increased to ten. The State of Alaska fell out of compliance with federal law, the Federal Government re-asserted

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[6] See: https://www.doi.gov/sites/doi.gov/files/13-anilca-title-8-508.pdf>

authority over Title VIII and established the Federal Subsistence Board to administer the Title VII mandated programs.[7]

Regional Advisory Councils: These councils advise, since 1992, the Federal Subsistence Board which promulgates federal regulations having to do with hunting, trapping and fishing on federal lands in Alaska (approximately 60% of Alaska's land)

Each regional advisory council shall be composed of residents of the region and shall have the following authority (ANILCA section 805 (a)(3)).

The review and evaluation of proposal for regulations, policies, management plans, and other matters relating to uses of fish and wildlife with the region (ANILCA section 805 (a)(3)(A)).

The provision of a forum for the expression of opinions and recommendation by persons interested in any matter related to the subsistence uses of fish and wildlife within the region. (ANILCA section 805 (a)(3)(B)).

*The encouragement of local and regional participation pursuant to the provisions of this title in the decisionmaking process affecting the taking (*harvesting) *of fish and wildlife on the public lands (*protected areas*).* (ANILCA section 805 (a)(3)(C)).

The Secretary of the Interior (who oversees National Parks, Wildlife Refuges and Bureau of Land Management Lands) is required to do several things by Title VIII.

The Secretary shall assign adequate qualified staff to the Regional Advisory Councils and make timely distribution of all available relevant technical and scientific support data to the…councils (ANILCA 805 (b)).

The Secretary, in performing his monitoring responsibility pursuant to §806 and in the exercise of his closure and other administrative authority over the public lands, shall consider the report and recommendations of the regional advisory councils concerning the taking of fish and wildlife on the public lands within their respective regions for subsistence uses. The Secretary may choose not to follow any recommendation which he determines is not supported by substantial evidence, violates recognized principles of fish and wildlife conservation, or would be detrimental to the satisfaction of subsistence needs. If a recommendation is not adopted by the Secretary, he shall set forth the factual basis and the reasons for his decision. (Emphasis added) (ANILCA 805(c))

Section 805(c) has evolved to be a very important provision of the law. It puts a strong influence on the Secretary to accept recommendations from the Regional Advisory Councils. This means that the local representatives play a significant role in determining the detailed contents of what become federal regulations that govern hunting, trapping and fishing on federal lands.

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[7] See the Code of Federal Regulations (CFR) (50 CFR 100.10): < https://www.ecfr.gov/current/title-50/chapter-I/subchapter-H/part-100/subpart-B/section-100.10>

Section 808 For National Parks and National Park Monuments where subsistence use is authorized (most but not all units) ANILCA further established Park and Park Monument Subsistence Resource Commissions.

These seven advisory bodies advise and make recommendations only on a unit specific basis. Although their geographic reach is more limited than the Regional Advisory Councils their influence is designed to offer greater detail on management and use within these most highly protected units in Alaska.

Section 808 (a) *Within one year from the date of enactment of this Act the Secretary and the Governor shall each appoint three members to a subsistence resources commission for each national park or park monument within which subsistence uses are permitted by this Act. The regional advisory council established pursuant to §805 which has jurisdiction within the area in which the park or park monument is located shall appoint three members to the commission each of whom is a member of either the regional advisory council or a local advisory committee within the region and also engages in subsistence uses within the park or park monument. Within eighteen months from the date of enactment of this Act, each commission shall devise and recommend to the Secretary and the Governor a program for subsistence hunting within the park or park monument. Such program shall be prepared using technical information and other pertinent data assembled or produced by necessary field studies or investigations conducted jointly or separately by the technical and administrative personnel of the State and the Department of Interior, information submitted by, and after consultation with the appropriate local advisory committees and regional advisory councils, and any testimony received in a public hearing or hearings held by the commission prior to preparation of the plan at a convenient location or locations in the vicinity of the park or park monument. Each year thereafter. the commission, after consultation with the appropriate local committees and regional councils, considering all relevant data and holding one or more additional hearings in the vicinity of the park or park monument, shall make recommendations to the Secretary and the Governor for any changes in the program or its implementation which the commission deems necessary.*

(b) The Secretary shall promptly implement the program and recommendations submitted to him by each commission unless he finds in writing that such program or recommendations violates recognized principles of wildlife conservation, threatens the conservation of healthy populations of wildlife in the park or park monument, is contrary to the purposes for which the park or park monument is established, or would be detrimental to the satisfaction of subsistence needs of local residents. (Emphasis added) *Upon notification by the Governor, the Secretary shall take no action on a submission of a commission for sixty days during which period he shall consider any proposed changes in the program or recommendations submitted by the commission which the Governor provides him.*

As one can see there is a complex arrangement to appoint members to the Subsistence Resource Commissions. However, over the past 40 years it has mostly worked effectively and brought a healthy diversity of individuals to the commissions. One can also see, in section (b), that the Secretary is strongly influenced to accept recommendations from the Commissions. Thereby, local people do play a significant role in effecting federal government plans and regulations that

affect subsistence uses in National Parks and Park Monuments and more directly their own activities in these protected areas.

II.   Conclusions on Universal Best Practices

- There are many models about public outreach and public involvement. It is important to adapt the approach according to the situation. Consideration of the ideas presented here and additional research can lead to finding the ideas and approaches that fit the needs of and cultural norms of Georgia.

- The ANILCA example from Alaska is one where public involvement is <u>mandated</u> by federal law and has been in place for more than 40 years. It is a complicated but successful model and some of its components might be useful in Georgia. The number of people seeking to participate on the Regional Advisory Councils and Subsistence Resource Commissions regularly outnumber the number of vacant seats to be filled each year (one-third of the seven to ten seats are reappointed annually. Terms last three years). Further, local people have seen the direct impact they have on federal regulations that they must follow to hunt, trap and fish on protected lands. They see, through their own experience, that they have influenced their own way of life and thereby continue to actively engage in the process.

- Providing a written-down coherent approach to public involvement has many benefits: There is a structure, public involvement is conducted in a consistent manner, the government and the public are aware of the process and expectations are shared, there is an increased likelihood of a satisfactory outcome because of these features.

- Public involvement can be carried out with or without guidance from laws, regulations and agency policies. However, experience shows that without written guidance from at least one of these levels of management often a coherent approach is not achieved. The result being that the process differs from place to place, from time to time and from issue to issue. Broadly, the opportunities for public involvement seem to differ from park to park no articulated reason explains why this happens. As a result, the public often become disillusioned and unhappy – sometimes feeling left out of the process – which is the exact opposite of what well intentioned public involvement should strive for.

- In Georgia, regardless of legal mandates for public participation or the absence of such mandates, public outreach should be considered as a useful and desirable management tool for day-to-day management and for the myriad of protected area projects and management issues that arise. Involving the public leads toward long-term interest by the public and to openness by the government, and has the potential to create trust in government management.

- Regionally based, and community based advisory group membership can be tailored to fit the cultural norms as well as to encourage local elders, women and young people (students) to participate. Members should be re-appointed periodically (every 3 years is

recommended) and done so on a rotating basis so some long-term members can continue but at the same time new members can be appointed periodically.

- These groups can occasionally meet at a national scale meeting where people from all over the country come together to listen to and discuss common issues. Ideas are shared and can be taken to home regions/communities for consideration. Sharing and learning can be accelerated in this manner and it has certainly occurred within Alaska. In Alaska, the chair-persons of the Regional Advisory Councils and the Subsistence Resource Commissions have meet together annually to discuss issues and share ideas. These meetings have proven to be very productive.

- See the one-page graphic in Appendix 1. This illustration portrays the range of public participation that may occur. Text above and below the Public Participation line are examples of approaches that are commonly used in the U.S.

Appendix 1: Public Participation
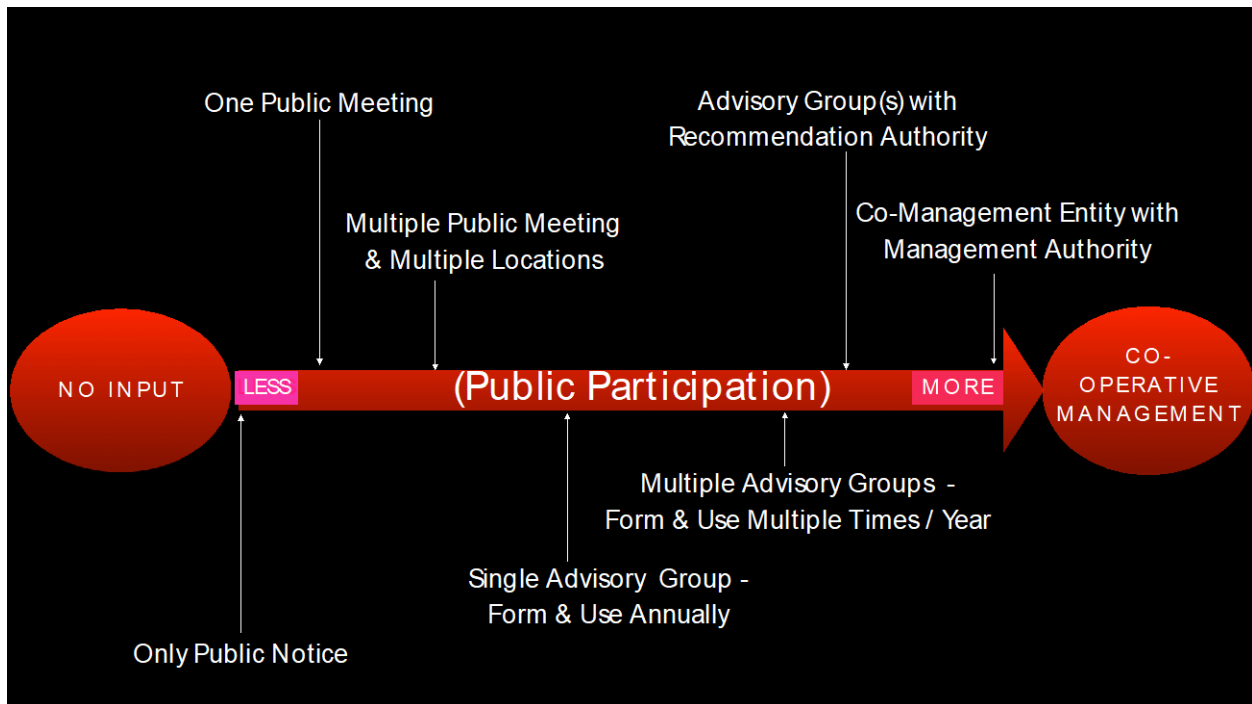
Department of the Interior – International Technical Assistance Program
Georgia Protected Areas Policy Review
Subgroup: Public Outreach & Environmental Education
8/8/2022

Project Phase 2.3 – Briefing Paper, Tourism
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I. Introduction

The Bureau of Land Management (BLM) applies multiple use and sustained yield principles, under the Federal Land Policy and Management Act of 1976, which directs the BLM to manage public lands for a wide variety of uses and values, including "new and emerging values" such as travel and tourism. The BLM has developed multiple plans and programs that provide a framework for implementing sustainable travel and tourism across BLM public lands. Sustainable travel and tourism are among factors considered through the BLM's resource management planning process. Sustainable tourism takes full account of its current and future economic, social, and environmental impacts, addressing the needs of visitors, the industry, the environment, and host communities (World Tourism Organization 2017). The BLM further defines sustainable tourism to include management practices that support sustaining resources consistent with multiple use. This paper discusses best practices for promoting sustainable tourism on national lands, as illustrated through BLM application of a US national strategy.

II. Overview, Discussion, Demonstration Examples

BLM Lands and Tourism: World-Class Opportunities

The BLM manages more than 245 million acres of public land or 10 percent of the nation's surface located primarily in 12 Western states and Alaska, and approximately one-third of the nation's subsurface mineral resources. BLM public lands include 221 wilderness areas, 27 national monuments and 636 protected areas as part of the National Conservation Lands (formerly known as the National Landscape Conservation System), totaling about 36 million acres (150,000 km2). In addition, the National Conservation Lands include nearly 2,400 miles of Wild and Scenic Rivers, and nearly 6,000 miles of National Scenic and Historic Trails.

BLM-managed landscapes provide diverse visitor settings, and different visitor experiences that can result in benefits to the visitor. Economic benefits are realized in the market value of tourism (locally and nationally) and its contributions to the U.S. gross domestic product. Social, cultural, and non-market benefits are equally important. Social and cultural benefits are realized in the enjoyment of individuals and families and by communities that host visitors. Nonmarket benefits are realized in the stewardship of public lands and the ecosystem services that are provided (e.g., clean water, clean air) to the touring public and surrounding communities.

The BLM is in a unique position to expand and deeply enrich the U.S. tourism portfolio. If there is such a thing as the "quintessential" American landscape, it likely lies within the realm of

public lands managed by the BLM. Millions of visitors travel to BLM-managed public lands each year to participate in a wide array of activities within many different types of settings. Activities such as camping, fishing, hiking, hunting, kayaking, mountain biking, off-highway vehicle driving/riding, and wildlife watching are available in settings ranging from primitive to urban. Recreation areas and National Conservation Lands provide opportunities for visitors with many different interests to explore and recreate. This combination of diverse activities available within a wide variety of settings leads to quality experiences and beneficial outcomes for individuals, communities, economies, and the environment. The diverse activities authorized on these public lands generated $111 billion in economic output across the country in fiscal year 2019—more than any other agency in the Department of the Interior. These activities also supported more than 498,000 jobs. Of that, recreation generated $7.7 billion and supported approximately 54,000 jobs. Expanding outreach in local, national, and international tourism markets to promote BLM-managed public lands would be a sound investment in America.

Promoting the United States

Unlike many other nations whose governments aggressively promote travel and tourism to their countries, the Federal government of the United States did not have a sustained international promotion campaign since the closing of the U.S. Travel and Tourism Administration. To increase America's market share of national and international tourism, former President Barack Obama launched a national campaign.

President Obama signed the Travel Promotion Act (Public Law 111–145) into law on March 4, 2010. The legislation created the Corporation for Travel Promotion, the nation's first public-private nonprofit partnership corporation that would not be an agency or establishment of the United States Government. The Corporation (d.b.a. Brand USA) was/is tasked to spearhead a globally coordinated marketing effort to promote the United States as a premier travel destination. To fund Corporation activities, the Act provides for a fee of $10 for use of the Electronic System for Travel Authorization (ESTA).

President Obama also created the Task Force on Travel and Competitiveness to increase domestic and international travel and tourism and job creation in the United States. Former Secretary of Commerce John Bryson and former Secretary of the Interior Ken Salazar were assigned to oversee the Task Force, which would develop strategies to promote visits to our national treasures: our national parks, wildlife refuges, cultural and historic sites, monuments, and other public lands. The Task Force completed and submitted its recommendations to the Secretaries in March 2012.

US National Travel and Tourism Strategy

The *National Travel and Tourism Strategy* is the blueprint for expanding travel to and within the United States, laying out goals to be taken in five key areas. It set a goal to increase American jobs by attracting and welcoming 100 million international visitors annually by the end of 2021, more than a 50 percent increase over the number expected in 2012. These international visitors would spend an estimated $250 billion per year, creating jobs and spurring economic growth in communities across the country. The national strategy guides federal agencies to implement the following actions:

1. Promote domestic and international tourism throughout the United States, thus increasing the U.S. market share of worldwide travel and supporting job creation across the nation.
2. Communicate tourism opportunities in the United States to a larger domestic and international audience.
3. Continue to make travel and tourism a priority.
4. Coordinate efforts among federal agencies, and work with partners in a collaborative effort to meet future demand.
5. Develop detailed implementation plans to realize the promise of the national strategy's recommendations.

To accomplish these action items, the *National Travel and Tourism Strategy* identified the following five goals and multiple national and BLM-specific strategies. I summarized the Strategy to help readers understand the overall complexity of the document and because it is the foundation for the supporting BLM tourism and recreation plans listed below.

Goal 1: Promote the United States

1. Increase U.S. travel and tourism exports and encourage Americans to travel within the United States and its territories.

2. **Strategy 1:** Provide a welcoming entry experience to foreign visitors.

   National Actions
   1. Actively encourage visitors to come to the United States by communicating a welcoming message.
   2. Engage officials at the highest levels of the Federal Government to communicate that the United States wants visitors, and provide accurate information, a welcoming message, and an invitation to visit.

   BLM Actions
   1. Welcome visitors (domestic and international) to BLM-managed public lands and provide information about visitor settings and experiences through relevant BLM forums (e.g., blm.gov, recreation.gov, and individual BLM destinations) and with travel and tourism partners.
   2. Ensure key travel information is delivered in high demand languages.
   3. For sites with capacity to accommodate additional visitation, highlight local and off-the-beaten path attractions, services, and community and cultural interests that sustain and enhance the local geographical character of a place.
   4. Provide visitors with online georeferenced BLM recreation maps, as appropriate. Share this data with state tourism departments, domestic and international travel and tourism partners, and other travel information outlets.
   5. Ensure BLM travel data sources (e.g., Recreation Management Information System, recreation.gov) are accurate and updated.
   6. Work with private and nonprofit travel and tourism partners (e.g., Brand USA, U.S. Travel Association, local chambers of commerce) to ensure that data on BLM visitor settings, visitor experiences, and access are accurate and up to date.

7. Work with the federal interagency Recreation One Stop team and other organizations to ensure that BLM information about visitor settings and visitor services is available to private and nonprofit travel and tourism partners.
8. Maintain BLM web pages, social media outlets, and visitor information at BLM visitor destinations using: – Contemporary travel and tourism content and outreach technologies. – Travel and tourism use and trend reports. – Travel access and safety information. – Multilingual interpretive and educational products. – Input and technical assistance from travel and tourism partners.
9. Explore the use of crowdsourcing as a future data source with partner organizations.
10. Develop shared travel and tourism federal messaging initiatives by collaborating with federal travel and tourism partners.
11. Expand BLM visitor outreach by developing messaging and media partnerships with domestic and international travel and tourism partners.

3. **Strategy 2**: Coordinate with Brand USA and leverage partnerships.

   National Actions
   1. Coordinate federal promotional efforts with Brand USA's marketing campaign. Provide information to Brand USA in support of its marketing and communication programs and activities.
   2. Coordinate promotional efforts with the travel and tourism industry. Use new and existing agreements to conduct joint promotions that match the unique assets and messages of the Federal Government with the resources and expertise of travel and tourism businesses.
   3. Join non-federal tourism authorities in place-based and activity-based promotional campaigns. Provide grants and technical assistance to qualified public sector entities to support their efforts to attract and serve additional visitors

   BLM Actions
   1. Support the Tourism Policy Council's travel and tourism priorities concerning the Federal GovUse new and existing BLM partnerships with state, local, tribal, and territorial governments, and public-private partners to create and deliver content about public lands and waters.
   2. Identify key travel and tourism partners. Collaborate on shared goals, as appropriate.
   3. Share updated content for Brand USA's Road Trip, Great Outdoors campaigns, My Public Lands, and other market themes.
   4. Provide Brand USA with an overview of BLM museum collections and their locations.
   5. Share relevant social media content with Brand USA.
   6. Use and add to a publicly accessible BLM image library.
   7. Participate in existing state travel and tourism conferences and existing state recreation/tourism roundtables.
   8. Develop state recreation and tourism roundtables where they do not exist, as appropriate.

9. Develop a national agreement with the American Indian Alaska Native Tourism Association (AIANTA) to facilitate cooperative travel and tourism work with tribal communities that implements the "BLM Travel and Tourism Action Plan " and AIANTA's national strategy.
10. Develop a tribal travel and tourism guide in coordination with AIANTA and as part of implementation of BLM Handbook H-1780-1, "Improving and Sustaining BLM-Tribal Relations."

4. **Strategy 3**: Enhance federal promotional efforts.

   National Actions
   1. Establish a unified federal promotional effort in the international marketplace to encourage travel and tourism. Coordinate agency promotional efforts and use personnel and programs to amplify the message. Coordinate travel policy communications as well as marketing messages and programs.
   2. Increase exposure by travelers and potential tourists to promotional materials for federally managed destinations. Cross promote American cities, parks, museums, and other points of interest. Develop and promote itineraries designed to appeal to visitors with interest in certain subjects, activities, historic events, or anchored by well-known and popular destinations.

   BLM Actions
   1. Provide and enhance information about BLM visitor settings and attractions by providing a variety of updated messaging and media content to travel and tourism partners.
   2. Participate in interagency promotions of the Great American Outdoors by providing information about the visitor settings and visitor experiences managed by the BLM.
   3. Use new technology and social media to provide visitor information and communication materials about BLM destinations for international and domestic visitors.
   4. Engage travel and tourism providers on the importance of applying sustainable travel and tourism techniques on BLM-managed public lands. Ask partners to:
      – Apply and teach sustainable tourism practices.
      – Tell the unique stories of BLM public lands and gateway communities.
      – Manage visitor numbers.
      – Provide and promote outstanding visitor settings and experiences to domestic and international visitors.
   5. Coordinate with geotourism councils and other travel and tourism partners, including gateway communities, to highlight visitor settings and visitor experiences available within the BLM's recreation areas and National Conservation Lands.
   6. Provide support for government (e.g., federal, state, tribal, local) and private partners leading familiarization tours for international and national travel providers.

7. Provide travel and tourism partners with electronic access to select BLM messaging and media materials.
8. Highlight unique BLM visitor settings and visitor experiences that can be accessed within a short air connection or driving tour from U.S. national visitor gateways.
9. Partner with national, state, tribal, and local tourism service providers as they build visitor itineraries.

5. **Strategy 4:** Provide user-friendly planning tools and resources.

National Actions
1. Ensure data on federally managed websites is comprehensive, reliable, and accessible to individual visitors and to application and program developers. Fully utilize existing databases to connect potential visitors with the range of sites, experiences, and resources available to travelers.
2. Standardize and improve trip planning sites operated by federal agencies. Explore cost-effective options for providing planning materials and tools in multiple languages.
3. Use market research conducted by Brand USA and the Department of Commerce to analyze the demand among potential travelers for new or improved trip planning tools. Develop focused plans for development of new tools based on this analysis.

BLM Actions
1. Participate in the development of trip planning information for international and domestic tourists to visit BLM-managed public lands and waters. Provide information that highlights American heritage and history, rural destinations and local visitor services, and recreation opportunities of interest to groups that are underrepresented on public land.
2. Use emerging technologies and a variety of methods to deliver portable BLM data and information that partners can use to develop their own travel planning tools.
3. Ensure that externally available BLM data is accurate, current, and consistent.
4. Collaborate with local and national geotourism councils to develop and maintain BLM visitor services content used for online interactive destination maps; itinerary-building tools, apps, and stories; and other geotourism visitor information.
5. Continue to ensure that Google Maps includes accurate boundary and visitor information for BLM-managed public lands and waters.
6. Expand the visibility of BLM online interactive recreation maps by sharing widely with travel and tourism partners and visitors.
7. Partner with tribal, national, regional, state, and local travel and tourism partners, and use emerging technologies.
8. Encourage BLM managers to provide the public with trip planning services, permits, and information about BLM-managed public lands and waters via the Recreation One Stop team and other organizations.
9. Maintain partnerships with federal travel and tourism partners through the Federal Recreation Council and other organizations.

10. Integrate volunteerism opportunities into the BLM Volunteer Program, citizen science, and volunteer vacations provided through partner organizations.

6. **Goal 2**: Enable and Enhance Travel and Tourism to and within the United States

   1. Reduce barriers to trade and make it safer and more efficient for visitors to enter and travel within the United States and its territories.

      National Actions
      1. Integrate volunteerism opportunities into the BLM Volunteer Program, citizen science, and volunteer vacations provided through partner organizations.
      2. A safe and reliable domestic transportation infrastructure allows U.S. citizens to travel within our country and connects visitors to the many wonderful destinations located away from major ports of entry. To accommodate growing demand by domestic and international travelers, our transportation infrastructure must be dependable, safe, and efficient.
      3. Federal grant programs and discretionary funds support the development of pedestrian and bicycle networks and alternative transportation in cities and towns, on federal and tribal lands, and America's byways.
      4. Infrastructure improvements directed at local residents and commuters, as well as those that provide access to rural areas, also enable travelers to visit less prominent areas and to utilize alternative transportation modes.

   2. **Strategy 1:** Maintain and improve transportation infrastructure.

      National Action
      1. Enable travelers to see America's special places that are off the beaten path through programs that increase access and awareness.

      BLM Actions
      1. When aligned with meeting visitor management goals, provide information about access to rural and lesser-known areas. For remote areas, include safety messages.
      2. Work with local gateway communities and local chambers to promote BLM visitor information.
      3. Increase access to BLM visitor destinations by expanding the number of recreational maps available online, identifying major access routes and recreational points on the interactive maps, and sharing map data with domestic and international travel and tourism partners.
      4. Prior to promoting access routes (e.g., self-drive, tour buses), ensure route networks connecting gateway communities to BLM destinations can serve as primary access routes for domestic and international visitors. Incorporate the needs of different tourism markets and associated access needs as part of BLM travel and transportation management planning and decision-making processes.
      5. Update signs for both domestic and international visitors (e.g., use international symbols).

6. Link gateway communities to BLM-managed public lands by establishing partnerships with local governments and travel and tourism partners to develop and improve bicycle and pedestrian pathways for locals and visitors.
7. Continue to maintain and improve the national system of BLM backcountry byways, and expand involvement in state and national scenic byways/ bikeways programs as proponents or as partners.
8. Maintain and improve BLM roads, trails, and facilities associated with nationally 16 Aravaipa Canyon Wilderness, Arizona designated scenic and historic trails.

7. **Goal 3**: Provide World-Class Customer Service and Visitor Experience

   1. Provide a high-quality visitor experience for U.S. and international visitors to achieve high customer satisfaction and inspire repeat visits.

      National Actions
      1. The Federal Government can use its resources to ensure that we meet a high standard of customer service and provide memorable visitor experiences that will generate new and repeat visitation.
      2. The challenge for federal agencies is to provide information and services to a wide variety of visitors from across the country and the world. Successful visitor services use up-to-date research about visitor behavior and preferences to facilitate a positive experience by providing services, assistance, information, educational opportunities, and advice, but also the space and freedom to allow visitors the opportunity to discover and be inspired.
      3. Isolation is another challenge; visitors would benefit from greater collaboration among federal units and gateway communities to design and cross-promote complementary experiences and itineraries.
      4. Visitation must also be managed responsibly to avoid degrading the world-class resources visitors expect to see and experience.

   2. **Strategy 1**: Improve visitor services at federally managed sites.

      National Actions
      1. Develop additional tourism circuits near top destinations to encourage travelers to expand their itineraries to lesser-known destinations, to benefit gateway communities and add valuable vacation days.
      2. Expand the use of new technology and new media to provide customized visitor information for different cultures, ages, languages, and interests and to decrease the demands on staff at overburdened sites and times.
      3. Complete strategic road upgrades and reconstruction, public transit development and multimodal connections, land and easement acquisition, and improved access to information about opportunities for recreational, historical, and cultural experiences. Streamline permitting processes for camping or outfitting in similar geographic locations.
      4. Develop community-based tourism collaborations in key destination markets, especially those with scenic byways, coastal resources, national

scenic and historic trails, wild and scenic rivers, and other natural and cultural attractions.

5. Partner with local communities and engage with tribes to promote tourism and provide cultural experiences where welcomed and in a manner sensitive to cultural traditions and beneficial to the communities visited.

BLM Actions

1. Create volunteer "ambassadors" at popular BLM destinations to provide a more personalized experience for domestic and international travelers.

2. Showcase BLM visitor settings and visitor experiences by working with federal and private travel and tourism partners to host thematic natural and cultural resource-focused events and activities (e.g., wildlife and youth education events, Public Lands Day, National Fossil Day, geotourism fairs and festivals, natural night skies programs).

3. Strive to provide visitor service infrastructure (physical and informational) that:
   – Is visitor ready.
   – Supports the projected site capacity and diversity of visitor experiences.
   – Meets the needs of domestic and international visitors.

4. Use the Interagency Visitor Use Management Council's "Visitor Use Management Framework: A Guide to Promoting Sustainable Outdoor Recreation" to help managers collaboratively develop long-term strategies for providing access, connecting visitors to key visitor experiences, protecting resources, and managing visitor use.

5. Use site planning and project development to identify service needs and expectation gaps.

6. Develop educational and interpretive materials that explain to visitors the concepts of sustainable tourism and public land stewardship.

7. Complete development of an online permitting tool to help streamline the special recreation permit application process.

3. **Strategy 2**: Foster a skilled hospitality and tourism industry workforce.

National Actions

1. Develop and utilize messaging to communicate that the United States welcomes visitors to experience our diversity of world-class destinations, to attract new international visitors, and to encourage more Americans to vacation within the United States.

2. Engage with travel and tourism industry leaders to develop new competency models.

3. Cross-train private sector hospitality and federal recreation and visitor services workforces through collaborative curriculum development and delivery.

4. Use technology and new media to foster information sharing, dialogue, and partnerships.

5. Target tourism-related businesses to provide youth with summer job experiences, including paid positions, internships, and mentoring/shadowing opportunities.

BLM Actions

1. Cross-train travel and tourism partners and BLM visitor services staff through collaborative curriculum development and delivery.
2. Collaborate with travel and tourism service providers to identify opportunities for youth and young adults to work with the BLM, while providing travel and tourism services. Include a wide range of opportunities, from education and interpretation programs to site and facility management.
3. Collaborate with travel and tourism partners to provide formal and informal training regarding front-line visitor service skills, travel and tourism trends, visitor data interpretation, rules and regulations, outreach, and message development and delivery.
4. Partner with college and university tourism and visitor services programs to provide university student internship opportunities.
5. Develop a variety of travel and tourism training opportunities in partnership with federal and private sector travel and tourism partners, at the national, state, and local level.

4. **Strategy 3:** Support small business in travel and tourism.

National Actions

1. Develop and coordinate a targeted approach at the federal level to support small- and medium-sized travel and tourism businesses.
2. Expand outreach and education. Share content and seek options for working with federal agencies and tourism promotion organizations, including federal land and water managers and the American Indian Alaska Native Tourism Association.
3. Develop co-marketing campaigns with those businesses that are licensed to provide recreation and tourism services on federal lands, waters, and shores.

BLM Action

1. Support gateway communities and their convention and visitor bureaus with the development of their travel and tourism plans, by providing information on recreation and other opportunities and by participating in 20 travel forums and events.

Goal 4: Coordinate Across Government

1.Prioritize and coordinate support for travel and tourism across the Federal Government.

1. Successful implementation of the national strategy requires sustained, high-level commitment throughout federal agencies, which in turn will depend on continued recognition of travel and tourism as a priority for the Federal Government.

2. In addition to better coordination within the Federal Government, we need to better coordinate with the private sector and state, territorial, tribal, and local governments.

3. Better communication and the dissemination of best practices throughout all levels of government and the private sector will strengthen tourism development.

4. Agencies should focus resources in areas of common interest and emphasize linkages among resources and connections to a larger American story, such as with itineraries and geographic mapping efforts.

5. **Strategy 1:** Establish travel and tourism as a U.S. Government Priority.

National Actions
1. Institute a formal and inclusive leadership structure for travel and tourism within government and to coordinate with federal agencies to effectively implement the National Travel and Tourism Strategy.
2. Conduct outreach with public and private partners. Hold a federal summit on travel and tourism and an annual travel and tourism event to foster communication among federal agencies and leaders of state travel offices, destination management organizations, and trade associations.
3. Study and implement best practices. Engage federal agencies in dialogue with other countries on best practices in travel and tourism.

BLM Actions
1. Support the Tourism Policy Council's travel and tourism priorities concerning the Federal Government by continuing to serve on the council's travel and tourism technical working groups.
2. Provide an annual progress report to the National Travel and Tourism Office about implementation of the national strategy.
3. Continue to coordinate with Brand USA, Western States Tourism Policy Council, America's Great Outdoors, American Indian Alaska Native Tourism Association, Recreation One Stop, American Recreation Coalition, and other federal, state, and local travel and tourism industry partners.
4. Study and implement travel and tourism best management practices by engaging in dialogue with domestic and international travel and tourism partners.

6. **Strategy 2**: Support tourism development.

National Actions
1. Focus resources on expanding the travel and tourism industry throughout the United States while ensuring the stock of natural and cultural resources is adequately protected and understood in the context of a uniquely American experience.
2. Coordinate and publish datasets. Improve the presentation of data by providing effective geotourism information and map products across jurisdictions.
3. Engage the public. Involve residents as stewards and ambassadors in preserving, developing, promoting, and managing tourism resources as a source of community pride and economic empowerment.

BLM Actions

1. Provide content for travel and tourism publications by collaborating with government and private travel and tourism partners.
2. Develop and share messages about stewardship of public lands and resources, visitor settings and experiences, and recreation opportunities with grassroots geotourism councils and other local marketing and networking organizations.
3. Integrate management of travel and tourism into the BLM land use planning process. Address the demand for domestic and international visitor settings and experiences when making land use allocations and decisions. Assess impact on BLM natural and cultural resources and travel and tourism partners.
4. Improve data collection and analysis through public-private partnerships.
5. Engage with the public by participating in national, regional, state, and local travel and tourism forums.

Goal 5: Conduct Research and Measuring Results

1. Collect and analyze data to support decision-making in the public and private sectors and allow the Federal Government to better measure the effectiveness of its efforts to increase travel and tourism.
2. Carry out product development, marketing strategies, investment plans.
3. Transportation planning, and competitiveness tracking all require good data and information.
4. Information on travel and tourism is the basis of sound policy and informs business decisions.
5. Strategic planning for and performance measurement of the travel and tourism industry depends on the availability, validity, consistency, and reliability of statistics and information.

Strategy 1: Conduct research.

National Actions

1. Work with the travel and tourism industry to collect and analyze data to support decision-making in the public and private sectors and allow the Federal Government to better measure the effectiveness of its efforts to increase travel and tourism.
2. Identify data needs. Develop an inventory of available research and identify existing data gaps.
3. Partner to fill data gaps. Utilize available federal and private sector research resources and work cooperatively with the private sector to address identified gaps.
4. Leverage data with other resources. Use secondary data including travel industry data, government data, and aviation data.
5. Work with the travel and tourism industry to collect, analyze, and disseminate data.
6. Develop visitor information at federal sites. Develop methodology to provide data to guide management of federal sites that will help ensure visitor safety and satisfaction. As part of that methodology, collect data on

visitor trip planning habits to inform federal efforts to develop trip planning tools and resources.

BLM Actions
1. Identify BLM travel and tourism data needs and provide an appropriate BLM representative to participate on the Tourism Policy Council's research, data, and metric working group.
2. Support the BLM's planning and management needs by accessing or collecting relevant data (e.g., environmental, economic, and social science data resulting from travel and tourism on BLM-managed public lands). Analyze the travel and tourism impact on BLM-managed public lands and waters by integrating BLM social and economic data needs into interagency travel and tourism data collection and analysis.
3. Use geospatial data to track visitor use trends over time to inform BLM decisions.
4. Use BLM travel and tourism data to support planning with government and private partners.
5. Support the collection of information, with approval, as appropriate, by the Office of Management and Budget, related to preferred activities, experiences, and outcomes for visitors and adjacent communities to better serve the public's interests.

BLM Travel and Tourism Action Plan

The National Strategy identified 79 BLM actions. As a result, the BLM produced its *Travel and Tourism Action Plans* (**TRAVEL AND TOURISM ACTION PLAN),** a strategic plan to implement the action to help the BLM attract and welcome domestic and international visitors to the United States and stimulate job creation. The Plan provides a comprehensive framework for managing travel and tourism. In pursuit of BLM's multiple-use mission, it identifies sustainable tourism-based actions the BLM will take to provide economic benefits to local communities, support sustainable tourism, and conserve America's public lands for future generations.

BLM Recreation Strategy - Connecting with Communities

The BLM recreation strategy titled *Connecting with Communities Strategy* (link attached) provides overall strategic guidance for the BLM's Recreation and Visitor Services Program. Originally developed in 2015, the 2020 update lays the groundwork for the recreation program into the future and recognizes recreation opportunities and tourism are interrelated. The goals of the Strategy are to bolster economic opportunities in local communities, deliver outstanding recreation experiences to visitors, and sustain recreation settings on public lands. Many of the goals outlined in the *National Travel and Tourism Strategy* relate directly to the actions presented in the Connecting with Communities Plan.

BLM's Tourism and Community Services Program

The BLM's Tourism and Community Services Program promotes public lands to sustain recreation and domestic tourism opportunities. Under the direction of the *National Strategy*, the BLM seeks to engage with federal, tribal, and private travel and tourism partners to enhance visitor services and experiences while conserving public lands and waters for future generations.

Conclusions and Universal Best Practices

The universal best practices are summarized in the *National Travel and Tourism Strategy* above, which identified 54 national actions and 75 BLM actions to promote America's national treasures, national parks, wildlife refuges, cultural and historic sites, monuments, and other public lands, and increase domestic and international travel and tourism and job creation in the United States. The *Strategy* set a goal to attract 100 million international visitors annually by 2021, and anticipated these international visitors would spend an estimated $250 billion per year, creating jobs and spurring economic growth in communities across the country.

The two-year Covid pandemic delayed that goal, but the world is entering a renewed interest and confidence in international travel, and it may be time to reset America's tourism objectives to promote our nation's spectacular and diverse landscapes. Also, the timeframe to implement new U.S. national and international tourism initiatives could be vastly accelerated and more efficient given the tremendous advances in technology and the ability to instantly communicate globally. The Republic of Georgia could adapt/modify America's *National Travel and Tourism Strategy* actions to promote or market their specific attractions. Georgia's Autonomous Republics, Regions, and Municipalities could implement versions of the BLM actions to meet their specific regional tourism aspirations.

These "Best Practices" can guide the BLM's, the Department of the Interior's and the Republic of Georgia's management actions to increase recreation opportunities, marketing and tourism in our respective countries. Promoting the beautiful and stunning landscapes and natural resource wonders ultimately will benefit the people of our great countries, and enhance, support, and expand our economies. Throughout my 32 years with the BLM, I have been selected for and involved in the marketing, advertising, and tourism-related activities for some of the BLM's most high-profile and sometimes controversial projects and programs. And while our strategic actions may be very effective, we might sometimes overlook the obvious.

1. Solicit the support and commitment from management for full funding and dedicated full-time staff, or at least staff professionals at the State, District or Regional Office as the case may be, with collateral duties and training to perform these critical tasks.
2. Invest in memberships with local, state and national Tourism organizations, and international tourism associations for expanded outreach and exposure. These associations offer members many beneficial opportunities to help promote their business/organization (California Travel Association (CalTravel) represents California's travel and tourism industry (caltravel.org); European Tourism Association (ETOA) a member–driven community of more than 1,100 organizations, is the trade association for tour operators and suppliers in European destinations, from global brands to local independent businesses (https://www.etoa.org/).
3. Attend tourism annual conferences to promote and market your respective agency and its natural resources.
4. Tourism, marketing, and recreation are intricately entwined. In the United States, there are up to six national recreation organizations that represent thousands of

recreation business owners and manufacturers, and the tens of thousands sport enthusiasts who buy their products and look to the public lands for recreation.

5. The BLM should be a member and attend formal meetings of recreation organizations to promote recreation on public lands. Agencies need to allocate funds to attend these meetings.

6. Europe also has major travel and tourism organizations that can help expand tourism markets: the European Leisure and Recreation Association (www.tandfonline.com), European Outdoor Group ((https://europeanoutdoorgroup.com), and European Boating Association (https://eba.eu.com).

7. Implement agency-specific tasks through the BLM *Travel and Tourism Action Plan,* which is the summary of BLM Actions identified in the *National Travel and Tourism Strategy.*

8. These actions will help the BLM and its partners attract domestic and international visitors to discover and experience BLM-managed public lands/National Conservation Lands.

9. Renew memberships every year and collaborate with other tourism and recreation organizations such as: Outdoor Recreation Roundtable (the nation's leading coalition of outdoor recreation trade associations and businesses contributing to a $689B recreation economy) (https://recreationroundtable.org); Recreational Equipment, Inc. (REI), an American retail and outdoor recreation services corporation; the National Recreation and Park Association (NRPA), the nation's leading not-for-profit organization dedicated to building strong communities through the power of parks and recreation (nrpa.org); American Camping Association; and many more.

10. Promote domestic and international tourism throughout the United States, thus increasing the U.S. market share of worldwide travel and supporting job creation across the nation.

11. Communicate tourism opportunities in the United States to a larger domestic and international audience.

12. Continue to make travel and tourism a priority.

13. Coordinate efforts among federal agencies, and work with partners in a collaborative effort to meet future demand.

14. Develop detailed implementation plans to realize the promise of the national strategy's recommendations.

References

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- NATIONAL TRAVEL AND TOURISM STRATEGY
- RECREATION
- NATIONAL CONSERVATION LANDS
- Connecting with Communities Bureau of Land Management Recreation Strategy (blm.gov)
- https://blog.trade.gov/tag/task-force-for-travel-and-competitiveness/
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- https://2010-2014.commerce.gov/node/11579.html
- https://www.govinfo.gov/content/pkg/PLAW-111publ145/pdf/PLAW-111publ145.pdf
- The BLM: A Sound Investment for America 2020 (Attached)

DEPARTMENT OF THE INTERIOR - INTERNATIONAL TECHNICAL ASSISTANCE PROGRAM
GEORGIA PROTECTED AREAS POLICY REVIEW
INSTITUTIONAL STRENGTHENING
SUBGROUP Visitor Services & Public Outreach
LEAD AUTHOR ALAN ROBINSON, TEAM MEMBERS ANDREA SHARON, CORALEE HAYS
DATE 11.2.22
Project Phase 2.3 – Briefing Paper, Subtopic Volunteers

VOLUNTEERS
(USE OF VOLUNTEERS IN PARK PROGRAMS)

.Introduction

The use of individual volunteers or organized volunteer groups within the Department of the Interior and other Federal land management agencies has been of great importance for decades. DOI agencies (including the National Park Service, Bureau of Land Management, Fish and Wildlife Service) have active, vital programs for volunteers. Without such assistance, agencies would not be able to provide the high levels of natural and cultural resource management, infrastructure maintenance and visitor services in their agency mandates. Volunteers also provide a critical link between the lands they manage and the surrounding human communities. These links help build an understanding of the value of the protected lands in economic terms but also an appreciation of their ecological services, including clean water and air, protection against soil erosion, habitat for wildlife, maintaining scenic beauty, and opportunities for healthful recreation. Volunteers often stimulate development of trust and support of land managers' goals and methods within the local community, which is an important factor when the land manager seeks more funding from federal or other sources or faces threats of inappropriate use of the lands it manages.

I. Overview, Discussion, Demonstration Examples

A. OVERVIEW

Each DOI land management agency has its own procedures for managing and using volunteers, but they are basically like those of the National Park Service. This Overview is a summary based on NPS Directors Order Number 7 of March 15, 2016, [Director's Order #7: Volunteers-in-Parks (nps.gov)](). The legal and procedural requirements to develop a volunteer program in Georgia may be very different than for DOI agencies.

Authority to develop a volunteer program

Because the NPS needed to develop a volunteer program that could be applied to all units of the National Park System, a federal congressional act was necessary: [54 U.S. Code § 102301 - Volunteers in parks program](). With this general authority, the NPS issued Director's Order 7 ("DO 7") that provides detailed requirements for how to recruit, train, protect, and manage

individual volunteers or organized volunteer groups. This separate legislation approach may or may not be necessary in the Georgian legal system if such authority already exists in the Ministry of Environment (MOE). Regardless of how the authority has been granted, it is important for both the Ministry and for volunteers that there be a policy statement such as DO 7 which defines the roles and responsibilities of government agencies and volunteers.

Administration

If the volunteer program is to apply to all units under the Ministry of Environment, then the policy statement should identify staff positions responsible for overseeing the program at different levels (national, regional, local). There should be administrative oversight to be sure volunteer programs in individual units are following the policies.

Volunteer definition and qualifications

It is important there be a clear distinction between a volunteer (who does not receive financial compensation and who does not have government employee status) and paid agency/MOE staff. NPS as well as other DOI agencies make this distinction official by requiring all individual volunteers or organized volunteer groups sign an agreement prior to undertaking any volunteer work. The NPS uses a form OF301A-21.pdf . It is advised that regardless of differences a future Georgia MOE volunteer program might have with the NPS system, some volunteer agreement document like this be used. It provides legal documentation that both the agency and the volunteer have agreed to certain forms of behavior and responsibilities, and, in the NPS case, guarantees the volunteer qualifies for medical coverage (provided by US law, under the Federal Employees' Compensation Act) in the event of injury while doing volunteer work. These volunteer agreements can be completed for single events such as a particular workday project or for longer periods such as when an individual volunteer or volunteer group will be doing specified work on a long-term repetitive basis.

The policy statement may also contain a list of qualifications for volunteers, for example minimum age, lack of serious criminal convictions, minimum physical capabilities. It may–as in DO 7–ensure there be no discrimination with regard to race, creed, religions, age, sex (including gender identity or pregnancy), sexual orientation, national origin or disability in recruiting volunteers.

Volunteer activities

What volunteers may do in terms of specific assistance to MOE units will be covered in the Discussion section below, but the policy statement may include general regulations such as whether volunteers can handle government funds, collect fees, drive official vehicles, wear uniforms, or carry firearms. It may also specify when an appropriate authority (for example the manager of a protected area) may make exceptions to the general regulations in specific situations.

Under Department of the Interior policy, it also must be clear that volunteers are not intended to replace existing agency staff or functions but rather to assist staff in better meeting their responsibilities.

Funding and reimbursements

Although volunteers do not receive direct compensation in the form of a salary, the policy statement should address whether they can be reimbursed for personal expenses while doing volunteer work. These may include costs of transportation, meals, and non-government housing. The statement should address whether volunteers can be offered housing in government facilities.

Benefits and Protection/Risk Management

This section of a volunteer program policy statement would confirm the government agency has the obligation to properly train volunteers to ensure their safety and minimize their risks before asking them to do certain work. It also establishes the agency cannot require a volunteer to perform work for which they have not be trained or which they do not feel comfortable doing. This section also–in the NPS case–assures that volunteers will be treated the same as Federal employees for financial compensation for work-related injuries and enjoy immunity from liability. Federal law in the United States provides this coverage for volunteers and the form helps prove volunteer status. As noted earlier, signature of a formal volunteer agreement is especially important to ensure volunteers have this protection.

Other provisions

Additional provisions (such as found in the DO 7) cover record-keeping of volunteer hours and accomplishments, recruitment (which might be at a national level or local unit level), orientation and training of volunteers before assigning them work, and training of agency staff in how to effectively use volunteers. The statement specifies how the agency, or a volunteer may terminate a volunteer agreement.

An especially important element requires and encourages the agency to periodically recognize individual volunteers or groups for their services and in certain situations give small-value non-monetary awards.

B. DISCUSSION

The policy statement summarized in the Overview provides the basic legal framework for a volunteer program. The following sections address the reasons DOI agencies seek out volunteer assistance, typical work that volunteers accomplish in DOI units, examples of the value of that work, the commitment agency staff must make to manage volunteer programs, and other benefits and challenges of developing an effective long-term volunteer program.

Why develop a volunteer program

Most DOI land management agencies have developed volunteer programs because they have realized they cannot reach the level of resource and visitor management they have been charged to accomplish given the financial (budget) and human resources (staffing) they have available. The reality is that stresses on wildlife due to habitat loss, wildfire risk, impacts of climate change, increased demand for recreation, changes in recreation types (large recreational vehicles, off-highway vehicles, motorcycles, all-terrain and utility vehicles, mountainbike trail popularity) have reached levels that are often beyond agency staffing and budget capacity to effectively manage.

When faced with the pressures noted above, DOI land managers have several options, among them:

       1) Accept the status quo and tolerate the degradation of the resources within their units;
       2) Close substantial areas to public use;
       3) Aggressively seek additional budget and staffing support from Federal (national) sources;
       4) Seek additional financial resources from local governments and communities, external grants, and form multiple local partnerships;
       5) Plan for and implement management actions that reduce the impacts of increasing visitation and changes in recreation types:
       6) Fill staffing shortfalls with volunteers.

The most successful DOI managers – and those in other land management agencies in the United States including the US Forest service – reject options 1) and 2) and simultaneously pursue options 3) through 6). Other Briefing Papers address some of these options, and here are descriptions of the volunteer program approach.

Typical volunteer work

Recognizing volunteers have no authority to formally enforce regulations, often their most important work is in educating visitors about appropriate, legal, low-impact behavior, and encouraging visitors to act accordingly. Where this approach is not successful, volunteers should step away from the situation and later notify agency staff with enforcement training and authority. Volunteers should never act as if they have law enforcement authority or confront individuals in ways that may create a situation that is dangerous to themselves or others.

Additional tasks include monitoring resource conditions, especially those related to visitor use, taking immediate small-scale action to correct a problem or reporting larger-scale issues to agency staff for future action.

Volunteers can be especially helpful in implementing "Adopt a Trail" or "Adopt a Campsite" programs where they periodically visit a specific trail or set of campsites and report on conditions, take actions or refer problems to the agency staff.

Volunteers with specialized knowledge of local cultural history, geology, plant and wildlife resources may lead interpretive hikes and tours which agency staff may not have the skills or time to lead.

Individual volunteers with appropriate skills can be assigned to monitoring critical wildlife issues such as nesting raptors, or supplementing other data collected by agency wildlife specialists. Individual or group volunteers are often utilized to address specific resource problems that agency staff do not have time for–examples are removing exotic plant or animal species, and revegetation of heavily disturbed areas.

Volunteers with appropriate graphic design, mapping and writing skills can, under agency guidance, contribute to developing brochures, social media programs, newsletters, interpretive panel displays, and visitor behavior guidelines which agency staff themselves may not have the skills or time to develop.

Organized volunteer groups, often referred to as "Friends" of the area, usually have enough labor resources and skills to undertake larger scale visitor-management projects under the direction of agency staff. For example, this might be building containment fences to prevent campsites from expanding or assisting agency staff to implement and monitor a system of designated campsites while phasing out high-impact, randomly dispersed camping.

Friends volunteer groups may themselves be qualified to apply for external grants to help in their visitor education and recreation management activities, or they may be associated with a non-government organization (NGO) qualified to apply for grants on their behalf.

Organized volunteer groups are often able to move more quickly and efficiently than agencies to implement certain kinds of projects, such as developing educational materials or organizing activities for youth groups. This is often accomplished by transfer of agency funds to a qualified NGO that supervises and covers expenses for implementation of the project.

Value of volunteer work

The most obvious direct value of volunteer work is completing the activities noted above, many of which would not have taken place, or been only partially accomplished, due to shortfalls in the staffing and budgets of the agencies.

Record keeping of volunteer contributions and successes can be an important influence in an agency's request for additional budget and staffing from within its own institution. Conversion of volunteer hours to a dollar value (currently nearly $30 per volunteered hour in the US) combined with grants secured by volunteers becomes an impressive figure in demonstrating how much volunteer programs add financial value to an agency's overall program. In response to a concern that officials allocating funds might conclude there is no need to increase financial support since volunteers are doing that work already, it needs to be acknowledged that volunteer support is not necessarily sustainable; for a variety of reasons it might suddenly no longer be available. This could create a shortfall leading to discontinuation of an important service or program.

There are also indirect or more general values.

Some individual volunteers, but especially organized groups, develop highly visible, favorable profiles within communities adjacent to the park or protected area where they operate. Their cooperative non-adversarial approach to assisting the DOI land manager helps develop understanding and trust between the community and the manager. This can lead to support of the manager as they seek local partnerships and financial assistance; it can also lead the community to support the manager when the area faces a particular resource crisis (like increased wildfire risk) or pressures to accommodate newly developed recreational or commercial uses (like introduction of new motorized vehicle types or rapid development of new bicycle trails or a proliferation of rental off-highway vehicles).

Volunteer groups that consistently and sympathetically assist land managers over a period of years often develop high levels of credibility with the agency. This allows them to provide well-informed advice and recommendations that help agencies make well-informed policy decisions. This advice will accompany other wide-ranging public input under the National Environmental Policy Act that requires major agency decisions to consider all citizen input, not just that of volunteers or special interest groups. (For more details, see separate briefing paper on the National Environmental Policy Act entitled: *Environmental Impact Assessments*).

Established volunteer groups may have close community connections that allow them to channel local concerns to land managers, particularly when the community may sense the managers are not meeting their full responsibilities.

Individual volunteers or members of organized groups themselves gain valuable technical skills (for example effective communication and visitor contact techniques, monitoring and observational capabilities utilizing modern GPS and digital tracking devices, physical skills in fence building, and revegetation and erosion control).

Agency staff commitments to manage volunteers

Although the direct and indirect benefits to the agencies from volunteer programs are significant, and sometimes even essential to effective land management, it must be recognized there are also substantial costs. Staff time must be allocated to volunteer recruitment and management; staff schedules may need to be altered to provide volunteer supervision and support; financial resources may have to be located and directed to volunteer projects; and time will need to be spent on documenting and tracking volunteer hours and accomplishments. Periodic events to recognize and thank volunteers for their contributions will take staff time and sometimes financial commitments. In some DOI situations, particularly where there may be dozens of individual volunteers and multiple organized volunteer groups, a full time or seasonal Volunteer Coordinator position must be created and budgeted annually.

Although usually not the case, a cost/benefit analysis prior to initiating or even during a volunteer program may indicate an agency or a particular unit simply does not have the resources to effectively manage a volunteer program. Because a poorly managed volunteer program

usually brings negative consequences, such as neglected resource protection and public disappointment in the level of services offered as well as disillusioned volunteers, it may be the best choice to terminate such a volunteer program.

Other benefits and challenges to volunteer programs

The motivation for volunteers to work with DOI managers is not always the same. Some individuals or groups simply wish to perform a labor service that might not be met by the agency. Examples of this are trash collection, clearing downed trees or routine maintenance on backcountry trails. Those volunteers gain satisfaction from these contributions and are content when their labor is recognized by the agency; they are not particularly interested in influencing future policy or resolving broader issues. Other volunteers, particularly long-established organized groups, are willing and able to provide physical labor, but they do not consider themselves simply a source of unpaid help. They wish to be active partners with the agencies in seeking long term and sustainable future improvements in management. Agencies (such as the MOE in Georgia) considering establishing volunteer programs should be aware of these differences (and others that might be unique to the Georgian social environment). If the only objective is to gain an unpaid source of labor, the volunteer program should be structured to attract that type of volunteer. If the MOE is interested in a more complex and time-consuming relationship with volunteers who wish to become active partners in policy development, the volunteer program should be structured to emphasize this sort of relationship.

One challenge faced by long-established organized volunteer groups is that while they continue to operate for long periods, sometimes decades, DOI agency staff managing volunteers may change every few years. This can result in a period of reestablishing trust and credibility that may be frustrating to both staff and volunteers. Keeping open communications between agency staff and volunteer leadership is essential in making this a smooth transition, as is mutual respect for the sometimes-differing goals of the agency and the volunteer group.

Some land management activities are more suited to volunteer assistance than others. Activities requiring a high level of training and supervision or presenting serious physical risk will typically not be appropriate for volunteers. Law enforcement is not an appropriate or allowed activity. Forest management and timber harvesting, wildfire fighting, or technical wildlife management activities are not appropriate for volunteers except in simple reporting of fires and incidental observations of wildlife. Most appropriate are visitor services that involve education, visitor contacts and assistance, routine monitoring and condition reporting and minor maintenance of campsites and trails.

A final point is the importance of periodic agency recognition of contributions and accomplishments of volunteers. This typically is accomplished in an annual local event and may be accompanied by small value awards and recognitions of individual volunteers or groups that have made especially significant contributions. If there are volunteer programs throughout many units of the agency, it is recommended that one or two volunteers or groups be given national recognition, as for example the Bureau of Land Management (BLM) does with its annual Volunteer of the Year award. The recognition should be genuinely felt by the agency and

respectfully received by the volunteer in order to achieve the desired effect of both rewarding past achievements and motivating continued volunteer contributions.

C. DEMONSTRATION EXAMPLES (CASE STUDIES)

US Federal land managers, including the National Park Service, have developed successful volunteer programs in hundreds of their parks, monuments and other types of natural and cultural resource protected areas. They ~~use~~ may employ many different approaches, including programs that use individual volunteers, organized groups of volunteers, one-time only volunteer projects, partnerships with independent private operators who manage volunteers, and others. Five Demonstration Examples which cover this range of approaches are provided in an extensive Addendum below.

II. CONCLUSIONS ON UNIVERSAL BEST PRACTICES

Introduction

The success of volunteer programs in Georgian protected areas may depend on the history and effectiveness of volunteering in the wider (Georgian) society. If you are confident there will be immediate widespread interest, it may be appropriate to immediately develop standards and procedures to apply uniformly throughout MOE protected areas. If volunteering is not traditional or common, it may be better to begin with pilot volunteer programs in selected protected areas and gradually develop procedures which could later become standard for all areas.

Best Practices for Creating and Maintaining Successful Volunteer Programs

● Identify the operational needs of your protected area suitable for volunteer support; focus on programs or activities your own resources and staff cannot accomplish to the quality and standards your agency requires.

● Ensure the tasks assigned to volunteers are important contributions towards the management of a protected area, and suitable and personally rewarding for volunteers to accomplish. Volunteers need to know their work makes a meaningful contribution to the successful operation of the area.

● Establish a legal framework and appropriate guiding principles and policies to support and direct the volunteer program. Create and implement a Volunteer Agreement process that ensures both the agency and the volunteer understand each other's roles and limitations.

● Match the skills of potential volunteers with the specific tasks to be accomplished. Provide appropriate training so that volunteers can accomplish the tasks they are assigned and ensure safety protocols are followed. Provide supervision of volunteers until you are

confident that can safely operate independently. Periodically evaluate volunteer projects and activities and adjust programs to improve outcomes.

- Develop ongoing partnerships with community organizations, youth groups such as scout troops or educational classes, and/or "Friends of the protected area." Ensure these partnerships are mutually respectful of what the volunteer contributes and what the agency contributes; minimize volunteer programs that are simply unpaid labor for unpleasant tasks and emphasize programs that bring volunteers in direct touch with resources and/or visitors.

- In return for volunteer contributions, demonstrate willingness to listen to their suggestions and criticisms that may lead to improved visitor services and protection of resources. Encourage communication between your field staff and volunteers so that together they can seek solutions to resource problems and improve response to visitor needs.

- Recognize and reward individual and group volunteer accomplishments. This can be accomplished with actions as simple as sincere thanks at the end of a workday, to recognition events at the end of a major project, to annual award events with tokens of recognition for the number of volunteer hours served and superior performance. Many volunteers take pride in being identified by the visiting public as being representatives of the area's staff through a name tag, distinctive identifying clothing, or simply a cap with a distinguishing emblem.

- Seek to develop a relationship of mutual respect and trust with volunteers. Acknowledge the benefits they bring to your area's management and treat them as valued members of your management team but do not compromise your final decision-making authority and responsibility.

ADDENDUM

DEMONSTRATION EXAMPLES

A. Extended example: A volunteer Friends group assisting BLM and US Forest Service manage recreation in a large protected area

1. Background of the problem needing volunteer assistance

The Department of the Interior's (DOI) Bureau of Land Management (BLM) and the Department of Agriculture's (DOA) US Forest Service (USFS) manage large areas of public land in the western US state of Colorado. In Chaffee County, Colorado, these public lands make up more than 80% of the county. The condition, use, and management of these lands significantly impacts the economy, environmental health, enjoyment, and social satisfaction of local communities. These lands are also extremely attractive to visitors from outside the local area because they are within a short 2-hour drive of Colorado's largest cities where nearly half of the state's 5.6 million people live.

In 1990, the BLM and USFS acknowledged that an area within Chaffee County called Fourmile (45,000ha/100,000ac) had become such a popular destination for overnight campers and off-road motorized vehicle users (OHVs) that unacceptable resource damage was occurring. Hundreds of dispersed (undesignated and unmanaged) road-side campsites and campfire rings had developed; dozens of unauthorized user-created four-wheel drive routes and singletrack motorcycle trails had appeared, fragmenting wildlife habitat, disturbing riparian areas, and leaving few areas free of vehicle noise. The dispersed campsites had created extensive areas of disturbed soil, damaged vegetation, and spur roads off official system routes; expanding campsites and user-created roads were contributing to erosion and pollution in local streams; human waste and trash were increasing problems.

The two agencies recognized the level of management they had been directing to Fourmile was not adequate to provide the resource protection and sustainable public use mandated in their own agency missions and high-level planning. They concluded additional controls and regulations were needed.

As required by law in the United States, actions by Federal agencies to significantly change management of public lands require an open public planning process. The National Environmental Policy Act (NEPA see [Summary of the National Environmental Policy Act | US EPA)](#) provides the framework for conducting studies such as an extensive Environmental Impact Statement (EIS) or the less demanding Environmental Assessment (EA).

In 1999, the two agencies began an Environmental Assessment. They invited the public–both local and distant–to participate. Many citizens provided comments individually, but local citizen volunteers formed a group representing different users: motorized users of off-highway vehicles, motorcycles and four-wheel drive vehicles and non-motorized users including hikers, mountain

bikers, horse riders, off-trail explorers and ranchers. The goal of this group of 40 local citizens was to prepare a comprehensive proposal the EA would analyze as a Citizens' Alternative.

Volunteers spent hundreds of hours of in the field documenting existing conditions, inventorying user-created roads and trails, and held dozens of meetings to evaluate the viability of various routes. Not all participants were completely satisfied, but the resulting Citizens Alternative represented acceptable consensus. In 2003, after a three-year process the two agencies approved a Travel Management Plan (TMP) that largely reflected the Citizens Alternative.

2. History of development of volunteer *Friends of Fourmile* group

BLM and USFS recognized they did not have the necessary resources to quickly implement the plans approved in the TMP. They encouraged the formation of a volunteer assistance group. About a dozen volunteers organized the group *Friends of Fourmile.* Its mission was to assist the agencies to implement the TMP's goal of effective resource management (good stewardship) while representing the interests of all legitimate users as well as adjacent private property owners and agriculture and ranching operators. The Fourmile TMP deals only with recreation and does not address other aspects of resource management, such as timber and wildlife, wildfire control, or infrastructure. Therefore, the *Friends of Fourmile* focuses almost entirely on recreation, while keeping well-informed on other aspects of forest management which may affect recreation. Most of the original volunteers continue to participate to the present day.

In the United States there are procedures that must be followed for such a group to achieve legal, operational status. This is especially important if the group intends to apply for financial assistance such as grants or to accept financial donations. The *Friends of Fourmile* chose to associate itself with an existing non-governmental organization (NGO) qualified to apply for grants. The Friends group is considered a chapter of that organization. The parent NGO [(Greater Arkansas River Nature Association | Nature Centered, Community Driven (garna.org)](https://garna.org) provides financial supervision and accountability for grants and other funds used by the *Friends of Fourmile* [(Friends of Fourmile | Greater Arkansas River Nature Association (garna.org))](https://garna.org).

3. Relationship of group to land managers

The mission of the *Friends of Fourmile* is to assist the two agencies to manage recreation as a "friend" of both the area and its managers; it is not a "watchdog" relationship of confrontation or criticism, but one of mutual trust and respect. Strengths and challenges of this relationship are discussed later, but for the past 20 years it has largely been one of friendly, trusting collaboration with positive benefits for resources of the Fourmile area and its visitors, as well as for the agencies.

The two agencies acknowledge the contributions of the organized Friends group–as well as other individual volunteers–by praising their activities during their work but also in an annual event where awards and formal recognition is made by agency upper management staff, and small tokens of appreciation are given. This recognition is an important motivation to volunteers to continue volunteering.

4. Activities of *Friends of Fourmile*

Friends of Fourmile volunteers, like all volunteers with DOI agencies, sign annual Volunteer Agreements which limit and define their role. These Agreements make clear volunteers have no powers of enforcement of regulations. When interacting with visitors, the volunteer's primary role is to provide information about regulations, conditions and available activities, and to educate visitors on how to camp responsibly and recreate with low impact. If activities of visitors are causing serious resource damage or conflicts with other users, the volunteer withdraws and informs an agency employee with enforcement authority. For dangerous visitor situations with legal implications, volunteers are instructed to call agency or local law enforcement authorities.

In addition to their educational work, *Friends* volunteers perform patrols to observe conditions of camping sites and agency infrastructure such as roads, signs and restrooms. They perform minor maintenance tasks such as removing trash, cleaning firepits and removing unnecessary firepits. They report major issues such as expanding campsites and serious damage to vegetation and soils. Working on their own or under agency supervision, they construct campsite containment fences of wire, natural timber or heavy rocks.

Using GPS technology volunteers have located and mapped all 300 dispersed camping sites within the area and observed existing, new and expanding campsites over a 20-year period. For the past 14 years, volunteers have conducted annual visitor use surveys on the busiest holiday weekend of the summer season and reported those results to the agencies. The reports contain analysis of trends and recommendations for changes in agency management policy. After being reviewed by the agencies, these results are shared with the local community through print and social media.

Agency staff sometimes perform similar activities within the Fourmile area, but they also have responsibilities on much larger areas of public land outside Fourmile (an additional 220,000ha/500,000ac). Until recently they had very limited staff available for these patrols. Over the long term, both the BLM and USFS agree the *Friends of Fourmile* has contributed significantly to their ability to cover agency recreation management responsibilities throughout the county. Accumulated *Friends* volunteer hours over the past 21 years now exceed 21,000, contributed by a small number (10) of dedicated volunteers. Using a formula accepted by US Federal agencies for converting volunteer hours into dollar equivalents, these hours represent more than US$600,000. In addition, the *Friends* volunteer chapter has secured grants directed at helping the agencies implement the Travel Management Plan valued at over US$150,000.

As a part of the *Friends of Fourmile* contribution to information and education, chapter volunteers with mapping, graphic design and writing skills produce and revise maps and panels (reviewed and approved by the agencies) to inform and educate different users. The maps and panels are placed by volunteers in dozens of agency-standard signboards ("kiosks"). These materials are combined in a brochure. These brochures are the most effective tool used by volunteers in their personal contacts with visitors. Brochures are also made available in boxes attached to kiosks which volunteers fill and are also available online. Funding for maps, panels and brochures is transferred from the agencies to the *Friends'* financial sponsor GARNA. When

such funding is not adequate, the *Friends* chapter may solicit donated funds from community businesses or apply for small grants.

In developing educational and informational materials, the *Friends* follows a consistent graphic style that has become the "brand identity" or visual representation of the area. Visitors and local residents recognize the Fourmile area has a unique character. This has led to an increased sense of community connection and pride in the area and willingness to treat it respectfully. In developing this branding, the *Friends* emphasize they are partners of the agency land managers and are not challenging or replacing their roles and authority.

Taking advantage of the Fourmile "brand," volunteers produced tee shirts, hats, pins and vehicle signs used when on patrols and making visitor contacts. The agencies also provide clothing (not official uniforms) that identify "on-duty" volunteers.

For a more detailed discussion on the importance of "branding" see the Briefing Paper Subtopic Non-Personal Services.

Here are examples of materials produced by this organized Friends group.

Brochure, maps and educational panels
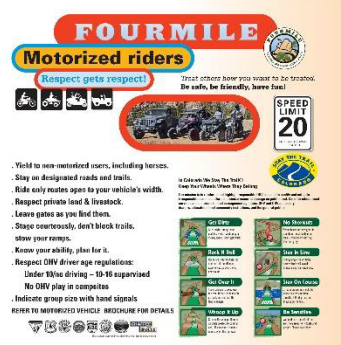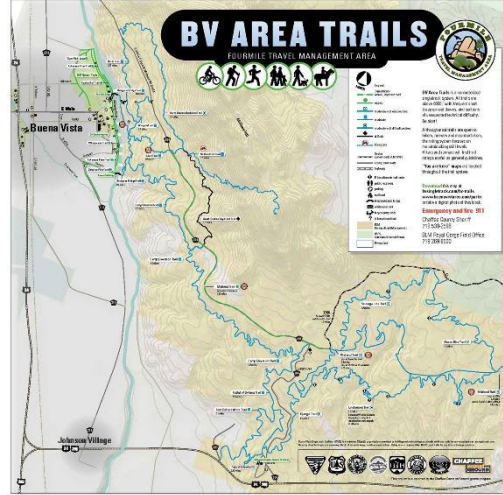
Friends Volunteer clothing and identifying badges

Friends Volunteer activities

Trash collection   Constructing fences   Leading science classes

Stocking brochure boxes

5. Benefits of the partnership between agencies and *Friends* volunteer chapter

The additional patrols, observations and reporting by volunteers gives the agencies a more immediate picture of resource conditions and potential problems. The agencies can direct their uniformed staff to address those problems before they become serious; if they do not have staff available, they can authorize the volunteers to resolve the problem, confident that volunteers have the skills and judgment to deal with it.

One of the most effective ways of ensuring visitors are well informed, follow regulations and have positive experiences is through personal contacts with knowledgeable, friendly, sympathetic staff and volunteer representatives of the area's managers. [See Personal Services Briefing Paper.] Because agency staff is spread thinly over a large area, *Friends* volunteers increase the frequency of personal interactions with visitors in one of the most popular areas in the entire county. Visitors frequently express their appreciation to the volunteers, and it is often apparent they take the advice of volunteers seriously.

An important additional benefit is that the *Friends of Fourmile* has become well-known by the local communities near the Fourmile area. They provide a link between those communities and the land managers that the agencies themselves have not always successfully established. This linkage helps the agencies better understand the concerns and opinions of the communities when the agencies consider changes of policy or face controversial issues.

6. Strengths and challenges of the partnership

The 20-year experience of this *Friends* group demonstrates strengths as well as challenges in the relationship between an organized volunteer chapter and a land manager. The major strengths are that a significant amount of physical management and resource protection has been accomplished (with no labor costs) that would not have occurred if the group had not been active. The *Friends* group has also made the importance and difficulties of good land management more visible to the local community, and this has generated more interest and support for agency actions.

Challenges to the success of agency use of volunteers, individually or in groups, are that it requires a significant commitment of agency staff time and resources. It requires program management skills that may not be available among agency staff. Providing those skills may require special staff recruitment or additional training. A problem sometimes occurs when agency staff who manage volunteers move to other positions after relatively short periods; the *Friends* faced some frustrating delays because they had to develop new personal relationships and prove to new staff they had appropriate skills and could be trusted.

Some challenges arose within the organized group. *Friends* members occasionally felt they knew more than the managers or advocated being overly protective of the area, which would have conflicted with the legal framework for management. *Friends* also sometimes experienced internal differences of opinion on priorities or what recommendations to make to the managers as a group. The *Friends* have occasionally been frustrated that the agencies, due to bureaucratic limitations, did not move as fast as volunteers wished. They also face a problem common to long established groups: long-term (20 year) members have advanced in age and the group needs to recruit younger members who often do not have the free time of older members who are retired.

In its 20-year history, the *Friends of Fourmile* has experienced all the above challenges and observed all the above strengths. Overall, however, the history of the *Friends* relationship with its two partner agencies–BLM and USFS–has been productive because it has seldom been confrontational and has been one of mutual respect and trust.

B. Adopt a Trail Programs

In United States National Forests–and in DOI-managed national parks and other public lands–there is a long tradition of volunteers helping build and maintain (Adopt) sections of long-distance hiking trails. One such program in Colorado targets the Colorado Trail ("CT") Adopt-A-Trail (AAT) - Colorado Trail Foundation. The CT runs 782km (486 miles) from Denver to Durango, Colorado, crossing USFS and BLM managed public lands and some private lands in high altitude sections of the Rocky Mountains at altitudes from 3000m (10,000ft) to 4,045m (13,271ft.) The program is managed by a private organization (the Colorado Trail Foundation, a tax-exempt institution qualified to apply for grants and accept donations). Some volunteers join crews to complete new sections of trails and do major repairs, under supervision of trail specialists. Other volunteers work alone or with one or two helpers to maintain (Adopt) 8-16km (5-10 mile) sections of the trail. Once volunteers have agreed to be Adopters, the Foundation provides them with training on the tools and techniques to clear and maintain their sections and on safety precautions. Volunteers agree to visit, inspect and maintain their sections as least twice in a season, and to report their activities to the Foundation.

Other Adopt a Trail programs deal with even longer trails such as the 1,940km (3,100 mile) Continental Divide Trail (CDT) which crosses the western United States from the Canadian Border to Mexico Trail Adopters | Continental Divide Trail Coalition. Like the Colorado Trail, the CDT has a non-profit foundation–the Continental Divide Trail Coalition–responsible for completing unfinished sections and recruiting Adopters to maintain certain sections. These foundations are independent of the Federal managers of the lands which the trails cross which

allows the foundations to deal with multiple jurisdictions and land ownership issues along the trail. They also are not dependent on annual government budget allocations but instead attract funding from many different sources including individual donations.

C. Individual Volunteers in visitor service programs in parks

Many DOI-managed parks and other protected areas utilize individual volunteers to assist in visitor service activities. The US National Park Service has a long-established program that can operate in all its areas called Volunteers-In-Parks (VIP). Volunteers-In-Parks (U.S. National Park Service) (nps.gov)

A typical example of a VIP program is at Rocky Mountain National Park where trained volunteers circulate among crowds of people who assemble to watch wildlife. These volunteers are present when Bighorn Sheep gather to feed and in evenings during elk bugling (mating) season. The volunteers informally provide information about the animals and safety messages to discourage dangerous interactions between wild animals and humans. This differs from paid interpretive staff who present formal talks at scheduled times and locations.

In other parks, VIP volunteers assist paid staff at visitor centers. These centers can be extremely busy during summer seasons and agency staff are easily overwhelmed by the volume of visitors seeking information on available activities, weather conditions, camping opportunities and other logistical questions. Volunteers familiar with this information and trained in effectively communicating with visitors work alone or side by side with paid staff.

Volunteers are often utilized to lead interpretive programs and guided walks. This typically involves more experienced volunteers who have been returning to a particular park or unit for several years (even decades in some well-known cases). A common pattern is for high school or university level teachers, unemployed during the summer seasons, to volunteer year after year at the same location. With communication and teaching skills learned in their classrooms, they often make excellent interpreters and group leaders; in some cases, they serve as trainers for younger or less experienced paid seasonal interpretive staff who may be assigned to the area for the first time.

A typical VIP program, such as in Bandelier National Monument in northern New Mexico, uses volunteers trained and knowledgeable in the archeology of the Monument in its Division of Interpretation. Some of the volunteers are local, meaning they come from the local community and have their own housing; they volunteer only once a week for a 6-hour shift. Other volunteers, who come from distant areas, commit to three months and are given shifts of 32 hours a week. These longer-term volunteers are considered "residential," and they are offered park-owned housing or space in park campgrounds for their recreational vehicles, with utilities and services paid.

Another source of volunteers for the VIP program are retired NPS or other DOI employees. They bring skills in interpretation and other visitor services developed over long careers and can play an important role in mentoring new employees or young volunteers.

Here are examples of participants in the NPS VIP program.

Individual VIP volunteers assisting in park visitor centers

Retired employee as volunteer   VIP volunteer assisting visitor in the field

Volunteers in historic period costume helping NPS employees

D. *Volunteers in specialty park divisions and programs*

In many National parks and BLM units, volunteers assist specialists in wildlife research and management, native and invasive plant studies, fisheries research and monitoring, and other park divisions not related to public programs. A common approach is for the park to reach out to local educational or research institutions and recruit volunteers engaged in relevant classwork. This reduces the need for training and makes it possible to integrate the volunteer into the park program quickly. These kinds of volunteer programs are particularly valuable since they are of benefit both to the park program and to professional development of the volunteer. There are examples where, upon graduation, such volunteers find paid seasonal or permanent employment with the same park or another with similar research and management issues.

   D. *Volunteers associated with a nation-wide external institution*

The Student Conservation Association ([The Student Conservation Association (thesca.org)](https://thesca.org)) is a very large non-profit (NGO) organization which recruits and supports high school and college-aged volunteers in US parks and other protected areas. Over its 65-year history, tens of thousands of volunteers have participated, making SCA the largest private provider of conservation-oriented volunteers in the United States. The organization serves not only as a means of placing younger volunteers in protected areas, but it also provides an avenue for former SCA participants to enter resource management agencies and other conservation-oriented institutions. Many SCA alumni have risen to significant leadership roles in their chosen resource management agencies, academia, or other related professions.

SCA offers two levels of programs. One is a range of short programs for youth ages 15-19 who may assist at community, regional, and national levels. These younger volunteers typically are charged a modest fee to participate, covering administrative costs, although financial assistance is available. The second level, the SCA Young Adult Program, offers opportunities 3 to 12 months long in a wide variety of fields and is open to anyone 18 or older; volunteer expenses are covered for these 40-hour-per-week commitments.

SCA provides volunteer opportunities in a variety of fields and locations, ranging from team-based programs to individual assignments (internships). SCA connects youth with relevant governmental agencies, nonprofit organizations and corporate sector partners concerned with conservation and environmental change. SCA also connects these agencies and other partners with high caliber, talented, and dedicated participants by matching potential volunteers with their organizational needs.

SCA programs offer participants the chance to embark in a life-changing experience, giving them the opportunity to make new friends, explore potential careers, gain leadership skills, and accomplish hands-on conservation work that will have a lasting impact. Since its inception in the 1950s, over 80,000 young people have participated in SCA programs gaining conservation, leadership, and life skills in the process.

Web source References Cited

NPS Volunteers in Parks Program

Director's Order #7: Volunteers-in-Parks (nps.gov)

54 U.S. Code § 102301 - Volunteers in parks program | U.S. Code | US Law | LII / Legal Information Institute (cornell.edu)

Volunteers-In-Parks (U.S. National Park Service) (nps.gov)

US DOI Volunteer Service Agreement

OF301A-21.pdf

US National Environmental Policy Act

Summary of the National Environmental Policy Act | US EPA

Demonstration examples

Greater Arkansas River Nature Association | Nature Centered, Community Driven (garna.org)

Friends of Fourmile | Greater Arkansas River Nature Association (garna.org)

Adopt-A-Trail (AAT) - Colorado Trail Foundation
Trail Adopters | Continental Divide Trail Coalition

The Student Conservation Association (thesca.org)

Project Phase 2.3 – Briefing Paper, Habitat Connectivity and Landscapes
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Team Members: Casey Burns, Sophie Kelly, Sandy Rabinowitch, Rob Sweeten

I.   Introduction.

The Natural Resources Team, through consultation with the In-Country Georgia Advisor, identified Habitat Connectivity and Landscape as a theme for analysis and research. The theme includes all topographical, hydrological, and vegetative features managed on a landscape scale and the connectivity that they provide for biota of all species.

II.   Overview, Discussion, Demonstration Examples.

Habitat connectivity between landscapes is the underpinning of Conservation Biology. The rate at which landscapes and migration corridors are being eroded in recent times is unprecedented and therefore of foremost importance in species conservation. This briefing paper examines some of the reasons for this importance and provides three North American examples of migration corridors and finally, some broad recommendations on conserving landscapes and corridors in protected area planning and management.

Habitat <u>Connectivity</u>

Habitat Connectivity is key to managing for resilient populations of wildlife. Providing linkage of habitats allows for gene dispersal and elasticity to respond to habitat modifications, climatic changes, and anthropomorphic influences (Beir and Gregory 2012, Bennett 1998). Managing appropriate niches for the species of concern in a systematic, proximate, and appropriate spatial scale is important for a species to meet its life history needs. Providing these linkages can be viewed at several spatial scales and can be relevant even at the local level in which individuals or community groups are able to carry out conservation actions (Kauffman et.al. 2021, Bennett 1998). The concept and level of connectivity in a landscape varies greatly between species and between community groups and may function to promote interchange of species, communities, and ecological processes even if habitat patches are discontinuous. Thus, a landscape may provide high connectivity for some organisms and processes and no connectivity for others (Lindenmayer et. al. 2007, Bennett 1998).

For migratory birds in North America, managing stop-over feeding and roosting habitats between northern latitudinal nesting habitat and southern latitudinal wintering habitat is a key element to providing for the species (United States Fish and Wildlife Service et. al. 1986, USFWS 2014, United States Code 1918). The United States has strategically conserved National Wildlife Refuges, Waterfowl Production Areas and habitat easements in Alaska and the Prairie Pothole Region of the Northern States while encouraging Canada to do similarly, as well as working with conservation partners in Mexico, and Central and South America to conserve

wintering habitats (USFWS 1986). This system of protected and managed habitat along the migratory pathways, or flyways, provides rest and feeding areas between nesting and wintering habitats.

Managing landscapes to provide for migration routes for large ungulates is well documented world-wide (Kauffman et.al. 2021) and central to the practice of conservation (Hilty et. al. 2012, 2006). In North America, the migration route of the pronghorn (*Antilocapra americana*) was the first route to be federally recognized (Berger and Cain 2014). This recognition requires federal land managers to evaluate land-use impacts to the function of this corridor. Establishing this corridor recognized the multiple threats to a species, including energy development, urbanization, and changing agricultural practices that exist outside of a protected area (Tack et. al. 2019, Berger 2003). This migratory corridor was established through private and public lands only through continued and well-planned discussions explaining the science and need for such protection with policy makers and stakeholders over a long period of time (Berger and Cain 2014).

Barren-ground caribou (*Rangifer tarandus granti*) is another well documented North American species that depends on the landscape connectivity of its migration route. The caribou migrate from summer feeding areas to lower elevation calving grounds. Traditional migration routes have predictably better snow conditions than other areas, and along the migration route, caribou seek feeding areas that are free of or have less dense snow (Duquette 1988). The traditional migration routes also have sufficient quality forage to sustain the migrating herd (Russell et. al. 1993). Migration from calving grounds is likely triggered by a depletion of summer forage (Nicholson et al. 2016) and severe harassment from biting insects (Russell et. al. 1993, White et. al. 1975). Because natural selection favors caribou that follow previously successful migration routes, it is postulated that young caribou learn the route by following older, experienced animals (Pullianen 1974).

Many ungulate migrations are driven by access to forage following the spring green up of palatable grasses (Kauffmann et. al. 2021, Middleton et. al. 2019, Aikens et. al. 2017, Nicholson et al. 2016, Hebblewhite et. al. 2008). This utilization of highly digestible forage has been shown to enhance individual and community fitness (Kauffmann et. al. 2021). The traditional use of migratory corridors also provides a prey base for predators and scavengers and underpins the biodiversity across varying landscapes (Kauffman et. al. 2021b). In addition, the hoof action of the migrating herd and the elimination of urine and feces facilitates ecological conditions along the corridor that creates distinct biotic communities (Kauffman et. al. 2021b).

Humans have historically been culturally dependent and connected to migration corridors and the resources that the ungulates provide. For barren ground caribou, this would include the cultural knowledge and traditions of the Inuit and Tlicho people whose livelihood and culture depend on these herds.

In the examples of North American corridors above, it was consistently recommended that landscape planners identify migration corridors early, and incorporate local, indigenous, and historical knowledge in planning protected area landscapes. This is also true of corridors that have been lost so as to provide a basis for ecological restoration. When considering the

conservation of protected areas, managers should also consider the ecological processes that support that area such as the long-distance migration corridors that connect to the protected area (Berger 2004).

Landscape / Topography

Landscapes are dynamic and include not only the structural attributes of topography, vegetation, water courses and habitat, yet also represent processes such as flowpaths for energy, nutrients, and genetic code (Lindenmayer et. al. 2007). Landscapes can be defined in a variety of ways. Some ecologists have emphasized that one should define landscapes from the rate of processes of the organisms in question as opposed to considering landscapes from an anthropomorphic perspective, which are often derived from human-conducted mapping efforts (Weins 2002, Weins and Milne 1989, O'Neil and King 1998). This is because it is the spatial relationships of habitat elements and the interaction of those elements for the organisms in question that make landscapes important. The composition, configuration, and juxtaposition of landscape features (habitat patches, watercourses, edges, topography), influence species dispersal (Weins 2001) and can produce quite different species assemblages.

As important as it is to maximize the ecological understanding of landscapes and migration corridors, if one desires to realize policy changes, they must also consider the role of a variety of human dimensions (Berger and Cain 2014). Building trust between government and private interests, enhancing the interests of varied coalitions in landscape conservation, and engaging divergent political ideologies is also often required. At times, scientists may feel like advocates for landscapes and corridors, actively engaging the political system in order to facilitate their protection. It is also important for one to understand the relationship that people have to the landscape, both traditionally and in modern day, and the symbolic meaning that this generates, as this heavily influences how the landscape will be treated and managed into the future (Antrop (2005).

Topography can enhance or preclude connectivity. Topography, aspect, or a significant change in elevation and associated vegetative conditions can prohibit many species from moving from one drainage or habitat type to another. Within landscapes, topography can significantly affect the connectedness of habitat patches and the flow paths of wildlife, aquatic species, insects, and vegetation, as well as water, energy, and nutrients.

In addition, topographical features, such as rocky unvegetated areas, can create barriers to fire spread, and thus affect vegetative types (Merschel et. al. 2018). For example, topography exerts significant influence on frequency, extent, and distribution of natural processes, such as fire, floods, blowdown, pathogens, and geomorphic events across the landscape (Merschel et. al. 2018, Dorner et. al. 2002). Topography also affects the moisture regimes that shape the spatial distribution and composition of vegetative communities and the wildlife communities that inhabit them (Dorner et. al. 2002, Webb et. al. 1999). Biota such as insects, amphibians and small mammals use micro-topography for shade, moisture, and cover, whereas large ungulates often maximize fitness by seasonally exploiting otherwise underutilized niches in high mountain meadows. Small mammals may exhibit higher utilization of the scarce resources found at higher elevations to avoid predation and energy loss rather than foraging at lower elevations, where

resources are more abundant but have higher predation and metabolic costs (Sullivan et. al. 2001). Topography or roughness within a stream provides habitat niches for fish to seek cover from predators, rear young, or stay concealed until predating on another.

In the current age, the effective planning and conservation of habitat connectivity and of landscapes will require the explicit consideration of the effects of climate change (Chester et. al. 2012). In fact, the scale of the landscape or seascape being considered may be defined by the effect of climate change on the organisms and ecological processes being considered. Consideration of the effect of climate change may help focus conservation activities such as where to focus on connectivity and help prioritize the sequence of conservation actions (Hilty et. al. 2012b). The effects of climate change should encourage resource managers to look well beyond the areas being protected to achieve long-term conservation, which will require different factors and considerations for effective management. For example, the portions of the landscape outside of protection will often require a different suite of conservation, agricultural, industrial, political, and social tools to enable ecosystem connectivity to the protected areas within a landscape. For effective landscape management, the focus should be maintained on conserving the ecosystem processes and functions.

III.   Conclusions on Universal Best Practices for Managing Connectivity and Landscapes

After careful review of relevant literature regarding Connectivity and Landscape, and based on experience evaluating the efficacy of landscapes for conservation, the Natural Resources Team recommends the following practices:

- Consideration of the ability of species and ecological resources and processes to move through landscapes in terrestrial and aquatic systems and between the two is key to managing landscape connectivity (Lindenmayer et. al. 2007).

- Identify connective corridors early in the planning process of establishing Protected Areas. The corridors may significantly influence the ecological integrity of such Protected Areas. Use all available science and global positioning points possible and also incorporate local, indigenous, and historical information to determine connective corridors.

- At times, scientists may need to be advocates for corridors and actively engage the political system in order to facilitate their protection (Berger and Cain 2014).

- Consider landscapes from the perspective of the organisms and processes in question.

- Consider the influence of topography on natural and anthropomorphic disturbance regimes as well as on species and community movements when managing landscapes and Protected Areas.

- Clearly set goals and objectives from the broad vision of what people want from the landscape in the future (e.g., ecological, social, economic) (Lindenmayer et. al. 2007).

This requires clearly identifying and prioritizing challenges as not all challenges are equal.

- A range of conservation strategies is often required for landscape management. This means some may be focused on single species, some on suites of species and communities, and some on entire ecosystems (Lindenmayer et. al. 2007).

- Plan and manage for climate change. This will almost always affect the scale of the landscape being considered and may mean modifying the common approach of managing from historical reference points (Chester et. al. 2012). It may also require a re-prioritization of conservation strategies and planning for connectivity that spans north and south latitudes as well as high and low gradients (Hilty et.al. 2012b).

Finally, after careful planning, engage in action. As stated by Parmesan (2012), "with action, there is hope."

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Project Phase 2.3 – Briefing Paper,
Non-Material Cultural Resources, Ethnography, Cultural Landscapes
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I.   Introduction.

The Cultural Resources Subgroup identified non-material cultural resources, ethnography, and cultural landscapes (in addition to some other topics) as "themes" for analysis and research. These topics were originally considered separately, but are categorized and discussed together in this briefing paper because they reflect interrelated aspects of the study and preservation of cultural resources.

An overview of some of the methods employed by land-managing agencies in the United States to inventory, assess, monitor, and manage non-material cultural resources, ethnography, and cultural landscapes is presented here. This subject matter is expansive. The examples and procedures shared will predominantly come from various programs and processes developed and administered by the National Park Service (NPS), the United States Forest Service (USFS), and the Bureau of Land Management (BLM) in response to federal laws and agency-specific policies relevant to the overarching category of cultural resources management (see Appendix A, attached, for a summary listing of federal statutes and implementing regulations most relevant to this topic). In addition to the work performed in this endeavor by and for federal agencies, this topic is also extensively addressed at academic, state, and local government levels in the United States, but the scope of this discussion is focused upon federal perspectives, and will not address this vast array of state, local, and/or academic approaches aside from the overlap that occurs.

United States federal land management agencies follow Presidential executive orders, Secretarial orders, departmental and/or agency policies, federal laws (written into the United States Code (USC) or codified as "public laws" (PL)) and their implementing regulations (published in the Code of Federal Regulations (CFR)) for resource management. Agency programs that involve the management of cultural landscapes, ethnography and non-material cultural resources are typically appendages to these various laws, which serve as the framework for federal agencies to craft policy and procedures to address them. State and local governments also pass laws and policies to address relevant application of these laws, or to meet their particular goals and objectives. Often, state and local efforts intersect with federal preservation programs in specific ways. For example, a small town may choose to create local laws and policies to preserve its main street even though no federal or state law applies. If the town applies for a grant of federal funds to support their preservation efforts,

however, it is generally necessary for them to meet federal standards as implemented by the funding agency.

Of the three land managing agencies considered in this briefing paper, the NPS (first and foremost, a preservation agency) generally leads out with respect to programs and procedures developed to identify, assess, and preserve non-material cultural resources, ethnography, and cultural landscapes. The USFS and BLM also address these themes with policy and procedures that are unique to their multiple use mandates, which include preservation as well as recreation and resource use and extraction. In many instances, lands managed by the agencies are surrounded by cultural sites and landscapes important to Native American groups and other traditional communities with long-term vested interests in their management. Below, brief discussions are provided of each of the three subject themes, including demonstration examples of how an agency in the United States has developed a program to address one or more of them successfully.

II. Overview, Discussion, Demonstration Examples.

A. Non-Material Cultural Resources

"Non-material cultural resources" is the most elusive of the themes or subtopics that have been identified for analysis and research in the cultural resources subtopic. This subgroup is tasked with recommending best practices in the management of non-material cultural resources. In order to do this, it is necessary to clarify what the term encompasses. For example, how can something that is non-material be identified and successfully preserved and managed?

The language formulated by the United Nations Educational, Scientific and Cultural Organization (UNESCO) is useful to consider here. Founded in 1945 after World War II, the organization seeks to foster global peace through programs that highlight international cooperation in education, sciences, and culture. UNESCO manages a list of natural and cultural sites located around the world, inscribed or enrolled per an international treaty, the "Convention concerning the Protection of the World Cultural and Natural Heritage," adopted by the organization in 1972[1].

Particularly important for consideration in this briefing paper is a special type of cultural heritage designation adopted by UNESCO in the early 2000s that recognizes that "cultural heritage" comprises more than objects, buildings, and special places. This designation is the *Representative List of the Intangible Cultural Heritage of Humanity,* and includes its companion, the *List of Intangible Cultural Heritage in Need of Urgent Safeguarding.* Both lists currently comprise 631 "elements," or listings, corresponding to intangible heritage resources in 140 countries. Elements inscribed in the lists are deemed significant manifestations of humanity's intangible (i.e., non-material) cultural heritage. Four such elements are inscribed for the Republic of Georgia, including Georgian polyphonic singing,

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[1] The UNESCO World Heritage List includes locations as distinct as the Cathedral of St. Mary of Burgos ("Santa Iglesia Catedral Basílica Metropolitana de Santa María de Burgos") in Spain, the Great Barrier Reef of Australia, and the historic heart of the Pueblo of Taos, New Mexico, in the United States.

the traditional Qvevri wine-making method, the three writing systems of the Georgian alphabet, and Chidaoba wrestling. UNESCO now describes its combined traditional and intangible cultural heritage listings as follows:

> The term 'cultural heritage' has changed content considerably in recent decades, partially owing to the instruments developed by UNESCO. Cultural heritage does not end at monuments and collections of objects. It also includes traditions or living expressions inherited from our ancestors and passed on to our descendants, such as oral traditions, performing arts, social practices, rituals, festive events, knowledge and practices concerning nature and the universe or the knowledge and skills to produce traditional crafts. (UNESCO 2022).

The terms "non-material cultural resources," as used in this briefing paper, and "elements of intangible cultural heritage," as employed by UNESCO, are expressions of the same phenomenon: culture itself. The *Dictionary of Anthropology* (Winick 1970, 144) defines culture as, "all that is nonbiological and socially transmitted in a society, including artistic, social, ideological and religious patterns of behavior and the techniques of mastering the environment." Another classic definition offered by two American anthropologists in the mid-twentieth century provides additional clarity:

> Culture consists of patterns, explicit and implicit, of and for behavior acquired and transmitted by symbols [including language], constituting the distinctive achievement of human groups, including their embodiments in artefacts; the essential core of culture consists of traditional (i.e., historically derived and selected) ideas and especially their attached values; culture systems may, on the one hand, be considered as products of action, on the other as conditioning elements of further action (Kroeber and Kluckholn, 1952:181).

Social scientists (particularly anthropologists, psychologists, and cultural geographers) have offered many more definitions since the term "culture" began to be employed in modern scholarship, roughly beginning in about the eighteenth century, to reference intangible or non-material aspects of human behavior and experience. For example, Kroeber and Kluckholn (cited above) listed 160 definitions before providing their own, and the process of refining definitions of culture continues to the present day.[2] A major dichotomy acknowledged and discussed by social scientists lies between conceiving of culture as a system of knowledge, beliefs, ideals, norms, concepts, language, and traditions *internal* to a group or groups of human beings[3], and the *external* expressions of those internal constructs, most easily perceived and defined as physical objects (or components of physical objects) that retain their form over time, including buildings, cultural landscapes, pottery vessels,

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[2] Per Jahoda (2012), the polysemous word "culture" is derived from the word "cultivation," and originally referred to producing crops, such as "the culture of barley," or viticulture. A modern usage that reflects this origin might be a reference to bacterial culture. In eighteenth century France the term began to be used to reference training or refinement of the mind or taste, and in the nineteenth century the anthropologist Edward Tylor famously equated "culture" with "civilization."

[3] Thus references to "Latin American culture," French culture, etc.

jewelry, and tools. Non-material cultural resources can be expressed and perceived externally, but their physical form is ephemeral. To name a few salient examples, these kinds of resources encompass: languages and their myriad forms of expression, including gestures, stories, oral traditions, and methods of instruction; music, vocalized as songs and/or played with instruments; dances; the vast array of knowledge embodied in the production and preparation of food, from cultivation to consumption; and beliefs and values as expressed in religious as well as secular rituals. The knowledge needed to produce these things exists internally, it becomes externalized when a story is told, a dance is performed, crops are sown and then harvested, or a traditional meal is prepared. And, perhaps most importantly, these many and varied expressions of internal knowledge, concepts, and beliefs are shared among groups of humans living contemporaneously as well as across time. UNESCO's description of intangible cultural heritage provides additional clarifying language:

> The importance of intangible cultural heritage is not the cultural manifestation itself but rather the wealth of knowledge and skills that is transmitted through it from one generation to the next. The social and economic value of this transmission of knowledge is relevant for minority groups and for mainstream social groups within a State, and is as important for developing States as for developed ones (UNESCO 2022).

The description of "intangible cultural heritage" offered by UNESCO also emphasizes a number of other important characteristics. Intangible cultural heritage is: traditional, contemporary, and living at the same time; inclusive and contributing to a sense of community and identity; community-based with respect to creation and transmission of various manifestations; and dependent on those whose knowledge of traditions, skills and customs are passed on to the rest of the community, from generation to generation.

1. Demonstration Example: Experiencing the Cultural Diversity of the Mississippi Delta Region at Jean Lafitte National Historical Park and Preserve

Beginning in 1978, the United States Congress authorized the establishment of Jean Lafitte National Historical Park and Preserve (JELA) in New Orleans, Louisiana**,** "in order to preserve for the education, inspiration, and benefit of present and future generation significant examples of natural and historical resources of the Mississippi Delta region and to provide for their interpretation in such manner as to portray the development of cultural diversity in the region…" (JELA 1995). The original implementing legislation listed a number of specific locations where land already managed (or to be acquired) by the NPS would be folded into JELA, including a battlefield related to America's War of 1812, a small island preserving Tchefuncte archaeological sites, and twenty thousand acres of wetlands on the west bank of the Mississippi River near New Orleans at Barataria. These three locations became units of JELA, soon to be joined by "…folk life centers to be established in the Acadian region… and such additional natural, cultural, and historical resources in the French Quarter and Garden District of New Orleans, forts in the delta region, plantations, and Acadian towns and villages in the Saint Martinville area and such other areas and sites…" wherein the unique cultural trajectory of New Orleans and the Mississippi River Delta region could be experienced and explored by visitors (JELA 1995).

Key words to reflect on in this example are "experience" and "cultural diversity." By the time the World's Fair came to New Orleans in the mid-1980s, the new park was up and flourishing. A number of folk life centers had been established in and around New Orleans and the Delta Region, including a primary unit in the French Quarter, as well as in surrounding parishes (counties) in French-speaking Acadian ("Cajun") country as well as in the area occupied by Isleños, descendants of settlers who had emigrated to Spanish colonies from the Canary Islands in the eighteenth century. The French Quarter Unit incorporated a kitchen where traditional foods prepared by local cooks could be enjoyed, as well as exhibits and indoor and outdoor performance spaces. In addition to featuring exemplars of the many types of music traditional to New Orleans (e.g., jazz, gospel, blues, zydeco, and brass bands, to name a few), the performance spaces were often occupied by craftsmen working on traditional artisanal items such as the extravagant costumes—intricately embellished with beads, feathers, and embroidery—created by local African-American music-and-dance groups known as the "Mardi Gras Indians." The musical activities proved to be particularly popular, and in 1994, a second park, the New Orleans Jazz National Historical Park (JAZZ) was established in the historic Tremé neighborhood of New Orleans, offering an additional performing space and a museum of jazz.

Over the past several decades, JELA and its sister park have offered and sponsored a multitude of events and venues within which visitors to the region could not only learn about the diverse cultures of the Mississippi Delta Region, but most importantly, could experience the richness of the non-material cultural resources created by them, through hearing, seeing, and tasting (and maybe even learning a dance move or two). The enabling legislation has been modified a number of times, and the various units of the park have weathered environmental disasters, including Hurricane Katrina and the vicissitudes of a global pandemic. The flexibility expressed in the park's enabling legislation has been key to its success. Other significant factors include:

- careful advance planning, incorporating long-term research by academics (particularly ethnomusicologists) into the unique traditions of the Delta Region, as well as sponsorship of new investigations as the need for them has surfaced;
- identification of and ongoing collaboration with local communities and organizations who embody and create the cultural expressions at the heart of the park's mission; and
- establishment of consistent sources of funding deployed in support of park activities as well as individuals and organizations involved in creating and preserving the cultural traditions of the Delta Region.

In more than one instance, the support provided by the establishment and continuing operation of JELA has provided a significant boost or even a lifeline to some individuals and groups whose connections to traditional knowledge and skill sets were in danger of being lost. Preservation of non-material cultural resources is thus being accomplished as dynamic, living expressions of them are fostered.

B. Ethnography

Identification of traditional cultural expressions and the knowledge needed to create them is an essential component of presenting and preserving them. Central to this endeavor is the practice of ethnography, a qualitative research method employed by social scientists, particularly (but not exclusively) anthropologists. Ethnography involves the study of people in their own environments, using techniques such as participant observation and in-person interviews, conducted by a researcher or researchers who are embedded in the community they are investigating, and who have the opportunity to ask questions of the people they are observing. The goal is to arrive at an accurate description of as many aspects as possible of the lifeways of the people being studied, including both tangible or material and intangible or non-material expressions of culture.

Although descriptions of other cultures permeate the literature and travelogues of explorers from ancient times to the present, what distinguishes ethnography from simple description is the focus on the ethnographer's face-to-face interactions over an extended period of time with the people being studied and the production of a report incorporating a professional sociocultural analysis of the data collected, addressing both internal and external aspects of their culture. This is not to say that an ethnographic report is always free from bias; the potential subjectivity of any sociocultural researcher (and their community informants) must always be taken into account. The idea is that personal observations collected over a lengthy period of time, perhaps even years, and then reported using the analytic framework of professional social science disciplines, will more accurately reflect and explain how and why people do what they do.

Most social scientists would cite the establishment of ethnography as a professional methodology with the early twentieth-century field studies of Margaret Mead in Samoa (and elsewhere in Oceania) and Bronislaw Malinowski in the Trobriand Islands of Melanesia. Both anthropologists spent years in their field areas, availing them with the opportunity to create what anthropologist Clifford Geertz referred to as "thick description" of the people whose behaviors they were observing and documenting, describing lifeways that were alluringly foreign when compared to Western cultures. In subsequent decades, the trend in the practice of ethnography tended to follow the examples set by these pioneers: ethnographers sought out and documented exotic cultures living in faraway lands, especially those located in what has been referred to as "the Third World." More recently, the methods of ethnography have been applied to documentation of groups of people all over the world, including populations living in rural and urban settings within Western countries. This development has led to the rise of "applied ethnography," which refers to ethnographic studies conducted with the primary goal of collecting data from living groups of people that can be used to address real-world problems and questions, although the reports produced by such endeavors are generally useful for academic research. Ethnographic studies undertaken by federal land management (and other) agencies in the United States would generally fall into the applied ethnography category, and often access data in addition to the results of participant observation, such as oral histories, census data, and historic/ethnohistoric documents.

Many applied ethnographic studies have been and continue to be undertaken by units of the NPS, the BLM, and the USFS in order to document cultural affiliation between various ethnic groups and specific kinds of resources (e.g., cultural landscapes and sacred sites or other traditional cultural properties) that may be encompassed within their administrative boundaries. These studies are undertaken under the aegis of various statutes and regulations that govern the operation of these agencies with respect to cultural resources (Appendix A). For the USFS and the BLM, such efforts tend to fall within the category of consultation with Native American tribes (and other groups) that can be identified as affiliated with particular sets of resources and landscapes that may be affected by actions of the agency.[4] The NPS also conducts cultural affiliation studies for the purpose of implementing tribal consultation. However, the agency sponsors ethnographic research for other purposes as well, and manages a complex applied ethnography program with the overarching goal of informing park planning, management, and interpretation. Completion of an ethnographic overview and assessment is a baseline requirement for all park units. Depending on the needs of a particular park, many other kinds of ethnographic studies may be undertaken as well. The recently finalized special report described below is an example of such research.

1. New Bedford Communities of Whaling: People of Wampanoag, African, and Portuguese Island Descent, 1825–1925.

New Bedford Whaling National Historical Park (NEBE) was established in 1996 in New Bedford, Massachusetts, in order to preserve, protect, and interpret the cultural resources associated with the nineteenth and twentieth century whaling industry as it flourished on the northeastern coast of the United States. In 2008, NEBE initiated a special study to examine the presence and contributions of Wampanoag, African American, West Indian, St. Helenian, Azorean, and Cape Verdean people involved in historic whaling industries, including shoreside activities, within the region surrounding the park. Professional researchers with extensive experience in documenting the ethnic groups and local communities involved in historic whaling were contracted to research these communities of New Bedford, using documentary evidence and as well as personal interviews to identify and tell the stories of the people who labored in the whaling industry. The team was also able to access ethnographic data collected earlier by the NPS, including oral history interviews[5], and a companion study, also sponsored by NEBE, of Native Hawaiians, Pacific Islanders, and the Jewish community in historic New Bedford whaling. The team completed the first phase of the project in 2010, submitting a final draft of the report that the park shared with a small group of stakeholders representative of the communities highlighted in the research. Based on their feedback, the park re-evaluated and refined its approach to completing the study, secured the necessary funding to support a final edit (a process that took several years and required more than one

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[4] Ethnographic data collected by and for federal agencies for purposes of documenting cultural affiliations between Native American and other traditional groups and resources such as cultural landscapes and traditional cultural properties may involve disclosure by group members of confidential information that they do not wish to share with the general public. In such cases, agencies may redact such data from reports and other forms of documentation per the legislative authorities that enable its collection.

[5] In the early 2000s, working under the aegis of the ethnography program managed by the Northeast Region of the NPS, Laura Orleans collected and transcribed twenty-eight interviews in her "Places of Whaling" and "Faces of Whaling" projects, providing invaluable documentation for the last phase of New Bedford whaling. Her reports, transcripts, and interviews are curated in the archives of New Bedford Whaling National Historical Park.

source), and received the completed report in 2021. The resulting product is admirable in several respects. Particularly significant is the degree to which the study team was able to untangle and report comprehensively on diverse ethnicities that contributed to the history of whaling in the region. These were stories that had never been fully documented, much less told, and which, in some respects, are still unfolding. From the introduction to the report:

> New Bedford is not a made-up, recreated museum village like Old Sturbridge Village or Plimoth Plantation; it is a living, post-industrial city still being shaped by ethnic communities. The roots of some of these communities reach back to the glory days of whaling in the 1850s—or even long before. New Bedford has a present and future, both of which are tied to a historical past that can be seen still in its landscapes, built environments, and, most importantly, in the faces and histories of its living communities.
>
> The state of being alive and continuous was referred to often during the 1994 congressional hearings about creating New Bedford Whaling National Historical Park (NEBE) and underlies this study. It underlay as well Laura Orleans's oral history-based "Faces of Whaling" and "Places of Whaling" projects. Both used oral historical research among some of the city's ethnic communities to illuminate the experiences and biographies of those who were involved in the last days of whaling and its shoreside industries.
>
> Here the focus is longer, concerned with a century-long span, from 1825 to 1925, during which the industry in New Bedford grew, persisted, and then declined. Yet our focus has steadfastly remained on the people—the ethnic groups (beyond the well-known Yankee masters and seamen) whose skills and courage built the industry, kept it alive, and then saw it through its "death" between 1900 and 1925. In 2016 New Bedford Whaling National Historical Park published its first special ethnographical report on Native Hawaiians, Pacific Islanders, and the Jewish community in New Bedford whaling and the city's early efforts to capture the industry's heritage. This second study examines Wampanoag Indians, African Americans, Azorean and Cape Verdeans, West Indians, and St. Helenians, all of whom have descendants still working and living in the New Bedford of the twenty-first century (Handsman et al. 2021, 1).

C. Cultural Landscapes

Cultural landscapes reveal people's relationship with place and strengthen understanding of historic events, significant people, and patterns in history. They typically exhibit evidence of human interaction, and their authenticity is measured by historical integrity, or the presence and condition of physical characteristics that remain from the historic period. In some cases, they represent the natural setting in which an event occurred, or preserve a natural feature for its significance as a sacred site. They also, at various scales, represent the beliefs, customs and practices that were and may continue to be a source of identity and pride in the past and in many cases the present, important traditions that merit preservation for future generations. Terms such as "Associated Setting, Feeling and Association, Traditional Cultural Property, Sacred Site, Vicarious Experience," are a few of the terms used in U.S. federal law to direct the management of cultural landscapes.

The NPS defines a cultural landscape as a historically significant property that shows evidence of human interaction with the physical environment. This would include both the cultural and natural resources and the wildlife or domestic animals associated with a historic event, activity, or person, or exhibiting other cultural or aesthetic values. NPS cultural landscapes include human-modified ecosystems such as forests, prairies, rivers, and shores; as well as constructed works such as mounds, terraces, structures, and gardens. For purposes of documentation, the NPS divides cultural landscapes into four non-mutually exclusive types: Historic Designed Landscapes, Historic Site, Historic Vernacular Landscape, Ethnographic Landscape.

The NPS began recognizing cultural landscapes in the 1980s as a type of cultural resource. There are many cultural landscapes that fit the four categories defined by the NPS, but it is important to note that only 3.4 percent of the United States is managed by the NPS. This leaves much of the cultural landscape to only be influenced by NPS practices but not managed by them. The USFS and the BLM have a much larger footprint. The BLM manages 10 percent and the USFS 8 percent of the land base of the United States. They have a multiple-use mandate, not solely preservation mandate, so they address cultural landscapes differently from the NPS. Many of the issues that the BLM and USFS address center around Native American cultures and the westward settler migration of the country. Localities such as historic mining districts, historic battlefields, ghost towns and national historic trails, historic event locations and historic structures and their relationship to the landscape drive the policy and adaptation of these agencies to federal laws and regulations.

There are a number of general processes to consider to understand the approach the U.S. federal government takes to cultural landscapes. These include the basic processes of identification, followed by documentation, evaluation, and registration. Each agency accomplishes preservation goals somewhat differently based on their mission and role, but they are all governed by federal law. The primary law governing cultural landscapes in the United States is the National Historic Preservation Act (NHPA). Section 110 of this Act directs the federal agency to identify and nominate historic properties or districts, including cultural landscapes, that can be determined as "eligible" to the National Register of Historic Places (National Register) using a formal category of designations (see Appendix A for more information about the NHPA).

The first major step of this process is identification. A cultural landscape, or other type of cultural resource, must first be identified before it can be managed and protected. What may seem like an unremarkable landscape or site to some could be significant to others, less it will become lost in time. When a cultural landscape has been identified, research must be conducted to help understand its connections to people, both present and past. This may be in the form of an ethnographic report, a cultural inventory developed in conjunction with a cultural landscape report, or similar studies. This research must be documented by investigators with appropriate professional qualifications, and evaluated so that a nomination can be submitted and inclusion on the National Register can be considered. Research findings provide information needed for management decisions and compliance with preservation law. They also assist in determining appropriate treatment, and support interpretive

programs. As stated, each agency may accomplish this work somewhat differently depending on their mission, or employ different nomenclature for their reports. The kinds of background research needed for a given cultural landscape also vary depending on the landscape category or categories that best describe it per the four NPS cultural landscape designations detailed above. Linear cultural landscapes, particularly those such as National Historic Trails, present unique challenges due to the variety of landowners and types of settings that they cross.

The NPS has identified over 800 cultural landscapes within their system. In some cases an entire NPS unit may be a cultural landscape such as Big Hole National Battlefield. Some park units like the Blue Ridge Parkway contain many different cultural landscapes. Some cultural landscapes consist of natural features like Devils Tower National Monument, considered sacred by the Northern Plains Indians and other indigenous people. Some cultural landscapes consist of more recent, human-designed places like the Jefferson National Expansion Memorial.[6]

Administrative units within the National Park System encompass the greatest number of designed cultural landscapes listed on the National Register. Other categories outside of the NPS listings, in order of frequency, include: ranches; mining-related sites and districts; transportation corridors (e.g., roads, trails, routes, highways, parkways, canals); battlefields; and traditional cultural properties (TCPs). TCPs constitute a recent, additional type of historic property designation to the National Register. A TCP is a property or place that is evaluated as "eligible" on the National Register because of its association with cultural practices and beliefs that are rooted in the history of the community and are important to maintaining the continuity of that community's traditional beliefs and practices.

   1. Demonstration Example: Experiencing Cultural Landscapes along 2,700 miles of the Old Spanish National Historic Trail

In 1968, the United States Congress passed the National Trail System Act (NTSA). In part, the purpose of this legislation was to promote the preservation of, public access to, travel within, and enjoyment and appreciation of the open-air, outdoor areas and historic resources of the nation. Currently, 30 trails have been designated.

The Old Spanish National Historic Trail (OSNHT) was designated by Congress in 2002 as the 23rd trail added to the system. OSNHT Trail administrators' primary goal is to preserve and promote the pack mule trade route that was established and used from 1829-1848 between Santa Fe, New Mexico and the frontier settlements in California that would later become Los Angeles. Many of the more than 2,700 miles of the OSNHT are characterized by stark landscapes that recall those described by early users of the trail. The trail corridor is informally considered to encompass five miles on either side of the centerline of the trail

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[6]Worth noting, some types of landscapes studied by the federal government are identified and used to support a National Register nomination, but are not added to the National Register in their own right. For example in a study by the NPS and the Colorado Office of Archaeology and Historic Preservation completed in October of 2011, they determined that western landscapes can be considered iconic because of the vast influence they have had on American painting, photography, fiction, song, poetry, movies, television and radio, etc., but these landscapes have not been categorically nominated to the National Register.

alignment to include the nearest elements of the viewshed, and parts of the cultural landscapes, landmarks, and traditional cultural properties located near the trail. The number of acres encompassed by this designation and the diversity of cultural and natural resources located within them are vast. The trail corridor is rich with open stretches of western terrain with few modern intrusions, offering exceptional opportunities for the public to enjoy and appreciate both the natural and cultural environment. The trail has been described as "the longest, crookedest, most arduous pack mule route in the history of America" (Hafen and Hafen 1993). The trail routes cross the rugged terrain of the American West, characterized by extremes in elevation and temperature from the highs of the Colorado Rockies to the lows of the Mojave Desert. The routes through southern Colorado cross an area that is often among the coldest places in the continental United States, whereas southeastern California is beset with some of the hottest temperatures in the country. Even by today's standards, the OSNHT remains an arduous route, one where public users can encounter the landscapes and experience the adventures of the travelers of the past. The OSNHT also honors the persistence and courage of early nineteenth-century Mexican traders traveling back and forth from what would become New Mexico across freezing mountains and burning deserts to Los Angeles, California.

It is a complex task to identify, document, evaluate, and register all the resources, qualities, values, associated settings, uses and natural resources that are related to the OSNHT along its length. Multiple land statuses are involved, from private land to various local, state, and federal agencies, and tribal jurisdictions. It is also a monumental effort to plan for, manage, and monitor its use. For additional overview of the OSNHT and the processes and universal best practices used, refer to the Feasibility Study (NPS 2001), the Comprehensive Administrative Strategy (BLM and NPS 2017), and the policy documents and field books listed in Appendix A (see description of the NTSA).

III.   Conclusions on Universal Best Practices

This section discusses aspects of managing the subsets of cultural resources addressed in this briefing paper per strategies that have proven successful in the United States, described here as "universal best practices." These practices are common to all cultural resources management endeavors. However, it is important to note that the kinds of resources addressed (e.g., a constellation of features (natural and/or cultural) identifiable as a cultural landscape vs. traditional folkways of a particular community) will affect how these methodologies are strategized and deployed. There are basic procedures to follow, and successful completion of a particular step will lay the foundation to lead into the next one.

It is important to acknowledge that the strategies recommended here as "universal best practices" stem from more than a century of effort in the United States to identify, study, protect, preserve, and facilitate public enjoyment of significant cultural and natural resources that comprise the national patrimony. The many decades of work by lawmakers, resources management professionals, and subject matter experts in a wide variety of fields have created the environment in which this paper's "demonstration examples" were able to be envisioned, let alone accomplished. In many cases, the existence of significant preservation legislation such as the NHPA has provided the major impetus and the funding for land managers to take

the steps necessary to identify, study, and protect heritage resources of any type. It is also true that over the course of the past century, cultural resources preservation efforts in the United States have been significantly shaped by changing ideas about how to manage the complexities inherent to the cultural diversity of this country. For example, the first Office of Indian Affairs was created in the United States in 1824 as part of the War Department. Today, many Native American tribal governments manage their own tribal historic preservation programs, with funding, training, and other support provided by the Historic Preservation Fund administered by the NPS.

1. Identify the resources to be preserved:
As outlined in the discussion of cultural landscapes, identification is the first and most important step. Whatever type of cultural resource is under consideration, it is difficult (if not impossible) to accomplish any sort of management/preservation activities on its behalf if it remains unidentified. In the United States, federal land management agencies are directed by legislation and agency-specific policies to make such identifications when actions that may affect the resources are contemplated. These requirements are generally linked to funding sources that support at least some of the necessary identification studies, which may include archaeological surveys, cultural landscape inventories, architectural documentation, ethnographic research, and/or other forms of documentation. In some instances, useful investigations may fall outside of an agency's purview to pay for or sponsor, in which case partnerships with academic researchers, state and local governments, or community organizations may be necessary to accomplish identification efforts. In a larger sense, "identification" of resources also encompasses identifying the group or groups of people who consider them to be important, not only in the interests of facilitating necessary studies, but also in clarifying the people with whom to consult when federal actions might affect the resources. Culturally affiliated groups might include Native American tribes, as well as members of other communities.

A number of caveats are important to consider. First, when a cultural property or other resource is identified, defining it is inherent to that process. This could be very complicated, particularly with properties as large in scale and complex in formulation as historic trails. As the OSNHT demonstration example illustrates, the trail crosses thousands of miles, multiple cultural and environmental settings, and numerous land jurisdictions, including private land, tribal land, municipal localities (which are generally not subject to federal preservation laws), and a variety of agency-administered lands. As such, a relevant question to ask is "how does one realistically set boundaries for such a resource, inventory it, and effectively plan for its management?" In addition, definition and preservation of cultural landscapes is a fairly new practice in the United States. While the NPS has led the development of methodologies that primarily fit within the confines of the NHPA, other federal agencies are also developing procedures for their management (Appendix A). Rhe National Trail System Act incorporates requirements to preserve the setting(s) associated with historic events that took place along a historic trail; the methods for accomplishing this task are still being refined.

A second important caveat involves managing potential consequences of identifying and preserving particular kinds of cultural resources. Such efforts are intended as beneficial to the continued existence of a resource. But spotlighting particular kinds of resources, whether

they are natural or cultural landscape features or traditional cultural practices, could introduce attention that could prove deleterious. For example, nominating a cultural resource to the National Register can enhance preservation opportunities, but if such a resource is also a traditional cultural property, a culturally affiliated group may view increasing its public visibility as negative. Creating a trail to bring visitors to locations from which they can view rock art panels could provide increased exposure to vandalism. Another specific example relates to the Jean Lafitte demonstration example discussed in Section II.A.1, where groups of Mardi Gras Indians (self-identified as "tribes") were sponsored to work on their costumes for the coming "Fat Tuesday" celebrations in the park's Visitor Center, which provided access for rival "tribes" to spy on them and made it more difficult to keep the costumes secret. Additionally, confidentiality of some categories of cultural information has been particularly emphasized in the last few decades by Native American groups that consult with federal land management agencies regarding locations that may contain human remains such as archaeological sites, or traditional cultural properties.

2. Coordinate with partners and communities:
"Partners" and "Community" in this sense can signify a variety of collections of people, including constituencies as diverse as Native American tribes and/or descendants of specific ethnic groups (such as the Isleños of St. Bernard Parish, near New Orleans); state and local governments and municipalities; organizations such as historic trail and traditional craft enthusiasts and "friends of" groups; music and dance performance groups; academic researchers; museums; and more. Members of one community may belong to or at least participate in the activities of another. Sister agencies, also subject to the regulatory environment within which cultural resources management takes place in the United States, represent another type of community or partner with which to coordinate. Depending on the activity, federal land management agencies may be legally required to coordinate with partners and communities.

Partnerships can strengthen the efforts of land management agencies with respect to preservation of cultural and natural resources. For example, when a local community develops a vested interest in a heritage resource such as a historic trail or a landform feature with cultural significance, whether for economic reasons such as promoting tourism or simply an appreciation of the meaning and significance of the resource, incidents of vandalism may diminish and the community may mobilize in support of agency efforts toward documentation and preservation of a cultural site. This vested community interest is especially important when such efforts involve closures or limited access to certain resources. Another example is that members of a community group may be able to conduct activities that agencies are unable to sponsor or participate in, including some kinds of fundraising. Community volunteers can also accomplish some tasks that agencies may never have the staff or funding to complete. The "site stewards" programs sponsored by many federal land management agencies, particularly the BLM and the USFS, provide an example of invaluable community-based support. Specific details for the operation of such programs vary by agency, but in general, site stewards are volunteers who are assigned cultural resources loci, particularly archaeological sites, that they visit periodically in order to assess conditions and to check for evidence of destructive activities such as illegal excavations. These volunteers receive training as they begin their period of service so that they know what

to look for, how to safely and correctly document it, and how to inform agency staff in the event that they observe evidence of depredations. Site stewards have played a key role for many agencies in proactively enforcing the Archaeological Resources Protection Act (ARPA) on federally managed lands (see Appendix A).

Community collaboration may be essential to a preservation effort, particularly if intangible or non-material cultural resources are the focus, as in the Jean Lafitte demonstration example (II.A.1), wherein the NPS was directed to seek out members of communities in the Mississippi Delta Region who exemplify or embody the living cultural traditions at the heart of the folk life programs for which the park was created. For Jean Lafitte, these traditions would include musicians, cooks, boatbuilders, dancers, and fishermen and hunters, to name a few.

Importantly, some forms of community involvement are required by law. This would include consultation with Native Americans and other groups demonstrated to be culturally affiliated with cultural sites and landscapes located on agency-administered lands, or within an area that would be affected by a management activity undertaken by a federal agency. For agency actions that involve consultation per the NHPA and/or the National Environmental Policy Act (NEPA), federal agencies must provide members of the general public an opportunity for comment (see Appendix A).

The benefits of effective community collaboration and partnerships are clear. However, that is not to say that community involvement in agency activities (or review of those activities) is always positive, or easy to accomplish. For example, what if the goals of a community affiliated with (or located adjacent to) particular sets of cultural resources are counter to the actions undertaken, or planned by, or legally required of federal land managers? In some instances, members of more than one, or competing, communities may claim affiliation to a particular resource and express opposing views on how that resource should be identified or preserved. In recent years, this dilemma has arisen with some frequency in situations involving consultation with multiple groups of Native Americans (including American Indian lineal descendants and tribes, Alaska Natives, and Native Hawaiians) as well as other traditional and/or culturally affiliated groups, who may express a wide variety of different, and sometimes contradictory, viewpoints about how cultural resources should be documented, managed, and preserved. There are no generic or simple answers to these questions; resolutions are necessarily case-specific, although reviewing examples of successful collaboration, such as those provided here, may suggest some useful approaches.

3. Develop a comprehensive plan, incorporating both short- and long-term goals:
Once the target cultural resources and the communities that are culturally affiliated or otherwise invested in their management and preservation have been at least initially identified, developing a plan for how to accomplish further work is essential. Such a plan must include:
- provisions for further detailed study as appropriate (e.g., surveys/inventories of cultural sites and landscapes) and ethnographic investigations of culturally affiliated group or groups of people, including identification of traditional cultural properties as well as ongoing traditional cultural practices;

- specification of appropriate means of preservation and interpretation for the resource(s);
- sources of funding, both within an agency's purview as well as non-governmental sources; and
- coordination with planning and preservation activities for other cultural resources managed by the same agency (or sister agencies), taking into account their priorities but also legal requirements, such as activities stipulated by the NHPA or NEPA.

Professional ethnographic and related studies have been discussed in detail elsewhere in this document (see section II.B). Reports from such investigations will be an essential source of information regarding appropriate means of preservation and interpretation for particular categories of resources. In some cases, this might consist of documentation, followed by limiting or even completely excluding public access. In others, this might consist of developing interpretive and/or recreational trails and museum exhibits and publications that highlight the resource and may enlist public support of continued preservation. For non-material cultural resources, preservation and interpretation might be best accomplished by providing seed money to community groups that foster the continued expression of traditional practices, such as building musical instruments and performing with them, or creating publications and exhibits that incorporate indigenous languages.

Accessing, or facilitating access to, a variety of funding sources is critical. Federal and state agencies, and to a lesser extent local governments, can generally access programmatic sources of funding for some management activities, such as completing an inventory survey for a landscape that will be affected by activities such as fuel reduction, grazing, or public recreation. Some funding sources are tied to specific activities, such as completing consultation with Native Americans regarding disturbed human remains or objects of cultural patrimony per the provisos of the Native American Graves Protection and Repatriation Act (NAGPRA) (see Appendix A). Some significant funding sources exist outside of the purview of federal agencies, and may only be accessible to outside communities or groups as special grants. In these instances, an agency might help partnering communities to identify such funding sources and assist in preparing grant proposals. Academic researchers may also be able to provide significant assistance and information for agencies. Such researchers may undertake detailed investigations relevant to an agency's preservation efforts for their own purposes, but their efforts can be supported by agency funds as appropriate. The BLM, for example, has provided scholarships to students seeking advanced degrees involving the investigation of subject matter relevant to the agency's mission.

The OSNHT demonstration example (see section II.C.1) briefly references a suite of agency planning activities that have taken place with respect to identification and management of the trail, including (in order of completion), a Feasibility Study (NPS 2001), a Comprehensive Administrative Strategy (BLM and NPS 2017), and policy documents and field books that have been developed and refined by the BLM in coordination with partners, including other agencies (see Appendix A). Significantly, some of these documents have highlighted the need for additional research, including cultural affiliation studies.

4. Evaluate ongoing efforts, and adapt them as necessary:

Simply put, this means that effective cultural resources managers should be willing to learn from their mistakes as well as their successes, incorporating flexibility into their approaches as appropriate and refining their strategies in response to changing conditions. This particular "universal best practice" recommendation might sound easy, but may actually be the hardest of all for agency cultural resources managers to accomplish. The government often operates slowly and once a particular activity has been specified and funded, it can be difficult to change strategies quickly. This is particularly true of management actions that are tied to review and compliance per the stipulations of laws such as the NHPA and NEPA. This aspect of agency management is sometimes difficult for both community partners and agency staff to understand and cope with. One way to incorporate opportunities to refine programmatic approaches to cultural resources preservation activities is to plan ahead for evaluations to take place, or to solicit community input regarding a particular activity or project at specified intervals. In the end, agency managers have to make decisions. Even when the outcomes may not prove to be universally popular, asking questions about the effectiveness of particular approaches or programs is a helpful approach to making these management decisions.

Effective preservation and management of cultural resources of any kind is an ongoing process, one with many twists and turns, and sometimes, surprises. For example, research might identify groups of people previously not identified as culturally affiliated with a particular resource. New funding sources might be created in support of particular preservation initiatives. It might take years to accomplish a particular aspect of research or preservation, as illustrated by the NEBE ethnographic research efforts (see section II.C), which began in the early 2000s and have only very recently come to fruition. The ability to adapt is key to success.

Summary

In conclusion, four words from the discussion of universal best practices are emblematic of the recommended approaches. They are: **identify, coordinate, develop,** and **adapt**. It is also important to emphasize that effective preservation and management of cultural resources of any kind constitutes a process, not an event. These principles have been developed in the United States over many decades in response to circumstances unique to this country, but they are undoubtedly applicable, in whole or in part, to successful management of cultural resources throughout the world.

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Appendix A.   A Select List of Cultural Resources Statutes, Regulations, and Policies in the United States; Additional Sources of Useful Cultural Resources Management Information

A.1. Federal Statutes and Implementing Regulations

Major pieces of legislation that guide federal cultural resources management for land-managing agencies— including the practice of applied ethnography—in the United States are listed below. For brevity, statutes are designated by their placement in the United States Code (USC); most encompass one or more public laws (PLs) that can easily be referenced per their USC designation, as well as implementing regulations listed in the Code of Federal Regulations (CFR). A term that recurs repeatedly in the legislation (and elsewhere), "historic property" (or properties), broadly refers to cultural sites such as buildings, archaeological sites, sacred and other traditional cultural sites, and cultural landscapes.

National Historic Preservation Act (NHPA) of 1966 (54 USC §300101 *et seq.*).

This statute constitutes the most comprehensive historic preservation/cultural resources management legislation promulgated in the United States. It establishes a partnership between the federal government and state, tribal, and local governments supported by federal funding for preservation activities through the Historic Preservation Fund. Grants-in-aid funds (administered by the NPS) are provided to support State and Tribal Historic Preservation Officers (SHPOs and THPOs), and local certified governments. The NHPA also created the Advisory Council on Historic Preservation (ACHP), and the National Register of Historic Places. Federal agencies, and state/local and other institutions (such as museums) receiving federal funds are required, per Section 106 of the statute, to assess the effects of their actions on historic properties (including archaeological sites and traditional cultural properties). These assessments are subject to review by SHPOS/THPOs/the ACHP as well as the general public. Implementing regulations for the NHPA are stipulated in 36 CFR 800. Recent amendments to these regulations specify enhanced requirements to consult with Native American tribes and other communities with demonstrated cultural affiliations to cultural properties located on federally managed lands.

The National Trails System ACT (NTSA) of 1968 (16 USC §§ 1241-1251).

The NTSA developed directly out of the *Trails for America* report commissioned by the US Congress, and established three different types of trails: National Scenic Trails, National Recreation Trails, and Connecting and Side Trails. Later, in 1978, an amendment to the NTSA created an additional category: National Historic Trails. The Iditarod, Lewis and Clark, Mormon Pioneer, and Oregon National Historic Trails were among the first to be established.

Each federal agency has developed policy and procedures to implement this law. For the BLM, these are found in: BLM Manual 6250, *National Scenic and Historic Trail Administration* and BLM Manual 6280, *Management of National Scenic and Historic Trails and Trails under Study or Recommended as Suitable for Congressional Designation (*both dated 9/14/2012). Additional guidance for the BLM can be found in BLM Technical Reference 6280-1; see Volume 1 (*National Scenic and Historic Trails*

Inventory, Assessment, and Monitoring Methodology), and Volume 2 (*Field Guide, National Scenic and Historic Trails Inventory, Assessment, and Monitoring*). For the NPS, guidance is found in Director's Order 45, "National Trails System." This Order, signed in 2013, outlines NPS policies and procedures for national scenic and historic trails to ensure that congressionally designated trails are recognized and operated on a consistent basis to ensure protection of the characteristics and values of the trails and their use and enjoyment by future generations. In addition, it outlines NPS responsibilities in processing nominations and offering program leadership for national recreation trails.

National Environmental Policy Act (NEPA) of 1969 (42 USC, §4321 *et seq.*).
NEPA requires federal agencies to assess the environmental effects (and to consider existing statutes and regulations that protect cultural and natural resources) of their proposed actions prior to making management decisions. The range of actions covered by NEPA includes: making decisions on permit applications, federal land management activities, and constructing highways and other publicly-owned facilities. NEPA established the President's Council on Environmental Quality (CEQ) to guide NEPA implementation nationwide, but each federal agency defines a NEPA process (subject to review) that stipulates how the environmental and related socio-cultural and economic effects of their proposed actions will be evaluated. An agency's NEPA process also specifies how agencies will provide opportunities for public review and comment. Implementing regulations for NEPA are stipulated in the CFR, Title 40.

The American Indian Religious Freedom Act (AIRFA) of 1978 (42 USC, 42 §1996).
AIRFA protects the rights of Native Americans (i.e., American Indians, Eskimos, Aleuts, and Native Hawaiians) to exercise their traditional religions by ensuring access to sacred sites (even when located on federally protected land), use and possession of sacred objects, and the freedom to worship through traditional ceremonial activities. Prior to the passage of AIRFA, many aspects of indigenous religions and sacred ceremonies—such as the ritual use of peyote—had been prohibited by law. Federal land-managing agencies regularly consult with Native American tribes determined to be culturally affiliated with sacred sites and other resources (such as plants that they may request permission to gather) in order to determine appropriate access for ceremonial purposes.

Archaeological Resources Protection Act (ARPA) of 1979 (16 USC, §§470aa-470mm).
ARPA focuses on archaeological sites and the cultural materials that may be collected from them, providing specificity lacking in an older statute, the Antiquities Act of 1906. ARPA defines the conditions under which excavation of archaeological sites on federal and Native American lands in the United States may be permitted, as well as the removal and disposition of archaeological materials collected from those sites. Particularly important, ARPA establishes a basis for prosecution and punishment for anyone—other than permitted individuals or institutions involved in valid excavations, analyses, and/or curation—attempting to sell or purchase, but also to exchange, transport, or receive cultural materials from federal/Native American archaeological sites. Implementing regulations for ARPA are found in 36 CFR 79.

The Alaska National Interest Lands Conservation Act (ANILCA) of 1980 (16 USC §§410hh-3233; 43 USC §§1602-1784).

Roughly two-thirds of lands in the state of Alaska (ca. 222 million acres) are federally owned or managed. ANILCA designated many new or expanded conservation system units, the single largest expansion of protected lands in US history, including: national parks and preserves; national wildlife refuges; wilderness areas; wild and scenic rivers; the Iditarod National Historic Trail; the Steese National Conservation Area; and the White Mountains National Recreation Area. ANILCA directs federal land managers to cooperate with others to balance the national interest in Alaska's natural resources with recognition of Alaska's economy and infrastructure, and its distinctive lifeways, which encompass many traditional cultural practices. ANILCA also incorporates stipulations for: management of subsistence activities, a subject of major concern to Alaska natives; transportation to and across protected landscapes; use of cabins; mining; and management of archaeological sites and scientific research. ANILCA codified many of the recommendations of agencies and others developed in response to the Alaska Native Claims Settlement Act of 1971 (43 USC §§1601 *et seq*.). Implementing regulations for ANILCA are found in 43 CFR 36; also see 36 CRR 242 and 50 CFR 100.

The Native American Graves Protection and Repatriation Act (NAGPRA [25 USC, §§3001 *et seq*.]).

NAGPRA codifies the rights of Native American lineal descendants, Indian tribes, and Native Hawaiian organizations with respect to the treatment, repatriation, and disposition of Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony, with which they can demonstrate a relationship of lineal descent and/or cultural affiliation. The statute also enhances protection for Native American burial sites, and provides funding for representatives of culturally affiliated tribes and/or Native Hawaiian organizations to review human remains and other materials associated with burials curated in repositories that receive federal funds in order to develop appropriate plans for their disposition, which may include repatriation/reburial of specified items. All federal land-managing agencies consult regularly with Native American Tribes and Native Hawaiian organizations when contemplating actions that may disturb sites where burials and/or objects of cultural patrimony are likely to be encountered. Implementing regulations for NAGPRA are found in 43 CFR 10. Recently, the Department of the Interior consulted with 71 Tribal Nations across the United States to refine and improve the regulations.

Other legislation that addresses management of cultural resources for particular agencies or activities undertaken by those agencies include: the USFS Organic Administration Act of 1897; the NPS Organic Act of 1916; and the Federal Land Policy and Management Act (FLPMA) of 1976, as amended, which created the BLM as it is currently configured.

A.2 Executive Actions and Memoranda

The President of the United States has the authority to stipulate certain actions within the purview of the federal government and his or her constitutional authority, per Executive Orders (EOs). Some of the most significant such orders with respect to managing traditional

cultural practices for land- managing agencies are listed below. EOs can lead to amendments in the implementing regulations for statutes such as those detailed above, but facilitate necessary actions more quickly than revisions or amendments can be executed.

Executive Order 11593; Protection and Enhancement of the Cultural Environment

This order, signed in 1971 within a few years of the passage of the NHPA, directed each federal agency to conduct cultural resources surveys to identify, evaluate, and nominate all "eligible" historic (cultural) properties to the National Register of Historic Places within a two -year period. Many of the provisions of the order were later codified in Section 110 of the NHPA, but an immediate and lasting impact came from the interim procedures it stipulated, guiding federal agencies' treatment of their cultural properties while the comprehensive surveys were being accomplished. Most important, EO 11593 effectively added the phrase "or eligible for inclusion" to the language of Section 106 of the NHPA. Because the survey and identification of "eligible" historic properties on all federal lands could never be completed—especially given the fact that new lands are periodically placed under federal protection—the interim guidance became the standard practice among federal agencies, continuing to the present day.

Executive Order 13007; Indian Sacred Sites

Signed in 1996, EO 13007 requires federal land-managing agencies to accommodate access to and ceremonial use of Native American sacred sites by their identified religious practitioners, and to avoid adversely affecting the physical integrity of such sites. It also requires agencies to develop procedures for reasonable tribal notification of proposed actions or land management policies that may restrict access to or ceremonial use of, or adversely affect, sacred sites. These stipulations are addressed when an action contemplated by a federal agency may affect a historic property (including a cultural landscape) that is also considered by an Indian tribe to be a sacred site.

Executive Order 13175; Consultation and Coordination with Indian Tribal Governments.

Issued by 2000, this EO requires federal departments and agencies to consult with Indian tribal governments when considering policies that would impact tribal communities.

Presidential Memorandum re Government-to-Government Relations with Native American Tribal Governments

Signed in 1994, this document acknowledges a unique relationship between the federal government of the United States and Native American tribal governments as set forth in the Constitution of the United States, as well as treaties, statutes, and court decisions. As agencies undertake activities affecting Native American tribal rights or trust resources, they are directed to implement them in a manner respectful of tribal sovereignty. The memorandum also outlines the principles agencies are to follow in their interactions with Native American tribal governments, clarifying how the federal government should operate within a government-to-government relationship with federally recognized Native American tribes.

A.3. Agency-Specific Management Policies and Directives

National Park Service Management Guidance-28 Cultural Resource Management Guideline

Finalized in 1998, NPS-28 comprehensively addresses how cultural resources are to be managed within the National Park System, interpreting all relevant laws, executive orders, and standards as they apply to units administered by the NPS. Among other subject matter, NPS policy defines traditionally associated peoples, commits management to consult with them and other members of the public, and to conduct ethnographic research on the values they attach to park resources.

Secretary of Interior's Standards

The Secretary of the Interior has issued comprehensive guidelines that detail how all federal agencies that are administered by the Department of the Interior are to conduct various activities within the realm of cultural resources management, including: Archeology [sic] and Historic Preservation; Cultural Anthropology; History and Architectural History; Architectural and Engineering Documentation; Federal Agency Historic Preservation Programs; Historic Vessel Preservation; Rehabilitation; Treatment of Historic Properties; and Treatment of Historic Properties and Cultural Landscapes. These standards stipulate professional qualifications needed by agency employees as well as contractors to accomplish work such as ethnographic studies or cultural landscape inventories, and also provide overall guidance as to how such projects should be appropriately accomplished. Land-managing agencies such as the USFS that are not administered by the Department of Interior often reference these standards because they provide such comprehensive detail.

Director's Order 3389

Issued by the Secretary of the Interior in 2020, the purpose of this order is to coordinate and clarify reviews for actions contemplated by federal agencies per Section 106 of the NHPA by more fully coordinating the Section 106 process and the review process under the NEPA. A major objective is to reduce reliance on mitigation measures that do not lessen the adverse effects of the undertaking on historic properties (e.g., offsite compensatory mitigation).

A.4 Sources of Cultural Resources Management Information Available on the Internet

This is a list of websites (grouped per subject matter) that provide additional detail about how land-managing agencies in the United States accomplish the myriad tasks involved in effective cultural resources management.

Cultural Landscape Programs (NPS, BLM, USFS)

<<https://www.nps.gov/sujects/culturallandscapes/index.htm>>
<<https://www.fs.usda.gov/managing-land/heritage>>
<<http://www.blm.gov/program/cultural-resources>>

Ethnography

<<https://www.nps.gov/ethnography/index.htm>>

Secretary of Interior's Standards

<< https://www.nps.gov/subjects/historicpreservation/standards.htm>>

Project Phase 2.3 – Briefing Paper, Subtopic: Consumptive Use of Resources (Subsistence)
Lead Author: Sandy Rabinowitch

I.   Introduction.

In 1980, after more than seven years of contentious national debate, the United States (U.S) Congress passed and President Jimmy Carter signed a historic law protecting more acres of land than had ever been preserved at one time in the history of the U.S. This law is the *Alaska National Interest Lands Conservation Act* (ANILCA).[1]

This complex law fills 180 pages addressing a diversity of topics related to the conservation units (parks, wildlife refuge, forests, etc.), the resources protected and the human uses allowed within these federal conservation units in the State of Alaska.

Within ANILCA there are 15 major sections known as "Titles." Title VIII deals *Subsistence Management and Use* and is the subject of this paper.
<https://www.doi.gov/sites/doi.gov/files/13-anilca-title-8-508.pdf>

The U.S. Department of the Interior's International Technical Assistance Program delivered a 40-hour course on Title VIII in Stepantsminda, Georgia in 2010. Materials from that course are available upon request.

II.   Overview

Consumptive uses of resources within National Park Service managed lands in 49 of the 50 States in the United States is very limited. On other federal lands, such as Wildlife Refuges and Bureau of Land Management lands, typically more resources can be harvested but they too are subject to various federal and state laws and regulations. The details of such allowances and regulations for the whole of the U.S. are beyond the scope of this briefing paper.

The single example used in this briefing paper is based on federal U.S. law but focuses only on the federal lands inside the State of Alaska. The ANILCA (pronounced "A-nil-ka") is a well-known law in Alaska. The law and the administration of the conservation units established remains a topic of frequent discussion today even though more than 40 years have passed since the law was signed. This law set aside and protects 104,000,000 acres / 42,087,306 hectares.

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[1] ANILCA is codified as 16 USC (United States Code) 3101 et. Seq.

ANILCA Title VIII "Subsistence Management and Use"

Title VIII deals with the use (hunting, trapping, fishing & gathering) of flora and fauna, inside the boundaries of protected areas that have historically provided food, fuel, shelter and tools to people living within or nearby to federal land. These subsistence uses actively continue today serving an estimated 130,000 people within Alaska.

ANILCA Title VIII is sub-divided into 16 "sections" (listed immediately below) dealing with individual aspects of subsistence use and management.

§801 Findings.
§802 Policy.
§803 Definitions.
§804 Preference for subsistence use.
§805 Local and regional participation.
§806 Federal monitoring.
§807 Judicial enforcement.
§808 Park and park monument subsistence resource commissions.
§809 Cooperative agreements.
§810 Subsistence and land use decisions.
§811 Access.
§812 Research.
§813 Periodic reports.
§814 Regulations.
§815 Limitations, savings clauses.
§816 Closure to subsistence uses.

The sections lay out a complete program, a framework and many details about the day-to-day workings of the program. Strong protections are provided for the conservation units, the land and resources. Local people are significantly engaged in a public participation process. People can (and do) directly use resources from within the boundaries of protected areas where subsistence is allowed.

A detailed section-by-section explanation follows.

Findings:

Section 801. *The Congress finds and declares that-- (1) the continuation of the opportunity for subsistence uses by rural residents of Alaska, including both Natives and non-Natives, on the public lands and by Alaska Natives on Native lands is essential to Native physical, economic, traditional, and cultural existence and to non-Native physical, economic, traditional, and social existence;*

Policy:

Section 802. *(1) consistent with sound management principles, and the conservation of healthy populations of fish and wildlife, the utilization of the public lands in Alaska is to cause the least adverse impact possible on rural residents who depend upon subsistence uses of the resources of such lands; consistent with management of fish and wildlife in accordance with recognized scientific principles and the purposes for each unit established, designated, or expanded by or pursuant to Titles II through VII of this Act, the purpose of this title is to provide the opportunity for rural residents engaged in a subsistence way of life to do so;*

Definitions: The term Subsistence Uses means:

Section 803. *...the customary and traditional uses by rural Alaska residents of wild renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making of and selling of handicraft articles out of nonedible by products of fish and wildlife resources taken for personal or family consumption, for barter, or sharing or family consumption and for customary trade.*

A Priority for Subsistence Taking:

Section 804. *Except as otherwise provided in this Act and other Federal laws, the taking on public lands of fish and wildlife for nonwasteful subsistence uses shall be accorded priority over the taking on such lands of fish and wildlife for other purposes.*

This means that subsistence taking is a priority over sport hunting (recreational) where the two uses overlap in place and time.

While about 60% of Alaska remains federally owned and managed, the other 40% is owned by the State of Alaska, Alaska Native Corporations, Boroughs, Cities and private individuals. These lands (the 40%) and most federal lands (the 60%), <u>with the exception of NPS managed National Parks and Monuments,</u> are simultaneously managed by federal agencies and the State of Alaska via its Board of Game and Department of Fish & Game for sport (recreational) hunting, trapping and fishing. Somewhat unique in the U.S., this arrangement (large-scale overlapping legal jurisdiction) is locally known as "dual management" and adds an additional significant level of complexity to Federal and State management. For reasons of brevity this paper is not going into detail on these complexities. However, information is available if anyone in Georgia wishes to learn more.

Local and Regional Participation: Public participation is discussed in Section 805 and Section 808. The requirements in the law for local participation are extremely important and are treated in great detail immediately below. (This section is also the subject of a stand-alone briefing paper from the Public Outreach/Environmental Education sub-team entitled "Public Outreach")

Section 805. Local and Regional Participation is <u>mandated</u> (emphasis added). Originally, in 1980, the law required the establishment of six geographically based regions and matching

Regional Advisory Councils. In 1992, following a significant State court lawsuit and a subsequent State of Alaska Supreme Court decision, the implementation of this section increased the number of regions from six to ten and the number of Regional Advisory Councils increased to ten. The State of Alaska fell out of compliance with federal law, the Federal Government re-asserted authority over Title VIII and established the Federal Subsistence Board to administer the Title VIII mandated program. <https://www.ecfr.gov/current/title-50/chapter-I/subchapter-H/part-100/subpart-B/section-100.10> (See Appendix I for the full set of Federal regulations)

Regional Advisory Councils: These councils advise the Federal Subsistence Board which promulgates federal regulations having to do with hunting, trapping and fishing on federal lands in Alaska (approximately 60% of Alaska's land)

Each regional advisory council shall be composed of residents of the region and shall have the following authority (ANILCA section 805 (a)(3)).

The review and evaluation of proposal for regulations, policies, management plans, and other matters relating to uses of fish and wildlife with the region (ANILCA section 805 (a)(3)(A)).

The provision of a forum for the expression of opinions and recommendation by persons interested in any matter related to the subsistence uses of fish and wildlife within the region. (ANILCA section 805 (a)(3)(B)).

*The encouragement of local and regional participation pursuant to the provisions of this title in the decisionmaking process affecting the taking (*harvesting) *of fish and wildlife on the public lands (*protected areas*).* (ANILCA section 805 (a)(3)(C)).

The Secretary of the Interior (who oversees National Parks, Wildlife Refuges and Bureau of Land Management Lands) is required to do several things by Title VIII.

The Secretary shall assign adequate qualified staff to the Regional Advisory Councils and make timely distribution of all available relevant technical and scientific support data to the…councils (ANILCA 805 (b)).

The Secretary, in performing his monitoring responsibility pursuant to §806 and in the exercise of his closure and other administrative authority over the public lands, shall consider the report and recommendations of the regional advisory councils concerning the taking of fish and wildlife on the public lands within their respective regions for subsistence uses. The Secretary may choose not to follow any recommendation which he determines is not supported by substantial evidence, violates recognized principles of fish and wildlife conservation, or would be detrimental to the satisfaction of subsistence needs. If a recommendation is not adopted by the Secretary, he shall set forth the factual basis and the reasons for his decision. (Emphasis added) (ANILCA 805(c))

Section 805(c) has evolved to be a very important provision of the law. It puts a strong influence on the Secretary to accept recommendations from the Regional Advisory Councils. This means

that the local representatives play a significant role in determining the detailed contents of what become federal regulations that govern hunting, trapping and fishing on federal lands.

Section 806. Federal Monitoring. This section was largely rendered moot when the State of Alaska fell out of compliance with ANILCA and the federal government re-asserted full authority to manage the implementation of Title VIII.

Section 807. Judicial Enforcement. This section was also largely rendered moot when the State of Alaska fell out of compliance with ANILCA and the federal government re-asserted full authority to manage the implementation of Title VIII.

Section 808 For National Parks and National Park Monuments where subsistence use is authorized (most but not all units) ANILCA further established "Park and Park Monument **Subsistence Resource Commissions**. These seven advisory bodies advise and make recommendations only for NPS Park and Monuments lands. Although their geographic reach is more limited than the Regional Advisory Councils their influence is designed to offer greater detail on management and use within these most highly protected conservation units in Alaska.

Section 808 (a) *...the Secretary and the Governor shall each appoint three members to a subsistence resources commission for each national park or park monument within which subsistence uses are permitted by this Act. The regional advisory council established pursuant to §805 which has jurisdiction within the area in which the park or park monument is located shall appoint three members to the commission each of whom is a member of either the regional advisory council or a local advisory committee within the region and also engages in subsistence uses within the park or park monument. Within eighteen months from the date of enactment of this Act, each commission shall devise and recommend to the Secretary and the Governor a program for subsistence hunting within the park or park monument. Such program shall be prepared using technical information and other pertinent data .... Each year thereafter, the commission, after consultation with the appropriate local committees and regional councils, considering all relevant data and holding one or more additional hearings in the vicinity of the park or park monument, shall make recommendations to the Secretary and the Governor for any changes in the program or its implementation which the commission deems necessary.*

(b) The Secretary shall promptly implement the program and recommendations submitted to him by each commission unless he finds in writing that such program or recommendations violates recognized principles of wildlife conservation, threatens the conservation of healthy populations of wildlife in the park or park monument, is contrary to the purposes for which the park or park monument is established, or would be detrimental to the satisfaction of subsistence needs of local residents. (Emphasis added) Upon notification by the Governor, the Secretary shall take no action on a submission of a commission for sixty days during which period he shall consider any proposed changes in the program or recommendations submitted by the commission which the Governor provides him.

As one can see there is a complex arrangement to appoint members to the Subsistence Resource Commissions. However, over the past 40 years it has mostly worked effectively and brought a healthy diversity of individuals to the commissions. One can also see, in section (b), that the

Secretary is strongly influenced to accept recommendations from the Commissions. Thereby, local people do play a significant role in effecting federal government plans and regulations that affect subsistence uses in National Parks and Park Monuments and more directly their own activities in these protected areas.

Cooperative Agreements:

Section 809. *The Secretary may enter into cooperative agreements or otherwise cooperate with other Federal agencies, the State. Native Corporations, other appropriate persons and organizations, and acting through the Secretary of State, other nations to effectuate the purposes and policies of this title.*

Subsistence and Land Use Decisions:

Section 810. *(a) In determining whether to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands under any provision of law authorizing such actions, the head of the Federal agency having primary jurisdiction over such lands or his designee shall evaluate the effect of such use, occupancy, or disposition on subsistence uses and needs, the availability of other lands for the purposes sought to be achieved, and other alternatives which would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes….*

Access:

Section 811. *(a) The Secretary shall ensure that rural residents engaged in subsistence uses shall have reasonable access to subsistence resources on the public lands.*

Research:

Section 812. *The Secretary, in cooperation with the State and other appropriate Federal agencies, shall undertake research on fish and wildlife and subsistence uses on the public lands, seek data from, consult with and make use of, the special knowledge of local residents engaged in subsistence uses; and make the results of such research available to the State, the local and regional councils established by the Secretary or State…*

Periodic Reports:

Section 813. *Within four years after the date of enactment of this Act and within every three-year period thereafter, the Secretary, in consultation with the Secretary of Agriculture, shall prepare and submit a report to the President of the Senate and the Speaker of the House of Representatives on the implementation of this title.*

Regulations:

Section 814. *The Secretary shall prescribe such regulations as are necessary and appropriate to carry out his responsibilities under this title.*

Since 1992, these regulations have been established by the Federal Subsistence Board to carry out the mandates of Title VIII. A supporting federally-funded office was established, it is administratively housed within the U.S. Fish and Wildlife Service and is comprised of a significant number of staff including biologists, anthropologists and public involvement specialists along with a number of specialized administrative staff. The full set of regulations are found in the Code of Federal Regulations (CFR). (See Appendix I)

These regulations are reviewed on a one-or-two-year cycle and many changes have occurred over the years; sometimes within a short period of time. Many reasons drive the dynamics of regulatory changes including; the large size of Alaska, the need to focus on smaller geographic areas of the state (known as Game Management Units (GMUs)), ever-changing wildlife populations, and habitat modifications resulting from rapid climate change in the Arctic and Sub-Arctic. Many species populations fluctuate up and down in numbers within short periods of time and others fluctuate over longer cycles. Some species are significantly affected by a wildfire or a single harsh winter or the ever-increasing mid-winter icing of the landscape. Allowable season dates and harvests are adjusted to diminish potential for over-harvest. Such over-harvest can threaten the viability of the resources and create prolonged periods where resources are not available to subsistence users. The publicly available printed federal regulations book is linked below, the book is in two parts:

GMU 1-11 <https://www.doi.gov/sites/doi.gov/files/wildlife-reg-book-2022-2024-units-1-11.pdf>

GMU 12-26 < https://www.doi.gov/sites/doi.gov/files/wildlife-reg-book-2022-2024-reduced-file-size.pdf>

<u>Limitations, Savings Clauses</u>:

<u>Section 815</u>: This section contains a number of specific technical requirements. A number of these deal with requirements to maintain "healthy" and or "natural and healthy" wildlife populations in specific conservation units. Other parts deal with Secretarial authority and yet others point out that ANILCA does not modify or repeal other federal laws.

<u>Closure to Subsistence Uses</u>:

Section 816. (a) *All national parks and park monuments in Alaska shall be closed to the taking of wildlife except for subsistence uses to the extent specifically permitted by this Act. Subsistence uses and sport fishing shall be authorized in such areas by the Secretary and carried out in accordance with the requirements of this title and other applicable laws of the United States and the State of Alaska.*

This important provision closes all National Park Service (NPS) parks and monuments to sport (recreational) hunting. It thereby only allows hunting under Title VIII of ANILCA in units (See ANILCA Title II), where expressly authorized. The result is that most, but not all NPS units in Alaska, parks, monuments and preserves are open to ANILCA Title VIII hunting but only NPS preserves are open to sport (recreational) hunting.

III.   Conclusions and Universal Best Practices

- The ANILCA law has been in effect for 42 years (since 1980) and it has accomplished its goals and continues to do so. However, it is complex, Alaska specific, and is expensive to operate. At the same time, the lands and resources have been well-protected and rural people continue to use subsistence resources and fully expect to be able to do so into the future. Local people play a significant role in affecting the actual regulations that regulate hunting, trapping, fishing and gathering.

- Title VIII must work within the framework of many U.S. laws simultaneously, such as the other Titles of ANILCA and the NPS Organic Act. The implementation of this program is complicated and is best served by some staff with long-term institutional knowledge to carry out its complex and detailed mandates. Continuity of service by government employees to carry out the program is a valuable asset.

- By examining each section of Title VIII, Georgia may find sections that fit Georgia's needs and or could be adapted to fit the needs of the country's protected areas and Georgian people and their traditions.

- Allowing the taking and use of resources from protected lands requires a careful balance of what human uses are allowed and the overall long-term balance of resource protection. One should always err on the side of conservation. There are many unknowns in resource protection and many consequences of actions and unintended consequences of actions that occur. Continuing management programs better serve the protected areas and their resources. Start and stop (inconsistent) management can be a receipt for many problems and failures to achieve management goals

- If people are allowed to take resources under a workable management scheme, it is predictable that they will feel some ownership of the protected area and may be supportive of the area and its goals since they directly benefit from the area's existence.

- This Alaska example, one where public involvement is mandated by federal law, is a complicated but successful model. The number of people seeking to participate on the Regional Advisory Councils and Subsistence Resource Commissions has outnumbered the number of vacant seats to be filled each year (1/3 of the seven to ten seats are re-appointed annually, terms are three years) in some years. Further, local people have seen the direct impact they have on federal regulations that they must follow to hunt, trap and fish on protected lands. They see, through their own experience, that they have influenced their own way of life and thereby continue to actively engaged in the process.

- Providing a written-down coherent approach to public involvement has many benefits: There is a structure; public involvement is conducted in a consistent manner; the government and the public are aware of the process and expectations are shared; there is an increased likelihood of a satisfactory outcome because of these features.

- Public involvement can be carried out with or without guidance from laws, regulations and agency policies. However, experience shows that without written guidance from at least one of these levels of management, often a coherent approach is not achieved. The result is that the process differs from place to place, from time to time and from issue to issue. Broadly, the opportunities for public involvement seem to differ from park to park with no articulated reason explains why this happens. As a result, the public often become disillusioned and unhappy – sometimes feeling left out of the process – which is the exact opposite of what well intentioned public involvement should strive for.

- In Georgia, regardless of legal mandates for public participation or the absence of such mandates, public outreach should be considered as a useful and desirable management tool for day-to-day management and for the myriad of protected area projects and management issues that arise. Involving the public leads toward long-term interest by the public and to openness by the government, and has the potential to create trust in government management.

- Regionally and community based advisory group membership can be tailored to fit the cultural norms as well as to encourage local elders, women and young people (students) to participate. Members should be re-appointed periodically (every 3 years is recommended) and done so on a rotating basis so some long-term members can continue but at the same time new members can be appointed periodically.

- These groups can occasionally meet at a national scale meeting where people from all over the country come together to listen to and discuss common issues. Ideas are shared and can be taken to home regions/communities for consideration. Sharing and learning can be accelerated in this manner and it has certainly occurred within Alaska. In Alaska, the chair-persons of the Regional Advisory Councils and the Subsistence Resource Commissions have meet together annually to discuss issues and share ideas. These meetings have proven to be very productive.

Appendix I
Subsistence Management Regulations
50 C.F.R. Part 100

This is a list of sections found in the regulations which govern subsistence hunting, trapping and fishing on federal lands in Alaska. Additionally, individual agencies like the National Park Service, the U.S. Fish & Wildlife Service and the Bureau of Land Management also have agency specific regulations for their units which regulate various aspects of subsistence management. Those details are not included in this paper but can be made available upon request.

Project Phase 2.3 – Natural Sounds and Night Skies
Primary Author: Li-Wei Hung

I.   Introduction.

Listening to nature's symphony or seeing the Milky Way stretching overhead may be rare experiences in everyday lives, but they can still be found in many of our national parks and protected areas. Natural sounds and night skies are inspirational to millions of park visitors, fundamental to the historical and cultural context of protected areas, critical for park wildlife, and vital to the protection of wilderness character. This briefing paper provides an overview of the resources and best management practices on natural soundscape, overflights, night skies, outdoor lighting, and visual scenery.

II.   Overview, Discussion, Demonstration Examples.

The night sky is an integral part of a national park for park visitors and wildlife. Historically, celestial objects and astronomical phenomena have significantly influenced numerous cultures around the globe. Today, star parties often attract many visitors, bringing important benefits to local, regional, and national economies. In the National Park Service (NPS), night sky programs are among the most popular interpretive activities at parks, providing unique educational opportunities and an immersive experience connecting visitors to nature. The night sky is a natural, cultural, educational, and economic resource.

A park's acoustic resources are vital for healthy ecosystems and provide a positive visitor's experience. From a babbling brook to a thundering waterfall to the yips of a coyote pack, natural sounds compose immersive experiences important for wildlife, wilderness, visitors, and cultural-historic events. Hearing these sounds brings health benefits for humans, such as lowered stress and improved mood, cognition, and social well-being. Wildlife depends on natural sounds for communication, mating, finding food, avoiding predators, and protecting young.

However, noise and light pollution are some of the most pervasive yet least addressed pollutants in national parks. Anthropogenic noise has a host of negative impacts on both humans and wildlife[1]. Noise can also distract visitors from cultural areas – the tranquility of historic settings and the solemnity of memorials, battlefields, prehistoric ruins, and sacred sites. Similarly, light pollution is so prevalent that more than 99% of the U.S. and European populations live under light-polluted skies[2].

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[1] Shannon, G., McKenna, M. F., Angeloni, L. M., et al. (2016). A synthesis of two decades of research documenting the effects of noise on wildlife. Biological Reviews, 91(4), 982-1005.

[2] Falchi, F., Cinzano, P., Duriscoe, D., et al. 2016. The new world atlas of artificial night sky brightness. Science Advances. 2, e1600377

Both natural sounds and night skies are park resources embodied in the *Organic Act of 1916*, which specifies the NPS shall conserve resources unimpaired for the enjoyment of future generations. National parks are enduring sanctuaries for natural sounds and night skies, where current and future generations can experience undisturbed soundscapes and an unimpeded view of the cosmos, and where the ecological roles and cultural values of natural sound and light conditions are understood and appreciated.

A. National Office Provides Specialized Assistance

There are more than four hundred park units of the national park system. Most parks cannot afford having an acoustic specialist or astronomer on the staff. However, at a regional or national level, having specialized staff is more feasible and therefore, Washington headquarters support offices provide highly specialized technical expertise not otherwise available to the field. The Natural Sounds and Night Skies Division (NSNSD) is a NPS national-level office that provides leadership and technical expertise, training, policy and guidance to park managers and regional offices in the management of natural sounds, night skies, and park overflights system-wide. The Division's five overarching goals are:

- **Achieve organizational excellence** through internal controls, transparency, accountability, professional development, and a commitment to safety, wellness, and life-work balance.
- **Stewardship through scientific and technological leadership** that aligns with the Natural Resources Stewardship and Science Directorate (NRSS) and NPS-wide priorities.
- **Protect park resources through development of policy and guidance,** park planning, and compliance.
- **Mitigate the effects of aviation activities** by working with the Federal Aviation Administration, the aviation industry, the environmental community, tribes, and other stakeholders.
- **Increase public understanding of the importance of natural sounds and night skies** and enhance opportunities for transformative experiences by inspiring curiosity and fostering education.

B. Science-based Stewardship

a. Sky Quality Assessment

The NPS developed the camera system and the observing method to collect high-resolution images of the night skies[3]. The system is composed of a commercial Nikon lens, a V-band filter, and a research-grade, monochromatic charge-coupled device. The filter only lets visible light pass through, allowing the detected signal to closely represent what human eyes can see based on our spectral sensitivity. The camera system captures a composite image of the night sky by creating a mosaic from 45 images of portions of the sky. Each resulting image set will yield a 40-million-pixel image mosaic covering the entire night sky and 7° below the horizon.

b. Case Study: Measuring Changes to Inform Best Management Practice

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[3] Duriscoe, D. M., Luginbuhl, C. B., & Moore, C. A. 2007. Measuring Night-Sky Brightness with a Wide-Field CCD Camera. Publications of the Astronomical Society of the Pacific. 119, 192

The NPS Night Skies Program used a calibrated camera to measure changes in sky brightness resulting from a countywide lighting retrofit project. The county retrofitted all 3,693 county-owned high pressure sodium street lamps to light emitting diode (LED) technology. The images show that the skyglow became brighter and extended higher in the sky[4]. This study implies reductions in skyglow will require lowering overall light level (> 50%), using warmer lights (< 3000 K), or both.[5] This information helps park managers on protecting the natural night skies.

c. Characterizing Baseline Acoustic Environments in Parks

Rigorous and calibrated measurement of the acoustic environments enables the estimation of the park's natural ambient sound level. Typically, this monitoring occurs as a 30-day continuous recording to capture natural variation in weather conditions and park visitation. Once data have been collected, identification of anthropogenic noise events allows calculation of natural ambient sound levels, providing a baseline monitoring condition for the park[6].

d. Monitoring and Measuring Specific Sound

Parks often have management questions that require monitoring or analysis beyond baseline characterization. Such questions can include how often noise levels exceed benchmarks for wildlife and human annoyance. Parks can define measurable objectives for desired condition and use thresholds to take management action. For example, to provide visitors with opportunities to experience natural soundscapes, a good threshold specifies that at least 90% of visitors will experience a 15-minute interval free of human-caused noise. Parks may also have questions about wildlife sounds or about the impact of a management intervention. Once indicator metrics are identified, monitoring can help parks systematically assess whether goals are being met.

e. Noise Modeling Tools to Support Science and Management:

NSNSD created a geospatial model to predict current sound levels for the entire United States[7]. Additionally, NSNSD uses modeling tools to estimate landscape-level impacts based on inputs such as route, vehicle type and numbers, and environmental conditions. Noise models[8] allow decision makers to estimate noise exposure under a variety of conditions, enabling evaluation of the impacts of different scenarios. NSNSD has also developed an Attenuation Calculator tool to estimate noise propagation from common transportation sources at different distances.

f. Estimating Skyglow Using Satellite Data

Satellite images provide a regional perspective of lights that are altering the night sky. At places where ground-based observations are not available, the nighttime satellite data from the Visible

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[4] Hung L.-W., Anderson S. J., Pipkin A., Fristrup K., 2021, Journal of Environmental Management, 292, 112776
[5] See Best Management practices, section F, for more specifications on sustainable outdoor lighting.
[6] NPS Acoustic Monitoring Reports: https://www.nps.gov/subjects/sound/acousticmonitoring_reports.htm
[7] Mennitt, D., Sherrill, K., & Fristrup, K. (2014). A geospatial model of ambient sound pressure levels in the contiguous United States. The Journal of the Acoustical Society of America, 135(5), 2746-2764.
[8] Noise Modeling Simulation https://www.blueridgeresearch.com/noise-models/ and the Integrated Noise Model https://www.faa.gov/about/office_org/headquarters_offices/apl/research/models/inm_model/

Infrared Imaging Radiometer Suite (VIIRS) on Suomi National Polar-orbiting Partnership satellite are particularly useful for estimating the skyglow. The satellite gathers nightly global imagery, including over the country of Georgia. Using the satellite data, a simplified model of all-sky artificial skyglow[9] and the online global Light Pollution Map[10] provide estimated sky brightness over the region of interest.

C. Air Tour Management Plan

Approximately 200,000 air tours are authorized for over 60 companies at 79 parks each year. The *National Parks Air Tour Management Act* requires that operators conducting or intending to conduct commercial air tours over a NPS unit apply to the Federal Aviation Administration (FAA) for authority before engaging in that activity. The Act further requires the FAA in cooperation with the NPS establish an Air Tour Management Plan (ATMP) for each National Park System unit for which applications have been submitted unless that unit is exempt from this requirement. The objective of an ATMP is to develop acceptable and effective measures to mitigate or prevent the significant adverse impacts, if any, of commercial air tours on natural and cultural resources, visitor experiences, and tribal lands. Examples include Mount Rainier National Park ATMP[11] and Olympic National Park ATMP[12].

D. Education and Outreach

a. Soundscape Outreach and Education

NSNSD has created soundscape activities, curriculum, and interpretive programs. Several parks have web pages and media content to help visitors discover sounds as a resource. Additional educational campaigns – such as the "Quiet Zone" visitor awareness experiment at Muir Woods National Monument[13], the "Ride Respectfully" motorcycle initiative, traffic noise displays that show noise levels of passings vehicles[14], world listening day activities, and young sound seekers initiative with the Atlantic center for the arts – have been effective in raising awareness to park visitors. NSNSD also maintains a public-facing repository of scientific publications, multimedia, and additional information to support sound protection in parks[15].

b. Training Park Staff to Promote Astrotourism

NSNSD created the "NPS Night Sky Academy" to provide opportunities for training, career development, and capacity building to park staff in night skies related programming. This three-day training course provides hands on training in operating telescopes and interpreting the night sky, developing astronomy-based park programming, citizen science projects, and a primer on

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[9] Duriscoe, D., Anderson, S., Luginbuhl, C., & Baugh, K. 2018. A simplified model of all-sky artificial sky glow derived from VIIRS Day/Night band data. Journal of Quantitative Spectroscopy and Radiative Transfer. 214, 133

[10] https://www.lightpollutionmap.info/

[11] https://parkplanning.nps.gov/document.cfm?parkID=323&projectID=102920&documentID=122176

[12] https://parkplanning.nps.gov/document.cfm?parkID=329&projectID=103431&documentID=122174

[13] Stack, D., Peter, N., Manning, R., & Fristrup, K. (2011). Reducing visitor noise levels at Muir Woods National Monument using experimental management. The Journal of the Acoustical Society of America, 129(3), 1375-1380.

[14] https://www.nps.gov/subjects/sound/improvingsoundscapes.htm

[15] https://www.nps.gov/subjects/sound/references.htm

sustainable park friendly outdoor lighting. This course takes place twice a year. The class capacity is 20 students, and the course is open to all staff interested in night skies.

c. Junior Ranger Programs

The NPS Junior Ranger program is an activity-based program conducted in almost all parks, and some Junior Ranger programs are national. Interested youth complete a series of activities during a park visit, share their answers with a park ranger, and receive an official Junior Ranger patch and Junior Ranger certificate. Junior Rangers are typically between the ages of 5 to 13, although people of all ages can participate. We develop junior ranger programs for both natural sounds[16] and night skies[17].

E. Collaborating with Industry and Nonprofit Groups

NSNSD works to optimize organizational effectiveness by leveraging resources and increasing capacity through collaboration and partnerships.

a. National Lighting Standards

NSNSD is working with Illuminating Engineering Society (IES) to create industry-standard outdoor lighting guidelines suitable for park settings. IES is an industry-backed, not-for-profit society with members composed of engineers, lighting designers, consultants, lighting equipment manufacturers, sales professionals, electrical contractors, architects, researchers and academics. Developing this park-based standard will have a huge positive impact because IES lighting standards are widely practiced by lighting designers across the entire United States.

b. International Dark Sky Association

The International Dark-Sky Association (IDA) is a United States-based non-profit organization. The mission of the IDA is "to preserve and protect the nighttime environment and our heritage of dark skies through quality outdoor lighting." NPS works closely with IDA to protect the night skies for present and future generations. Specifically, NSNSD supports parks to get their IDA dark sky certifications by monitoring sky brightness, conducting lighting inventory, developing lighting management plan, and providing public night skies outreach and education programs.

F. Best Management Practices

a. Noise Mitigation Guidance

Many park activities create noise (e.g., landscaping, maintenance, transportation, construction). Best Available Technologies provide the opportunity to use quieter, more efficient technology (e.g., picking quiet options for fleet vehicles). The Acoustical Toolbox: Recommendations for Reducing Noise Impacts in National Parks[18] offers options for landscaping equipment, heavy

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[16] https://www.nps.gov/subjects/sound/juniorrangersound.htm
[17] https://www.nps.gov/subjects/nightskies/juniorrangernight.htm
[18] https://www.nps.gov/subjects/sound/upload/AcousticalToolbox-508-2.pdf

machinery, and construction equipment. Another resource offering practical suggestions for reducing noise is Protecting National Park Soundscapes[19].

>   *b.   Sustainable Outdoor Lighting in National Parks*

- No Light – consider no-light at all or using reflective tape or surfaces instead.
- Warm Colors – 2700 - 3000 Kelvin for LEDs.
- Recessed and Fully Shielded – use "full cut off" to ensure downwards light only.
- No Upward Lights – Avoid lights that pointed upwards or directed laterally.
- Use Timers, Motion Detectors, and Dimmers – consider these adaptive technologies.
- Lowest Brightness – Choose lights with lowest lumens possible to complete the task.

III.   Conclusions on Universal Best Practices.

- Ensure parks have specialized assistance in managing natural sounds and night skies.
- Use science-based stewardship to make informed decisions and best management practices.
- Train park staff to conduct natural sounds and night skies education and outreach to visitors.
- Develop air tour management plans to mitigate or prevent the adverse impacts on natural and cultural resources, visitor experiences, and tribal lands.
- Purchase equipment with the best available technology, perform regular maintenance, and limit noise-generating time to mitigate the impact of noise.
- Follow the sustainable outdoor lighting principles.

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[19] https://nap.nationalacademies.org/read/18336/chapter/2

Project Phase 2.3 – Invasive Species
Primary Author: Casey Burns

I.   Introduction.

Invasive species are non-native organisms whose introduction to a particular ecosystem causes or is likely to cause economic or environmental harm, or harm to human, animal, or plant health. They are a significant threat to the ecological, economic, and cultural integrity of America's lands and waters and the communities they support.

Controlling them can be complex, expensive, and often continues indefinitely. In some cases, invasive species cause harm which is potentially irreversible. While the scale of the problem is daunting, opportunities exist to take a more coordinated and effective approach to managing invasive species. Strategic solutions advanced in collaboration with partners can often successfully resolve or forestall invasive species impacts.

Not all non-native species are invasive. Many non-native species have been intentionally introduced for beneficial uses such as food production or landscape restoration. Most species are benign in their native range, yet when introduced into a different ecosystem, some may become problematic when habitat and biological interactions, such as competition, predation, and disease, are no longer present to regulate their populations. In some cases, a non-native species may be viewed as beneficial by one sector of society yet considered invasive by another sector in the same geography.

A. Responsibility

The following excerpts from U.S. Presidential Executive Order 13112, Invasive Species, provide direction to federal agencies in the United States:

> (a) Each Federal agency whose actions may affect the status of invasive species shall, to the extent practicable and permitted by law, (1) identify such actions; (2) subject to the availability of appropriations, and within Administration budgetary limits, use relevant programs and authorities to: (i) prevent the introduction of invasive species; (ii) detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner; (iii) monitor invasive species populations accurately and reliably; (iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded; (v) conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species; and (vi) promote public education on invasive species and the means to address them; and (3) not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions.

(b) Federal agencies shall pursue the duties set forth in this section in consultation with the Invasive Species Council, consistent with the Invasive Species Management Plan and in cooperation with stakeholders, as appropriate, and, as approved by the Department of State, when Federal agencies are working with international organizations and foreign nations.

The Invasive Species Council shall provide national leadership regarding invasive species, and shall oversee the implementation of this order and see that the Federal agency activities concerning invasive species are coordinated, complementary, cost-efficient, and effective, relying to the extent feasible and appropriate on existing organizations addressing invasive species.

II.   Overview, Discussion, Demonstration Examples.

The US Department of the Interior[1] has established five goals to advance invasive species management:

1. Collaborate internally and externally to optimize operations through leveraging partnerships, joint educational efforts, and shared funding.
2. Cost-effectively prevent the introduction and spread of invasive species into and within the United States.
3. Implement early detection and rapid response efforts in coordination with other Federal agencies, States, Tribes, Territories, and other partners to reduce potential damage and costs from new infestations becoming established.
4. Cost-effectively control or eradicate established invasive species populations to reduce impacts and help restore ecosystems.
5. Improve invasive species data management for decision-making at all levels of government.

The following are steps to plan and implement invasive species actions:

A. Identify and Prioritize Species
The first step in species prioritization is to compile a list of non-native species known to occur within the spatial scope as well as species with the potential to occur in the future. Ideally, a list of current and potential species is compiled from available sources and scientific names are standardized to your preferred taxonomic standard (such as the International Taxonomic Information System). Once compiled, the lists can then be prioritized using one or more criteria.

Many larger landscape organizations such as the U.S. Department of Agriculture (USDA) and state invasive councils have assessed invasiveness or noxiousness of non-native plant species to wildlands across large landscapes of the United States. These assessments are based on risk assessment criteria such as the NatureServe Invasive Species Assessment Protocol, and they often rely on scientific literature and expert knowledge to provide a comprehensive review of species ecology, biology, distribution, and impacts on the environment. While these larger landscape lists can be a useful tool in identifying management priorities, they may not provide enough information to identify local scale priorities when used alone. For example, when many of the species on a local land manager's list are found on one of these larger landscape lists, management priorities may be less apparent. In such cases, it may be useful to apply additional criteria or use a tool to help identify site-specific priorities. A more structured approach can help teams come to consensus on which species should be a focus of management as well as provide a legacy of information about how decisions were made.

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[1] U.S. Department of the Interior (DOI). 2021. U.S. Department of the Interior Invasive Species Strategic Plan, Fiscal Years 2021-2025. Washington, D.C., 54p.

B. Identify and Prioritize Management Areas

A first step in prioritizing areas for management is to define the areas of your spatial scope that are under management consideration. Over the long term, the intent may be to manage invasive species across all areas within the spatial scope, but when resources are limited, area priorities help inform where to use those resources. Areas should have clear boundaries defined by one or a combination of features such as jurisdictional management boundaries, ecosystem types, vegetation communities, sensitive species populations/habitat, watersheds/hydrology, soils, or topography. Several criteria can be used to help decide which areas within the spatial scope are a priority for managing invasive species. These include the current level of infestation, risk of invasion, and importance to high value conservation resources.

Category	Criteria
Larger Landscape Invasiveness	The degree to which a species is likely to cause harm to wildlands or overall biodiversity. Invasiveness rankings have been developed for larger landscapes and are based on expert opinion and comprehensive review of the scientific literature (see table 5).
Status and Habitat Suitability	Characteristics of the species within the Plan's spatial scope. Includes criteria such as presence or proximity, abundance, distribution, and habitat availability/potential to spread.
Ecological Impacts	The severity of current or potential impacts the plant causes (or could cause) on conservation targets within the Plan's spatial scope.
Difficulty of Control	The difficulty of managing the species within the Plan's spatial scope. Includes criteria such as cost, time, and technical difficulty.
Larger Landscape Importance	The degree to which the species is a priority for management on adjacent lands or in the larger landscape.
Other	The degree to which a species is important for management because of political, public, cultural, or other reasons (defined by the user).

Figure 1. Criteria commonly used to prioritize species for invasive species management (from USFWS and Cal-IPC 2018. Land Manager's Guide to Developing an Invasive Plant Management[2]).

C. Inventories

An inventory is a type of survey that is used to determine the location or condition of a resource at a specific time. Inventories provide a snapshot of the distribution and abundance of invasive species across a landscape and are critical for understanding the invasion problem, patterns of spread, and impacts (economic and ecological) and ultimately building a strategic and adaptive plan. When resources are limited, consider inventorying the highest priority areas first and phasing inventory of lower priority areas over time.

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[2] U.S. Fish and Wildlife Service (USFWS) and California Invasive Plant Council (Cal-IPC). 2018. Land Manager's Guide to Developing an Invasive Plant Management Plan. Cal-IPC Publication 2018-01.
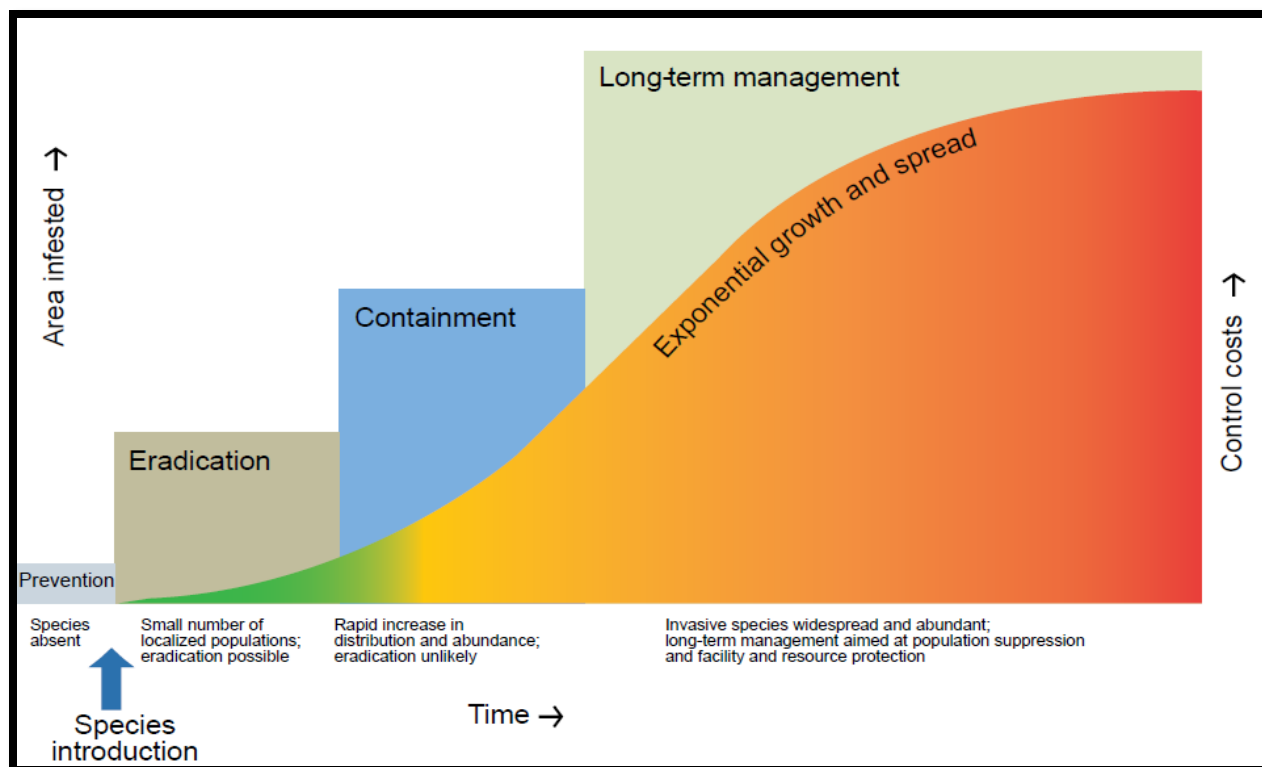
Figure 2. Phases of the Invasion Curve (DOI 2021, adapted from Rodgers. 2010[3]).

D. Early Detection

Early detection monitoring consists of systematic and repeated surveys of areas deemed high-risk for becoming infested with new invaders and is typically focused along likely routes of invasion and in areas believed to be un-infested ("clean" areas). Early detection surveys are focused on detecting the location of invasive species that are not yet established within a defined area, but the potential for establishment exists. Early detection and rapid response (EDRR) is critical for documenting new and highly invasive species for eradication before they become established, widespread, and abundant and cause both economic and ecological harm.

E. Develop Invasive Species Management Strategies

An invasive species management strategy is a collection of activities or projects aimed at preventing, eradicating, containing, and/or suppressing (asset-based protection) targeted invasive species. Deciding which activities to employ and where can be a complex process because there are many factors to consider, such as species abundance and ecology; site characteristics such as scale, sensitive resources, and accessibility; capacity to implement (people, funding, and technical expertise); and socio-political issues. If you have completed the initial planning steps—gathering site specific information, prioritizing, assessing status, and developing specific, measurable, achievable, results-oriented, and time-fixed (SMART) objectives—you are well-positioned to design an effective and achievable strategy.

F. The Four Basic Approaches to Invasive Species Management

    1. Prevention
       Preventing the introduction of invasive species is the first line of defense against invasive
       species. Together, prevention with EDRR is the most cost-efficient way of reducing the

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[3] Rodgers. 2010. Invasive Plants and Animals Policy Framework. State of Victoria, Department of Primary Industries.

economic and ecological costs of invasive species. Once established, invasive species can be extremely difficult and costly to remove. Even after successful removal, damage to food web dynamics, nutrient flow mechanisms, and other intricacies of the original ecosystem may persist.

Invasive species are introduced (and spread) by vectors. A vector is the conveyance that moves a non-native propagule to its novel location. Invasive species can be transported by natural means such as wildlife, wind, and water. Transport also occurs by anthropogenic means; human activities that can inadvertently lead to invasive species introductions include:

- Importation of contaminated materials such as plants, mulch, wood, soil, gravel, or animal feed.
- Recreational activities such as hiking, biking, boating, and camping.
- Land management activities (carried out by staff, volunteers, partners, and contractors) that involve movement of people, vehicles, or tools. Examples include inventory and monitoring, routine maintenance activities (such as mowing), restoration activities, fire management activities, and invasive species management activities.
- Other human activities that lead to disturbance or disruption of ecological processes, thereby creating novel situations and opportunities for invasion.

2. Eradication
Eradication is the complete removal of an invasive species (including reproductive propagules) from a defined area. Eradication is most feasible when an infestation is small. To understand how the size of an infestation affects whether eradication is an achievable objective, Rejmanek and Pitcairn (2002) analyzed decades of eradication efforts by the California Department of Food and Agriculture and found that eradication of infestations smaller than 1 hectare (2.5 acres) was usually successful, while only a third of infestations between 1 and 100 hectares (2.5 and 250 acres) and a quarter of all infestations between 101 and 1,000 hectares (250 and 2,500 acres) were eradicated. Costs associated with eradication increase dramatically with size of infestation.

3. Containment / Control
Containment is defined as any action taken to prevent establishment or to control an invasive species beyond a predefined area known as the containment unit. Control is defined as the act of reducing the occurrence or abundance of invasive species using one or more Integrated Pest Management (IPM) chemical, biological, cultural, or mechanical removal techniques.

4. Asset-Based Protection
Asset-based protection means limiting invasive species control activities to portions of an infestation that directly threaten high-value conservation targets (such as areas supporting a high-valued species, community, ecosystem, or culturally significant asset). Asset-based protection is commonly practiced when an invasive species is widespread and abundant and there is little hope of eradication. As with eradication and containment, a variety of techniques can be used to control invasive species.

Technique	Advantages	Disadvantages
Manual: physical removal of invasive plants using non-mechanical tools such as hands, shovels, picks, axes, hand-saws, or machetes	Little training is needed for safe use of many tools, and they can be used in a variety of situations; hand tools are relatively low cost and can provide very specific and targeted control. Ideal for smaller infestations.	May be time- and labor-intensive for moderate to large infestations. Some manual tools may be dangerous to use. Potential non-target effects: inadvertent disturbance to or removal of non-target species.
Mechanical: physical removal of invasive plants using mechanized tools such as mowers, brush-cutters, chainsaws, or earth-moving equipment	Many tools/equipment can be used in a variety of situations and have low implementation costs. Can provide very specific and targeted control. Ideal for small infestations.	May be time- and labor-intensive for moderate to large infestations. May require qualified individuals or training to operate some mechanized tools or equipment. Potential non-target effects: inadvertent disturbance to or removal of non-target species.
Cultural: land management practices such as grazing, prescribed fire, or irrigation/flooding	Control of moderate to large infestations may be possible. Can be low effort and cost per unit acre relative to other techniques. In some cases, may lead to positive response by native plants.	In some cases, may lead to an increase in invasive plants if not used appropriately. Often will not completely eliminate the target species from an area. Potential non-target effects: inadvertently disturbs or removes non-target species and promotes invasive plant spread.
Biological: introduction of novel predators, parasites, and pathogens such as insects, fungi, or microbes, to attack an invasive plant species	Relatively low cost per unit acre. May keep invasive plants at a low level across large landscapes. Long-term effectiveness is limited; must repeatedly treat invasive plant infestations once biocontrol agents are established.	May be expensive to develop. Often does not lead to eradication of the target invasive species. High risk of unintended consequences to native species and communities.
Chemical: application of herbicides to kill invasive plants	May be a cost-effective approach for larger infestations and lead to effective control when used appropriately. Often a variety of application mechanisms available (ground and aerial).	High risk of unintended consequences to native species and communities. Unintended consequences may include contamination of soil or water, harm to or removal of non-target species, human exposure, and health issues for applicators. May be expensive to obtain and/or apply chemicals. Often more regulatory requirements to apply. May be controversial in some areas.
Restoration of ecosystem processes or composition	Works to bring the project site to a desired and/or native state that is more resistant to invasion over the long term.	High cost. There may be a time lag to realized benefits. May not lead to elimination of the target invasive species.

Figure 3. Summary of invasive plant control techniques (from USFWS and Cal-IPC 2018).

III.   Conclusions on Universal Best Practices for Invasive Species.

After careful review of relevant literature regarding invasive species, and based on experience evaluating the efficacy of landscapes for conservation, the following practices are recommended:

A. **Promote and Engage in Collaborative Conservation:** Coordinate and cooperate across agencies; advisory groups, and other interagency bodies; local governments; and other entities such as academic institutions, the private sector, landowners, hunters and anglers, ranchers and farmers, local invasive species cooperatives, non-governmental organizations, and others.

Leverage staff and funding across these groups to manage invasive species effectively and efficiently.

B. Use Science: Use relevant and reliable science, including peer-reviewed and traditional knowledge, without bias, to inform and influence understanding of invasive species, their impacts, and how to manage them.

C. Manage on a Watershed or Ecosystem Scale: Use a systems approach that emphasizes the importance of maintaining ecological processes to restore or recover ecological communities previously invaded or to maintain the resistance and resilience of relatively intact ecological communities, while balancing economic, cultural, and environmental priorities.

D. Promote Innovative Solutions: Encourage innovative science and technologies to create new options to address difficult challenges where few or no viable or effective options currently exist.

E. Apply Integrated Pest Management: Apply integrated pest management principles in a manner that balances risks to human health and the environment from invasive species management activities with the risks of failure to act expeditiously to control invasive species. The term *integrated* means to apply a combination of management techniques that work better together than separately. Using an integrated management approach increases the likelihood of success and reduces the likelihood that a pest will become immune (i.e., develop resistance) to a management technique, particularly in the case of herbicides. While the concept and policies surrounding IPM have evolved over time and vary across organizations and agencies, contemporary descriptions have common elements such as:

a) Know your resource; include site descriptions with ecosystems and landcover, infrastructure, conservation goals, etc.
b) Know your pest; identify priority pest species and understand their ecology and harm (or potential harm).
c) Assess the status of pest populations.
d) Prevent pest problems.
e) Use a combination of techniques to control pest populations
f) Develop guidelines or thresholds for management action.
g) Describe your expected management outcomes or results (objectives).
h) Build consensus and regularly communicate with those who may be affected by your invasive species management program or who can contribute expertise.
i) Monitor management outcomes, learn, adapt management, and share results.

F. Prioritize Cost-effectiveness: Apply a deliberate decision-making process to evaluate the full range of methods and tools available to achieve resource management objectives in a particular geography and select the one that achieves those objectives with the least expenditure of funds.

G. Streamline Regulatory and Decision-making Processes: Ensure appropriate management actions are taken that are commensurate with the potential to avoid harm, while maintaining appropriate and necessary consultations with stakeholders.

H. Demonstrate Accountability: Develop and use SMART performance metrics to evaluate invasive species management activities. Aim for substantive annual net reduction of invasive species populations or infested acreage. Report annually on performance results and share with Federal and non-Federal partners, other interested parties, and the public.

I. **Adaptively Manage:** Use adaptive management, as appropriate, to improve invasive species management and policies. Use management outcomes, monitoring, evaluation, risk assessment, research, and innovation to inform adjustments to the strategies implemented.

J. **Avoid Unintended Impacts of Invasive Species Management:** Although the purpose of invasive species management is to prevent and reduce harm to important natural and/or cultural resources, unintended negative consequences (non-target effects) can result such as soil erosion, loss of native species or species habitat, reinvasion, secondary invasions, or further spread of invasive species.

Unintended consequence	Description
Soil disturbance, compaction, or erosion	Equipment use results in soil disturbance or compaction. Removal of plants and creation of bare ground can lead to erosion.
Water quality impacts	Chemicals or other introduced materials (such as sediment) can impair water quality.
Harm to non-target plants	People, equipment, or materials result in impairment or mortality of native plants.
Direct harm to wildlife	People, equipment, or materials result in wildlife displacement, impairment, or mortality.
Indirect harm to wildlife	People, equipment, or materials result in alteration of wildlife habitat.
Direct or indirect harm to cultural resources	People, equipment, or materials result in cultural resource damage or loss.
Further spread of invasive plants	People and/or equipment become vectors of invasive plant spread.
Create conditions for reinvasion	Activity results in soil disturbance or creation of open areas that are re-infested.
Human safety risk	Activity poses a risk to human safety.

Figure 4. Descriptions of unintended consequences (from USFWS and Cal-IPC 2018).

IV. Definitions.

Terminology concerning invasive species has many similar terms, and terms with overlapping meanings. For efficient communication, standardized terminology is recommended. The following are definitions from EO 13112 and USFWS and Cal-IPC 2018 of common terms in the United States, although variability in exact meaning still occurs.

Alien: with respect to a particular ecosystem, an organism—including its seeds, eggs, spores, or other biological material capable of propagating that species—that occurs outside of its natural range (Executive Order 13751). Synonymous with non-native, non-indigenous and exotic.

Control: as appropriate, eradicating, suppressing, reducing, or managing invasive species populations, preventing spread of invasive species from areas where they are present, and taking steps such as restoration of native species and habitats to reduce the effects of invasive species and to prevent further invasions.

Eradicate: to completely eliminate an invasive species from a specific geographic area where they are present.

Exotic: with respect to a particular ecosystem, an organism—including its seeds, eggs, spores, or other biological material capable of propagating that species—that occurs outside of its natural range. Synonymous with alien, non-native, and non-indigenous.

Introduction: the intentional or unintentional escape, release, dissemination, or placement of a species into an ecosystem as a result of human activity.

Native species: with respect to a particular ecosystem, a species that, other than as a result of an introduction, historically occurred or currently occurs in that ecosystem.

Non-Native: a species that is not indigenous to a specific geographic area, and may or may not pose an ecological or economic risk.

Noxious weed: any plant or plant product that can directly or indirectly injure or cause damage to crops (including nursery stock or plant products), livestock, poultry, or other interests of agriculture, irrigation, navigation, the natural resources of the United States, the public health, or the environment (Public Law 106-224).

Pest: organisms that damage or interfere with desirable plants in our fields and orchards, landscapes, or wildlands, or that damage homes or other structures. Pests also include organisms that impact human or animal health.

Weed: a plant that causes economic losses or ecological damage, creates health problems for humans or animals, or is undesirable where it is growing.

Integrated pest management (IPM): a science-based decision-making process that incorporates management goals, consensus building, pest biology, monitoring, environmental factors, and selection of the best available technology to achieve desired outcomes while minimizing effects to non-target species and the environment and preventing unacceptable levels of pest damage.

Inventory: refers to a catalogue of invasive species that includes information on their location, abundance, and distribution in a defined location.

Invasive species: an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.

V.   US Laws, Executive Orders, Regulations, and Policies.

Executive Order 11987 Exotic Organisms (1977)
Executive Order 13112 Invasive Species (1999)
Executive Order 13751 (2016)
DOI Invasive Species Strategic Plan 2021-2025
BLM Integrated Pest Management Policy (MS 9011, MS 9015, HB 9011-1)
THE NATIONAL STRATEGY for invasive species for National Wildlife Refuges

Above are the primary guiding documents. For a full list, see the DOI Invasive Species Strategic Plan beginning on page 39

Author's Note: the text in this briefing borrows heavily from EO 13112 and Land Manager's Guide to Developing an Invasive Plant Management Plan.

DEPARTMENT OF THE INTERIOR – INTERNATIONAL TECHNICAL ASSISTANCE PROGRAM
GEORGIA PROTECTED AREAS POLICY REVIEW
CULTURAL RESOURCES
FEBRUARY 2023

Project Phase 2.3 – Briefing Paper, Historic Sites and Districts
Lead Author: Nicole Lohman

I.   Introduction

The Cultural Resources Subgroup identified the management of Historic sites and districts as one of the themes for analysis and research. Cultural resource law in the United States applies in the same fashion to Historic sites and districts (historic resources) as it does to archaeological sites. (For a general overview of the legal frameworks for managing cultural resources, please refer to the briefing paper on archaeological resources.) As such, this briefing paper focuses on the processes for managing historic buildings and structures, means for documenting historic architecture, and how a historic or archaeological district is established.

In the United States, buildings, sites, structures, and objects older than 50 years[1] are considered historic resources that must be evaluated and considered under the requirements of the National Historic Preservation Act (NHPA) for any federal undertakings. As stated above, the United States does not apply different considerations for historic resources, and districts can be nominated to the National Register of Historic Places for groupings of both archaeological and historic period buildings, structures, sites, or objects. Historic resources without structures are managed no differently than archaeological sites. Historic, and even prehistoric structures, due to their nature, require specialized treatments to ensure the preservation of their structural integrity and their unique features.

The following sections describe the process used in the United States for establishing an archaeological or historic district under federal law, how that process has influenced the creation of historic districts at the state and local levels, and the implications of creating a district. A discussion of the Historic Architectural Buildings Survey and Historic Architectural Engineering Survey programs are also provided for context on methods for creating records of historic period buildings and structures. From this context and consideration of historic preservation programs, a series of Universal Best Practices is proposed as a framework for developing or improving an existing program. Links to additional useful resources are include in the appendix.

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[1] The 50 year mark comes not from the National Historic Preservation Act or its regulations, but rather originated with guidance issued for the National Historic Landmarks program and is codified in guidance for evaluating properties for nomination to the National Register of Historic Places in the National Register Bulletin 15, under the discussion of Criteria Considerations (Sprinkle 2007, National Park Service 1997).

II.   Overview

A. National Register Districts

The United States' seminal cultural resource law, the National Historic Preservation Act (NHPA) established the National Register of Historic Places. While historic properties, as defined in the Act, need only be eligible for listing on the National Register to receive consideration during Federal project planning, any member of the public may prepare documentation to formally add a building, site, district, structure or object. This results in a bottom-up approach rather than top-down designations common in other countries. This also allows property owners to object to listings prepared by third parties for properties they own.

The NHPA defines a "Historic Conservation District" as an area that contains either a historic property, buildings with similar or related architectural characteristics, cultural cohesiveness or any combination of those features.[2] Buildings, structures, and districts are further defined in National Register Bulletin 15 which defines Districts as possessing "a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development" (NPS, 1997). One of the most important features that defines a district is that it derives its importance for being a collection of buildings, sites, structures or objects[3] united though a shared history of aesthetic by plan or development (NPS, 1997). Districts can be composed of a variety of resources which either convey a visual sense of a historic environment or are related though a shared history or function but must still be considered significant under one of the four listing criteria defined in the NHPA. For historic districts, most are listed as eligible under Criterion C, for representing the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or possess high artistic values (Tomlan 2015: 102).

In order to designate a historic district at the federal level, the area proposed for listing must be a definable geographic area that can be easily distinguished from the surrounding area by changes in either density, scale, type, age, style or documented differences in historical use. The geographic area may contain a combination of properties considered "contributing" and those that are "non-contributing." Contributing properties are those that add to and convey features that contribute to the significance of the district, while non-contributing properties are those that do not possess those characteristics but occur within the district boundaries.

It is important to point out that formally listing an area as a Historic District on the National Register of Historic Places affords no additional protections to the area. Apart from being able to advertise an area as a historic district, the United States federal government does provide a 20% tax credit to owners of commercial buildings listed on the National Register either individually or as part of a historic district[4]. Property owners must comply with the Secretary of the Interior's

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[2] As defined in 54 USC §300305
[3] Districts can also include planned landscape features. As districts are defined geographic regions, not all elements within the defined area need to be historic or "significant," so long as a defined area is still able to convey a historic setting or feeling.
[4] https://www.nps.gov/orgs/1739/upload/brochure-tax-incentives-2012.pdf

Standards for Rehabilitation[5] (NPS 2023) in order to receive the tax credit. These tax credits are provided as an incentive to encourage adaptive reuse of historic buildings.

B. Historic Architectural Buildings Survey and Historic Architectural Engineering Record

The Historic American Buildings Survey (HABS) began in 1934 as a way for the United States to document historic architectural resources that were being lost due to neglect or development. The purpose of the program is to create and maintain a public archive of measured drawings, historical reports, and large format black-and-white photographs of important or representative examples of the built environment (NPS, ca. 2010a). Though this program national standards for recording historic architecture were developed, known as the *Secretary of the Interior's Standards and Guidelines for Architectural and Engineering Documentation.* The Historic American Engineering Record (HAER) established in 1969 serves as a companion program dedicated to the documentation of structures such as bridges, machinery, boats, and constructed earthworks (NPS, ca. 2010b).

As part of the recording process under these programs, detailed drawings of plans, elevations, and other character defining elements are produced from hand-measurements which may be supplemented by three-dimensional laser scans. Hand drawings are digitized in Computer Aided Drafting (CAD) software. Documentation also involves research of primary resources to compile a report outlining the historic and architectural context of the structure. Large format black and white photographs serve to record texture, detail, and spatial relationships[6] (NPS, ca. 2010a).
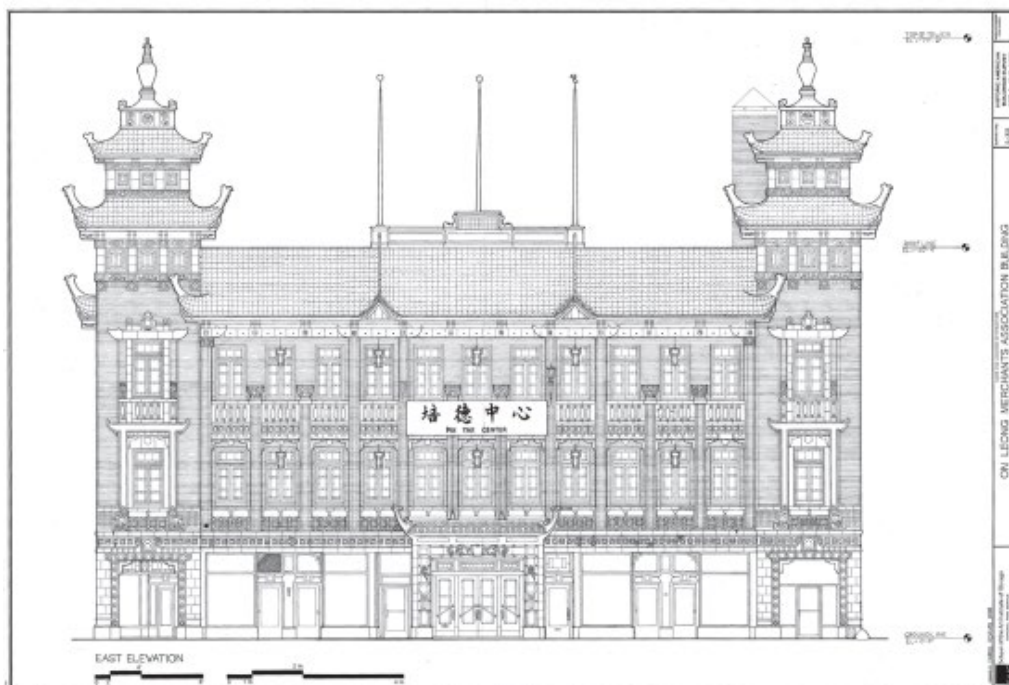
Figure 1. Example of a HABs elevation drawing, from HABs Historic American Buildings Survey Brochure (NPS, ca 2010a).

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[5] Additional information about the Standards for Rehabilitation and links to associated guidelines are available at: https://www.nps.gov/subjects/taxincentives/secretarys-standards-rehabilitation.htm
[6] See also *Historic American Buildings Survey Guide to Field Documentation*. Link provided in Appendix.

C. Preservation Briefs

The National Park Service publishes and maintains a series of documents providing guidance on preserving, rehabilitating, and restoring historic buildings. The information contained in these documents is intended to help owners recognize and resolve common problems before beginning any work (NPS, 2022). These briefs provide information on issues ranging from repairing historic mortar, to repairing historic windows, to preserving ceramic tile floors. In addition to the Preservation Briefs, the Department of the Interior has set forth *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings*. These guidelines provide additional information to owners about considerations prior to beginning any work on a building.

D. Local Level Designations

Separate from Federal Designations, states or municipalities may also designate Historic Districts. At the local level, particularly within individual cities, local listings can come with a number of restrictions on what a property owner can do with the building. Changes may require pre-approval by a Historic Commission or Preservation Board. These boards may also develop guidelines for what constitutes an appropriate exterior change, such as a list of acceptable paint colors. In addition, the demolition of historic structures may be delayed or prevented though decisions of a Historic Commission or board. Cities in the United States such as the City of Philadelphia, New Orleans, and Charleston have these commissions in place.

State programs may also offer additional tax incentives above and beyond those offered by the federal government. For example, the State of Utah offers up to a 20% tax credit for owners of historic homes who intend to use the property as a home or a rental moving forward. The State Historic Preservation Office manages the review and approval of these tax credits.

III. Demonstration

A. Juneau, Alaska

Juneau, the capital of Alaska, started as a mining town in the 1880s. While the city serves an important role in the government of the state, a major economic force in the city is heritage tourism. Therefore, the preservation and upkeep of historic structures is of great importance to the city. Juneau set up local historic districts governed by design guidelines, a design review board, and included consideration of how to improve the economy through these processes. All properties within the districts must comply with the design standards, and even very small and minor exterior improvements must be reviewed. These requirements are also codified within the city municipal code (MUNI, 2013).

B. San Antonio, Texas

The City of San Antonio takes a similar approach to Juneau but also expands on the historic tourism aspect. The city houses an Office of Historic Preservation with one historic preservation

officer and ten planners. This team prepared a Strategic Historic Preservation Plan to guide preservation efforts in the city in the long term. As part of the plan the city focuses heavily on education and outreach efforts. This includes a plaque program to identify historic buildings and why they are significant, a television show highlighting historic buildings, a public awareness campaign, and tourism efforts such as smartphone walking tours (MUNI, 2013).

IV. Discussion

Historic Districts and their administration occur at several levels in the United States. Historic Districts may be created at the national level through nomination of an area to the National Register of Historic Places. Technical guidance and tax credits for commercial use are available at the national level, but owners with listed properties are not obligated to maintain their buildings' historic nature, apart from wanting to retain the historic designation.

Individual states may also have their own registers for Historic Districts which may or may not come with additional tax incentives or guidance. Local municipalities may also designate their own historic districts. These cities and towns may create and enforce ordinances based on a building being listed on any one of these historic registers.

Maintaining historic districts not only retains the look and feel of an area, but also serves as an economic boon in promoting tourism. Businesses are also incentivized to reuse older buildings, which not only saves construction costs, but also provides climate benefits.

V. Conclusions on Universal Best Practices

This section discusses best practices related to the management of historic sites and districts that have been successful in the United States. These best practices distill the features of the National, State, and Local historic preservation programs.

A. Establish a Registry

The underlying feature of all these systems is the establishment of a Historic District. A system must be developed that sets requirements for what constitutes a historic district. Communities, neighborhoods, and geographic areas must meet these requirements in order to receive special designation. These registers must also list what changes would result in a Historic District losing the special designation.

B. Develop Guidelines

A successful system should also include the establishment and dissemination of guidance to building owners on how to repair and maintain the historic aspects of their buildings. This guidance educates building owners about what techniques are appropriate and how to employ those techniques to maintain those characteristics.

C. Provide Incentives

Each of these programs involves some form of incentive to encourage building owners to maintain the historic characteristics of the building. These typically take place in the form of tax breaks, which require owners to not substantially change the character of the building in order to qualify.

D. Consider Ordinances

The strongest protective measures involve the development and enforcement of laws or ordinances which require building owners to comply with a set of requirements related to changing the exterior of their buildings. These ordinances frequently require any construction to be reviewed by a historic preservation board who considers if the changes will affect the historic character of an area. These boards also provide additional guidance about how to appropriately restore and repair historic buildings.

VI. Summary

In terms of universal best practices for establishing effective management of historic districts, it is important to first establish a framework and requirements for what characteristics a historic district must possess. It is also important to determine what level of government will hold the most power over the enforcement of these designations, or if any enforcement will occur. Regardless of how and if laws will be established, programs at every level of government should provide guidance and technical support to owners on how to care for an maintain for buildings possessing characteristics which contribute to the historic district designation. Historic preservation review boards may also be set up to not only provide guidance but to also conduct reviews of proposed changes to ensure changes are appropriate.

By designating and maintaining historic districts, unique features of a city, state, or even a nation are recognized. Enforcement of regulations allows for changes to be made but ensures that the historic heritage of an area is maintained. The preservation of historic heritage not only grounds an area in its past, but also provides economic opportunities by way of tourism and investment.

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Appendix -   Sources of Useful Information Available on the Internet

National Historic Preservation Act
https://www.achp.gov/sites/default/files/2018-06/nhpa.pdf

National Historic Preservation Act Overview
https://www.nps.gov/archeology/tools/laws/NHPA.htm

National Park Service Preservation Briefs
https://www.nps.gov/orgs/1739/preservation-briefs.htm#:~:text=Preservation%20Briefs%20provide%20information%20on,common%20problems%20prior%20to%20work.

Heritage Documentation Programs Sample Projects
https://www.nps.gov/hdp/samples/index.htm

Historic American Buildings Survey Guide to Field Documentation
https://www.nps.gov/hdp/standards/HABSGuideFieldDoc.pdf

Guidelines for Architectural and Engineering Documentation
https://www.federalregister.gov/documents/2003/07/21/03-18197/guidlines-for-architectural-and-engineering-documentation

City of Philadelphia Historical Commission
https://www.phila.gov/departments/philadelphia-historical-commission/

Briefing Paper, The National Park Service Museum Program
Author: Joan Bacharach, Senior Curator, National Park Service Museum Management Program

Table of Contents

I.   **Introduction**

The National Park Service preserves places of national significance and associated museum collections that embody America's cultural and natural heritage. Over 385 of 425 National Park units have museum collections, making the US National Park Service (NPS) one of the largest museum systems in the world. More than 51 million museum objects and specimens and 86,000 linear feet of archives are managed in national parks and centers throughout the USA from the Canadian to the Mexican border, and from Hawaii to the Virgin Islands.

Park museum collections document America in all its diversity from prehistory to the present. They document the lives of presidents and first ladies, civil rights leaders, artists, inventors, farmers, and workers. Many park museums include Native American basketry, beadwork, pottery and more. Objects, including artwork, decorative arts, and everyday items, illuminate the long arc of history and national narratives of significant events and ideas. Biology, paleontology, and geology specimens record a tapestry of varied habitats and ecosystems. All reflect the nation and its diverse history.

Each national park tells a unique story, and its collections are integral to that park's story and mission. The collections are generally managed housed, and interpreted in the places where they were collected, created, or used. They span disciplines from archeology, archives, art, ethnography, and history, to biology, geology, and paleontology. Collections are exhibited in

historic house museums, exhibit galleries, and visitor centers, and stored in purpose-built and adapted structures in parks and centers.

Collections yield information for managing park resources and support scientific studies and publications. They are used in exhibitions and interpretative and educational programs and provide source material for future research, exploration, and learning. Collections are a non-renewable resource that must be preserved, documented, studied, and interpreted for the public's benefit and enjoyment.

II.   Overview and Discussion

A. Definitions

The definitions below highlight the long-standing concurrence within the museum community of what constitutes a professionally managed museum and collections. They underscore the importance of implementing best museum practices in museums in the USA and worldwide.

Museum is "…an institution for the preservation of those objects which best illustrate the phenomena of nature and the works of Man, and the utilization of these for the increase in knowledge of the people" (Goode, 1895). The U.S. Congress, in the Museum and Library Services Act (Title II of P.L. 94-462), defined a museum as "…a public or private nonprofit agency or institution organized on a permanent basis for essentially educational or aesthetic purposes, that utilizes a professional staff, owns or utilizes tangible objects, cares for the tangible objects, and exhibits the tangible objects to the public on a regular basis." " (NPS *Museum Handbook*, I, Ch I: B: Purpose of National Park Service Museums).

On August 24, 2022, The International Council of Museums approved the following definition, "A museum is a not-for-profit, permanent institution in the service of society that researches, collects, conserves, interprets and exhibits tangible and intangible heritage. Open to the public, accessible and inclusive, museums foster diversity and sustainability. They operate and communicate ethically, professionally and with the participation of communities, offering varied experiences for education, enjoyment, reflection and knowledge sharing."

Museum collections are "…a group of artifacts (including archives) and/or scientific specimens that are relevant to the park's mission, mandates, history, and themes, and which the park manages, preserves, and makes available for access (through research, exhibits, and other media) for the public benefit…" (NPS *Museum Handbook*, I: Ch.2: B.1. What is a museum collections)

B. Legislative Mandates related to Museum Collections

Several relevant federal laws govern the management of National Park Service museum collections. They include:

- Antiquities Act of 1906 [16 USC §§ 431- 433]
- National Park Service Organic Act [54 USC §100101]

- Historic Sites, Buildings, Objects, and Antiquities Act (known as the Historic Sites Act of 1935) [54 U.S.C. §§ 320101-320106]
- Management of Museum Properties Act (known as the Museum Act) [54 USC §§ 102501-102504).
- Archaeological Resources Protection Act of 1979 (ARPA) [16 USC §470aa- 470mm]

For additional mandates, see NPS *Museum Handbook*, Part II, Appendix A: <u>Mandates</u> and Standards for NPS Museum Collections.

C. Brief History of the National Park Service Museum Program

Yellowstone National Park, established as the first national park in 1872, was "set apart as a public park… for the benefit and enjoyment of the people…[and] to provide for the preservation…of...natural curiosities…" In 1906, President Theodore Roosevelt signed the Antiquities Act into law, giving the President authority to proclaim "historic landmarks, historic and prehistoric structures, and other **objects of historic or scientific** interest…" [emphasis added] (16 USC 431-433).

The earliest museums grew informally within the parks, starting with a small arboretum in Yosemite in 1904, before the Organic Act of 1916 authorized the creation of the National Park Service. The Act called for conservation of "… scenery and the **natural and historic objects** and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." [emphasis added] (Organic Act [54 USC 100101]). This legislation recognized the need to preserve, protect, and use park collections.

In the 1930s, many American Revolution and Civil War battlefields administered by the War Department were transferred to Park Service stewardship, as were other parks, historic sites, and national monuments. Many came with museum collections. Park museums also benefitted from President Franklin Roosevelt's New Deal federal projects and the construction of many park museums.

The Museum Act of 1955 subsequently strengthened the direct connection between place and context and strengthened professional best practice servicewide, noting that "The purpose …is to increase the public benefits from museums established … as a means of informing the public … and preserving valuable objects and relics relating to the areas." (54 USC Ch. 1025: Museums). By 2023, over 385 parks within the National Park System manage museum collections.

D. Structure and Functions of the National Park Service Museum Program

The National Park Service is headquartered in Washington, D.C. The NPS Museum Management Program (MMP), in the Washington Office provides national program leadership and coordination functions, and develops policies and procedures for managing Park Service collections servicewide. These are issued to the field through NPS <u>Management Policies</u>, Director's Order #24: NPS <u>Museum Collections Management</u> and the NPS *<u>Museum Handbook.</u>*

MMP staff analyze servicewide data for strategic planning, collections management initiatives, funding, and reporting to upper management and the U.S. Congress. They provide professional advice and technical assistance to the field on documentation and accountability, preservation and protection, and collections access. Staff oversee the NPS *National Catalog of Museum Objects*, a centralized repository of museum records submitted annually by parks and centers. They work collaboratively with field staff and the servicewide Museum Management Program Council, which includes regional curators and representative center and park curatorial staff.

The National Park Service is divided into regions, with each providing oversight and support to the parks within its geographic boundary. Regional curators are stationed in Alaska, Arizona, Georgia, Massachusetts, Maryland, Nebraska, and Nevada. They provide technical assistance and guidance to park staff in each region. There are four large curation centers that manage and house multiple park collections. Headquarters and regional staff support but do not have oversite authority of park staff. The park superintendent is responsible for all park programs and supervises park employees, including museum staff.

In 2022, the NPS had 294 curatorial staff in park and centers including curators, museum specialists and technicians, and registrars and archivists with museum responsibilities. Another 252 collateral duty staff, such as historians and archeologists, were assigned park curatorial responsibilities. Park and center museum staff provide routine and daily care, documentation, accountability, preservation, protection, and access to collections. More than 1,400 Park Service structures (exhibit, storage, and administrative spaces) house museum collections. National Park Service collections are also managed in over 720 non-NPS partner institutions, including many university repositories.

E. Department of the Interior Museum Property Program

As one of the larger Department of the Interior (DOI) bureaus, the NPS is responsible for, and manages over 85% of the Department's museum collections. In the early 1990s, in response to the Secretary of the Interior's request, the NPS Museum Management Program established the DOI-wide museum program. The departmental manual and directives for museum property are based on the NPS *Museum Handbook*.

III.   Universal Best Practices

A. National Park Service Museum Policies and Procedures

Documentation and accountability, preservation and protection, and access and use of museum collections are the core tenets of the National Park Service museum program. All are based on universal museum best practices.

National Park Service policies and procedures provide museum staff in this large and geographically dispersed organization with clearly articulated written guidance to ensure uniform implementation and facilitate field support and training. Procedures for diverse collection materials housed in different types of structures and climate zones are practical and easy-to-follow.

.The three-part NPS *Museum Handbook* includes detailed guidance on a wide range of museum, collection, and information management topics. Customizable sample plans, checklists, risk assessments, and forms on a wide range of museum management topics to facilitate efficiency and minimize effort are provided. See the Annex for a sample selection. The *Conserve O Gram* Technical Leaflet Series supplements the *Handbook* with topical and easy-to-use technical information. Both the *Handbook* and *Conserve O Grams* are updated in consultation with field staff and subject matter specialists and are widely reviewed prior to issuance. They are made available <u>online</u> to the NPS and the public at no cost.

Museum Management Program staff is responsible for developing curriculum and providing training on a range of museum management topics servicewide in-person and online. These include strategic planning, fire protection, security, emergency planning, documentation, storage, Integrated Pest Management, making collections accessible and others

B. Preservation and Protection

The *Museum Handbook, <u>Part I, Museum Collections</u>* covers preservation and protection standards, policies, and procedures. Topics cover museum collections environment, biological infestations, storage, security, fire protection, emergency planning, curatorial health and safety, handling, packing, and shipping, museum housekeeping, and conservation treatment, as well as strategic planning for collections growth. Individual chapters and appendices address managing collections on exhibit in visitor centers, historic house museums, and galleries, and in storage in purpose-built facilities, curation centers, and adapted modern buildings. The *Handbook* also addresses requirements for housing different types of materials such as textiles, metal, paper, and paintings.

The <u>*Conserve O Gram*</u> Technical Leaflet series provides topical and expanded information on preservation, security, fire, safety, agents of deterioration, and storage as well as specific needs of different types of materials.

C. Documentation and Accountability

The NPS *Museum Handbook*, Part II, <u>*Museum Records*</u> covers policies and procedures on accessioning, cataloging, deaccessioning and disposal, loans, and inventory. Documentation and accountability facilitate physical and intellectual access essential to collections care, research, and exhibition. Guidance accommodates different disciplines, from archeology to ethnology, history, and natural history. Procedures for marking, lot cataloging, appraisals, insurance, and establishing a park Collections Advisory Committee to address accessioning and deaccessioning issues are included.

Park staff inventory collections annually using standardized procedures for random sampling as well as a 100 percent inventory of selected items. Inventories are essential to maintain accountability for collections in parks, centers, and partner institutions.

The Interior-wide automated collections database, initially developed by the National Park Service for its own collections, facilitates efficient documentation, technical support, data collection, and training. Over 800 NPS local staff use it to manage park databases inhouse and generate required annual park Collection Management Report and NPS Checklist for Preservation and Protection of Museum Collections. MMP analyzes these reports to produce servicewide statistics and trends.

D. Access and Use

The NPS *Museum Handbook, Part III, Museum Collections Use* covers evaluating and documenting use, legal issues related to collections use, two and three dimensional reproductions, publications, and exhibition of collections in historic house museums, visitor centers, and exhibit galleries, other special uses of collections, as well as appendices for planning research space and a publications glossary.

The Museum Management Program collaborates with parks to make collections widely accessible online to the general public, researchers, educators, and students at www.nps.gov/museum and other platforms. MMP staff develops virtual museum exhibits with parks to feature curated, thematic information about park stories and high-quality digital object images. Individual parks opt to participate in and provide selected data and images for public access to collections in public-facing searchable databases and on social media. Staff make collections available for exhibit, education, research, and publication in parks, on loan, and online.

MMP staff develop *Teaching with Museum Collections* lesson plans and educational materials that feature museum collections in collaboration with park staff and educators.

Collections are made accessible on the following online platforms:

- Virtual museum exhibits and tours
- National Park Service *Web Catalog*
- *Teaching with Museum Collections* lesson plans
- NPGallery database
- Social media such as Instagram and Facebook

IV. **Demonstration Examples**

The NPS Museum Management Program collaborates formally and informally with colleagues to provide training, expand capacity, and make collections and educational products widely accessible.

A. Museum Training

The National Park Service Museum Management Program and the University of Guam have collaborated to present several online "Fundamentals of Museum Management" training courses to staff located throughout the USA and Micronesia. MMP develop the curriculum, and topics

included strategic planning, documentation, security, emergency planning, integrated pest management, and others. Training formats included lecture, group work, and case studies.

B. Virtual Museum Exhibits

The Museum Management Program has developed close to 50 virtual museum exhibits in collaboration with parks to make collections and historic house museum tours widely accessible online.

- In 2021, MMP collaborated with Nez Perce National Historical Park and the Nez Perce Tribe to develop a virtual museum exhibit celebrating the return of the earliest documented items of Nez Perce material culture to the Tribe. High-quality images of clothing and horse regalia and video interviews with Nez Perce artisans are included.

- Saint-Gaudens National Historic Site worked with the Department of Diagnostic Radiology, Dartmouth-Hitchcock medical center in New Hampshire to use computed tomography (CT) scanning to "see inside" unopened molds by Augustus Saint-Gaudens. Scans were then used to 3-D print casts of these original works. MMP collaborated with the park to create the online virtual exhibit.

C. Google Arts & Culture (GAC) online

Over 3,000 museums and cultural institutions, nationally and internationally, including the NPS Museum Management Program, have hosting agreements with GAC. Collections are made accessible virtually on the GAC platform at no cost to participating institutions. Participation is by invitation, available at the sign in page. The National Park Service channel features park collections and historic structure interiors at The Hidden Worlds of the National Parks — Google Arts & Culture

D. National Park Service Travel Itineraries

The National Park Service provides Discover our Shared Heritage - Heritage Travel (U.S. National Park Service) travel itineraries featuring historic sites and museums with maps and site information geared to cultural tourism travelers. Many are produced in partnership with the National Conference of State Historic Preservation Officers and state and local organizations.

E. Cooperative Ecosystem Studies Units (CESUs) (U.S. National Park Service) (nps.gov)

The CESU Network is a consortium of federal and non-federal partners who collaborate to protect the nation's natural and cultural heritage. The network enables universities, museums, research institutes, and other organizations to contribute knowledge and skills to preserve public resources and provide partners with access to students.

F. National Council for Preservation Education (NCPE)

NCPE offers paid internships in partnership with the National Park Service (NPS) and other Federal agencies. Recent graduates do internships in historic preservation, cultural resource

management, museum studies, architecture, and related fields. Internships provide work experience and professional development opportunities.

V.   Conclusion on Universal Best Practices

Universal best practices are essential to individual museums, across all departments within the museum, and throughout the museum community.

As defined by the American Alliance of Museums, "Excellence across the museum field begins with the ethics and standards that the field sets for itself to promote accountability, provide a basis for good decision-making, and prove a museum's worthiness of public trust." And importantly, … "Ethics, standards, and professional practices address issues important to the museum field's success in preserving the world's natural and cultural heritage, educating audiences, and enhancing communities; they are codified in policies, procedures, and plans by individual museums; and then are carried out in day-to-day behaviors, decisions, and actions by museum professionals…" American Alliance of Museums, Ethics, Standards, Professional Practices [Ethics, Standards, and Professional Practices – American Alliance of Museums (aam-us.org).

Universal best practices enhance the museum's ability to meet the public trust and facilitate:

- Standardized documentation, accountability, and collections management practices across various departments of the museum, and within local, regional, and state levels of the museum system.
- Optimized planning, design and implementation, and interoperability of electronic collections database management and data collection systems within the museum and between museums.
- Cost-effective bulk acquisition of collections management supplies and equipment.
- Increasing accessibility of museum collections and programs to diverse communities through creative and sustainable collaboration.

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VII.   Annex: NPS *Museum Handbook* Customizable Forms and Figures
(See attached file)

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DEPARTMENT OF THE INTERIOR – INTERNATIONAL TECHNICAL ASSISTANCE PROGRAM
GEORGIA PROTECTED AREAS POLICY REVIEW
CULTURAL RESOURCES – ARCHAEOLOGICAL SITES
FEBRUARY 2023

Lead Author: Nicole Lohman

I.   Introduction

The Cultural Resources Subgroup identified the management of archaeological resources as one of the themes for analysis and research. This paper discusses the major pieces of United States law and policy that guide decision making for the management and protection of these resources. A discussion of how other countries manage their cultural resources in contrast to the United States is also provided, to help inform a series of Universal Best Practices.

The structure and nature of private property-property ownership in the United States, which is based on British-common law, heavily impacts how archaeological sites and cultural resources are managed[1] (Garcia-Barcena 2007). As a result, Federal laws related to protection of archaeological sites only apply to those sites owned by the federal government. Consideration of impacts to sites as a result of development activities is only afforded to sites on federal land or those on state or private lands when the project requires a federal permit or receives federal funding. Many states also have their own laws for protection and consideration of archaeological sites, but in a similar fashion those considerations do not typically apply to private lands. Private land holders are allowed to make whatever decisions they wish about archaeological resources located on their lands, apart from burials, which receive special protections under state laws. This paper will not discuss management at the state and local level but will solely focus on management of archaeological resources at the federal level within the United States.

The following sections draw on federal laws published in the United States Code (USC) and their implementing regulations as published in the Code of Federal Regulations (CFR). Federal agencies also employ their own policies to ensure compliance with federal law and regulations. This paper considers the policies issued and used by the Department of Interior's National Park Service (NPS) and Bureau of Land Management (BLM).

The following sections provide an overview of the National Historic Preservation Act (NHPA) and the Archaeological Resources Protection Act (ARPA). The NHPA provides parameters about what attributes are required of an archaeological site to afford it consideration when planning activities that may result in harm to the site. Meanwhile, the ARPA sets professional requirements for individuals and organizations wishing to perform work related to archaeological

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[1] In the United States, the concept of property ownership is absolute, the owner of a plot of land not only owns the land surface, but also subsurface materials and, in some states, any small bodies of water on the land as well. As a result the landowner owns all archaeological resources on their lands and is free to do with them as they wish, subject to no restrictions of the state or federal government. This is not the case in a number of other countries.

sites, sets the requirements for education and outreach efforts, and establishes criminal and civil penalties for damages incurred at archaeological sites when not conducted under a permit.

II.   Overview

A. The National Historic Preservation Act of 1966 (54 USC §300101 et seq.)

The primary law for managing archaeological sites held in the federal trust in the United States is the National Historic Preservation Act of 1966 (NHPA). This law stresses the importance of the historic and cultural heritage of the United States and recognizes that development threatens these types of resources. The law sets out the development of a National Register of Historic Places and a historic preservation program, stands up state historic preservation programs, sets up a training program for federal workers, establishes an independent federal body known as the Advisory Council on Historic Preservation, and requires federal agencies to consider the effects of their actions on historic properties.

1. *National Register of Historic Places*

   The National Register of Historic Places (NRHP) is defined in the NHPA as a list of districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture (54 USC §302101). The regulations tied to this section of the law set forth the criteria that a site must meet to be considered for inclusion on the National Register. The National Park Service maintains the NRHP and publishes guidance on how to preserve and maintain historic properties[2].

   For a site to be considered eligible for listing on the NRHP it must be at least 50 years old, meet one of four significance criteria, and maintain its ability to convey that significance (known as integrity). The four significance criteria are as follows:

   A. Contribute to the understanding of local, state, or national historical events due to the site's relationship with an event that made a significant contribution to the broad patterns of history;

   B. Are associated with the lives of persons significant in the past;

   C. Embody distinctive characteristics of a type, period, or method of construction, or are the work of a master;

   D. Have yielded or are likely to yield information important to history.

   A site must be able to adequately convey significant aspects by maintaining integrity of either setting, materials, design, location, feeling, workmanship, or association, in order to be considered eligible. Effects on eligible sites must be considered when a project is

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[2] The publications from the National Park Service are called National Register Bulletins and include information on topics such as how to evaluate sites for eligibility, documenting historic sites, and evaluating places of Traditional Cultural significance.

proposed by a federal agency, is a result of the expenditure of federal funds, or requires a federal permit.

2. *State Historic Preservation Programs*

The NHPA also establishes State Historic Preservation Officers (SHPO) who manage statewide preservation efforts and represent the interests of individual states when a federal agency proposes and action that could result in damage or harm to a historic property. The SHPO provides comments on the impacts a federal agency discloses that will be a result of a proposed project and also states if they agree with the agency on their determinations of eligibility of sites within the project area.

3. *Advisory Council on Historic Preservation*

Additionally, the NHPA established an Advisory Council on historic preservation which is an oversight board consisting of twelve individuals representing the interests of state, federal, and Indigenous governments and organizations. The council advises the President and Congress on matters relating to historic preservation and also serves as a review body which provides recommendations on how to resolve disputes pertaining to federal actions that may cause impacts to historic properties.

In practice, Federal Agencies primarily operate under "Section 106" of the NHPA and its regulations located at 36 CFR 800. Individual agencies have also promulgated their own specific requirements for fulfilment of Section 106 obligations[3]. At the highest level, Section 106 requires that federal agencies consider a project's impacts to historic properties (those sites either listed on or eligible to be listed to the NRHP) when proposing an activity that may cause impacts to those properties. In order to be able to adequately assess if the impacts from the project will cause an adverse effect, the agency must first identify sites by either conducting research of historic documents or a review of previous documentation efforts in the target area. Alternatively, an agency may perform an on-the-ground survey using approved methods in the area that will be potentially impacted by the proposed activity. Encountered resources are then evaluated against the NRHP eligibility criteria. The agency then considers impacts of the project on eligible properties. During this process the agency also reaches out to what are termed consulting parties – the State Historic Preservation Officer, local governments, indigenous populations with ties to the project area, and organizations and individuals with an interest in the undertaking. These groups help inform the agency about resources in the area and, if an adverse effect is found, help in developing mitigating measures the agency will take to minimize effects.

After identification efforts are completed and input from consulting parties is considered, the agency makes a finding of effect for the project. The agency sends this finding and supporting documentation to the State Historic Preservation Officer (SHPO) for review. If the SHPO agrees the process is either complete or parties move to draft either a Memorandum of Agreement or Programmatic Agreement to address adverse effects. If both parties do not agree, then the case is brought before the Advisory Council on Historic Preservation for review and comment.

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[3] See the Bureau of Land Management's 8100 manual series and the National Park Service's Technical Briefs, links are provided in the appendix.

Federal Agency involves the Public

Federal Agency initiates the S106 Process:
Establish undertaking
Identify appropriate SHPO/THPO
Plan to involve the public
Identify other consulting parties
SHPO may be consulted to help identify interested parties. In general, Federal agencies accomplish this through NEPA process.

No undertaking/ No potential to cause effects

Process is done

Federal Agency involves the Public

Federal Agency has undertaking that might affect historic properties
Determine scope of efforts
Identify historic properties
SHPO is contacted by agency or consultant to perform a formal record search of previously identified resources and past inventories. Once Class III inventory is complete, SHPO is contacted to obtain permanent state site numbers.
Federal Agency evaluates historic significance of resources and determines the effect.
Agency consults with SHPO on their determination of eligibility and effect (special agreements streamline this step).

No historic properties affected

Process is done

Federal Agency involves the Public

Federal Agency considers minimization/avoidance, then applies criteria of adverse effect
Federal Agency makes formal determination of effect
Agency consults with SHPO on determination. Outcome is either "No Historic Properties Adversely Affected" or "Historic Properties Adversely Affected"

No historic properties adversely affected

Process is done

Federal Agency involves the Public

Federal Agency must resolve Adverse Effects with an executed MOA/PA involving SHPO, THPO, Native American Tribes, Interested Parties, CLGs, and Local Governments as appropriate.
SHPO participates in the MOA/PA process and must sign the agreement.

Historic properties adversely affected; Signed MOA/PA

Process is done

Failure to Agree: Federal Agency terminates Consultation

ACHP Comment

Process is done

Acronyms Used in Diagram	
SHPO	State Historic Preservation Officer
THPO	Tribal Historic Preservation Officer
NEPA	National Environmental Policy Act
S106	Section 106 of the National Historic Preservation Act
CLG	Certified Local Government
MOA	Memorandum of Agreement
PA	Programmatic Agreement
ACHP	Advisory Council on Historic Preservation

Figure 1. Diagram of the Section 106 consultation process based upon the finding of effect.

B. The Archaeological Resources Protection Act of 1979 (16 U.S.C. Ch. 1B)

Unlike the NHPA, which includes provisions for historic sites and structures, the ARPA focuses explicitly on archaeological resources. The act defines an archaeological resource as, "any material remains of human life or activities for are at least 100 years of age and are of archaeological interest" (43 CFR 7.3[a]). An item is of archaeological interest if it is, "capable of providing scientific or humanistic understandings of past human behavior, cultural adaptation, and related topics" (43 CFR 7.3[b]). ARPA requires that anyone attempting to remove or excavate an archaeological sites on federal or Indian lands obtain a permit, requires the curation of any artifacts and associated documentation from such excavations, prohibits the trafficking and sale of resources removed in violation of the act, prohibits damage or defacement of archaeological resources, and requires federal land managers to establish programs to increase awareness of the significance of archaeological resources on public lands. Another important provision of the law is the protection of the location and nature of archaeological sites.

The ARPA sets forth minimum requirements for obtaining a permit for excavation. The applicant must meet the minimum education and experience requirements set forth in the act, the activity proposed must further archaeological knowledge and be in the public interest, artifacts and records must be curated, and the activity cannot be inconsistent with any management plan for the land under consideration.

C. UNESCO and ICOMOS

International bodies also provide guidance on the protection and management of archaeological resources. Of note are the United Nations Educational, Scientific, and Cultural Organization (UNESCO) World Heritage Convention and the International Council on Monuments and Sites (ICOMOS). Many nations worldwide subscribe to the UNESCO conventions on cultural heritage and have listed World Heritage Sites.

In 1972 UNESCO adopted the *Convention Concerning the Protection of the World Cultural and Natural Heritage[4]*. UNESCO also published a lengthy guide entitled *Managing Cultural World Heritage* in collaboration with the ICOMOS which provides guidance on how to implement the UNESCO Convention. The guide provides broad level guidance about how nations should develop and implement cultural heritage management programs.

III. Demonstration

NHPA Section 106 Case Study: Nine Mile Canyon

In 2005 the Bureau of Land Management (BLM) in Price, Utah received a proposal from an energy company to develop 800 oil and gas wells. The proposal included an increase in truck traffic on a dirt road though a canyon filled with thousands of petroglyphs and pictographs. The BLM reached out to consulting parties and tribes about the proposed project and conducted surveys of the project area to locate archaeological sites. Consulting parties raised

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[4] A link to this document is provided in the appendix.

concerns that an increase in industrial traffic would result in increased airborne dust, leading to accelerated erosion of the rock art panels. A study was also conducted to better inform all parties about the physical effects of the generated dust to rock art panels (ACHP 2018).

The study proved inconclusive about what impacts the dust would cause to the petroglyphs apart from obscuring their visibility. Therefore, the BLM proposed a finding of adverse effect, as the project may have caused an adverse effect to historic properties. In consultation with consulting parties, tribes, and the Advisory Council on Historic Preservation, a Programmatic Agreement for addressing those unknown impact was drafted over the course of ten months. The Programmatic Agreement committed the agency and project proponent to certain measures to mitigate potential adverse effects, such as changing the type of dust suppression used, documenting additional sites, and developing interpretive sites within the canyon.

ARPA Case Study: The Cerberus Collection

In 2009 agents from the Federal Bureau of Investigation (FBI) seized over 100,000 artifacts looted from archaeological sites on federal lands in the Four Corners region of the American Southwest. This action took place after a 2.5 year investigation conducted under the auspices of the Archaeological Resources Protection Act. In order to successfully convict someone under the act, they must either admit to the illegal removal and collection of artifacts from federal lands or be caught while actively looting. After receiving a tip, the FBI enlisted an informant who accompanied the perpetrators out to sites in the Four Corners area.

As the actors in this crime were caught actively digging in archaeological sites without a permit, twenty-four individuals were charged with violations of the ARPA and required to pay fines and surrender the looted artifacts to the federal government. The BLM continues to work on identifying the artifacts, preparing them for curation in approved repositories, and continues to consult with Native American tribes about artifacts removed from burials or considered sacred, as required by the Native American Graves Protection and Repatriation Act.

IV.   Discussion

Cultural Resource laws in the United States provide a legal framework for the management of both archaeological and historical sites. While these laws only apply to federal lands, most states have equivalent laws requiring consideration of impacts to sites on their public lands as well. It must be stressed that the laws do not require that sites are universally preserved in all circumstances, but rather that archaeological and historic sites are considered when a government is proposing an activity that may cause harm to the resources. If a proposed project will result in impacts to a site, actions must be taken to reduce or mitigate the damage so that important information about the property is retained for posterity.

Outside of the framework for consideration of archaeological and historic sites when the government proposes a project, protective laws establish civil and criminal penalties if

individuals remove or excavate sites without a permit or attempt to sell cultural objects removed from federal lands.

A weakness of the United States' cultural resource laws is that they only apply to the consideration of cultural resources on federal land or those that would be impacted by a federal project. Management and ownership of archaeological sites varies across the globe, with ownership ranging from complete federal control, to mixed state and federal ownership, to systems of private ownership dependent on property laws, as in the United States. For example, in Mexico all archaeological materials are the property of the federal government with the Instituto Nacional de Antropologia e Historia given the responsibility for maintaining and caring for all archaeological sites and museums in the country (Sebastian 2007).

In contrast, in Great Britain ownership of archaeological materials follows a complex set of laws to determine ownership. British treasure trove law states that objects of gold and silver that are discovered by members of the public whose owners cannot be traced become the property of the Crown. However, for objects not of gold and silver, the finder of an object becomes the owner, rather than the owner of the real property on which the object(s) were found (Halfin 1995). Both of these laws apply to archaeological resources in addition to any discoveries not archaeological in nature.

Countries like Japan take a mixed approach to ownership. Under the National Law for the Protection of Cultural Properties, the federal government of Japan designates and selects the most important cultural resources, including what are called *maizo bunkazai* or "buried cultural properties." Protection measures are imposed by the federal government on the designated sites. For buried sites restrictions are placed on their excavation. The federal government of Japan must be notified when any archaeological site is to be excavated, either for scientific purposes or when construction is started in an area known to have buried cultural resources. The federal government asks the developer to pay for the excavation if the site cannot be preserved in is present state, but when it is not appropriate, Japan pays for the excavation out of the National Treasury. All artifacts found are turned over to the police who (with boards of education) determine if the object is a cultural property. Cultural properties with no known owner become the property of the prefecture which manages the land (Agency for Cultural Affairs, 2012)[5]. In this respect, while the federal government of Japan manages the most significant cultural properties, the majority remain the property of the prefecture (state). Unlike with the United States or Great Britain, regardless of who owns or occupies the land, unless there is a known owner of that specific object, the prefecture (state) retains ownership.

The uniting factor between these differing systems of management is the recognition of the need to identify archaeological and historic cultural sites and establish guidelines for their use and treatment. All require some form of protection or consideration of these types of sites, though the extent and applicability of those laws varies.

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[5] Therefore, the government retains control of most archaeological resources, as there usually is not a direct owner in existence.

V.   Conclusions on Universal Best Practices

This section discusses practices related to the management of archaeological sites that have proven successful in the United States, while also highlighting practices the underly archaeological resource management worldwide. The underpinnings of these practices stem from United States and international laws spanning at least 100 years. Japanese laws and management primarily stem from laws established in 1950 after World War II, and draw from lessons learned from other counties management of cultural heritage. A number of these universal best practices are similar in nature to those identified in the briefing for Non-material Cultural Resources, Ethnographic Information, and Cultural Landscapes, as the underpinning laws in the United States are the same for archaeological resources.

A. Identify What Needs to be Protected and/or Considered

In establishing any national program related to the management of archaeological and cultural sites, the nation first must decide what resources are important to the nation at a general conceptual level. What are the types of sites that merit special consideration? What features or characteristics must an archaeological site possess? Should particular sites deemed nationally significant receive greater protections and be compiled in a national list or registry? At what level of government should these sites be managed? These questions must first be considered and decided upon, in order to set a framework for management.

B. Establish a Solid Legal Framework

The most important aspect of the management of archaeological resources is establishing a law or a series of laws at the federal level. These laws should establish and clearly define to what resources they apply, taking in to account any limits on ownership tied to national private property law. These laws should include the parameters that the nation has considered for what constitutes an archaeological site, and then establish screening factors whether the site should receive any special considerations, and who is responsible for evaluating those decisions.

Eligibility for consideration under the law may be defined by age as well as criteria establishing importance and the condition a site.. Laws may also establish a process for establishing lists or registries of the most important archaeological or cultural sites and the process for evaluating and adding sites to such lists. Laws may also codify processes for permitting excavations and penalties for disturbing archaeological sites without express permission. Step down regulations can further flesh out the actual processes that the law would require.

C. Executive Department Oversight

After establishing laws and regulations related to the management of archaeological and cultural resources, the duties for oversight of those processes and maintenance of any national registries or sites deemed the property of the federal government must be assigned to an agency. This agency is responsible for overseeing all aspects of the federal program for archaeological and cultural resources and establishing additional guidance for the identification and documentation of sites, issuing professional guidelines, and resolving any disputes.

D. Identify Archaeological Sites

In order to consider or protect archaeological resources, these sites must be identified. Requirements and processes should be established either at the federal or state level defining what methods are appropriate for identification and what information should be collected about any archaeological sites encountered. Provisions must also be made for the organization and retention of any documents made as part of an identification processes so that any future work in the area takes these resources into account. The identified resources must also be evaluated against the criteria established by the federal laws to determine if special considerations or protection are needed.

E. Involve the Public

The citizens of a nation belong to a number of social and cultural groups with ties to the archaeological and cultural resources of that nation. Groups of these individuals frequently have an interest in those areas they have ancestral ties with and can serve as informants about the significance of particular resources and as stewards of those sites.

Summary

In terms of universal best practices for establishing effective management of archaeological resources, it is important to take a "top-down" approach. This begins at the highest levels of government working with their citizens to determine what aspects of their shared cultural heritage expressed in archaeological sites merit protections and considerations when development is proposed in an area. From these broad ideas, laws are established to codify the nation's commitment to these values. After laws are established, a bureau should establish how sites will be identified in practice and who is qualified to complete such work. An agency will need to develop policies on the bureaucratic day to day operations of such a program. As archaeological resources are part of the cultural heritage of a nation, it is important to take the considerations of members of the public and of cultural and social organizations into account when making decisions that may impact archaeological sites.

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Appendix - Sources of Useful Information Available on the Internet

National Historic Preservation Act
https://www.achp.gov/sites/default/files/2018-06/nhpa.pdf

National Historic Preservation Act Overview
https://www.nps.gov/archeology/tools/laws/NHPA.htm

Archaeological Resources Protection Act Text
https://www.law.cornell.edu/uscode/text/16/chapter-1B

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https://www.nps.gov/archeology/tools/laws/ARPA.htm

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Project Phase 2.3 – Briefing Paper: Ecosystem, Wildlife and Human Health

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I.   Introduction

Healthy ecosystems, habitats and wildlife populations are critical for protecting biodiversity and producing positive health benefits for humans and livestock. Well-managed protected areas are a cornerstone for healthy ecosystems, habitats and wildlife populations, and the benefits nature provides for biodiversity and human health. Conversely, unhealthy habitats and wildlife can present risks to humans and livestock. For example, diseases emerging in wild habitats that "spill over" to humans from animals ("zoonotic diseases") or insects ("vector-borne diseases") are on the rise. Moreover, humans carry diseases that in turn may be transmitted to wild animals.

Enhancing preventive measures and addressing gaps in disease detection and response systems are critical for conserving species populations and biodiversity. These measures also create resilience to future disease outbreaks and pandemics. Effectively protecting wildlife health and reducing spillover risks requires expertise from a wide range of disciplines, including biologists, ecologists, animal and human health experts, disaster risk managers, social scientists, and policy makers.

II.   Overview and Discussion

The One Health Approach

Scientists and government leaders are calling for inter-disciplinary "One Health" approaches that integrate ecological, animal, and human health expertise. One Health includes efforts to increase the recovery and resilience of wild habitats, reduce human interference with nature, improve detection and early warning of spillover risks, and address specific risk pathways. In October, 2019, the German government and the World Conservation Society (WCS) unveiled the Berlin Principles - One Planet, One Earth, One Future, which consist of ten policy proposals that seek to integrate public health and biodiversity decision-making. The effort builds on two antecedents: an initial set of principles advanced by WCS after the SARS epidemic, known as the "Manhattan Principles"; and the March, 2019 "Tripartite Guide" issued by the Food and Agriculture Organization (FAO), World Health Organization (WHO) and the World Organization for Animal Health.[1]

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[1] While this paper focuses largely on the transmission of zoonotic and vector-borne diseases from natural habitats and wildlife populations to humans and domesticated animals, the concept of One Health is not limited to disease transmission. It includes the full range of health benefits and risks presented by natural ecosystems and wild flora and fauna, including the contribution of healthy, resilient ecosystems to human health and well-being.

One Health, Zoonotic Disease, and Protected Area Management in the United States

As the guardians of natural habitats which provide refugia for often stressed and threatened wildlife populations, protected area managers are on the front lines of improved efforts to protect the health of wildlife populations, and to prevent, detect and respond to spillover risks. Spillover risks are exacerbated by activities and phenomena that undermine the health of ecosystems, habitats and wildlife populations and bring humans and wildlife into close contact. Habitat fragmentation. ecosystem degradation, global climate change and other stressors are altering the ranges, migratory patterns, and resilience of wildlife, plant and insect populations and the health of the ecosystems that house them. Other factors that increase these risks include the visitation of humans to protected areas for recreation and research, the illegal poaching and trade in wild animals from protected areas, and the movement of free-ranging species between protected areas, nearby agricultural lands, and neighboring communities. Threatened wildlife species with small populations and significant habitat loss spread more viruses to humans than other species.

Protected area managers and scientists at the Department of the Interior's (DOI's) Fish and Wildlife Service, National Park Service, Bureau of Land Management, and U.S. Geological Survey are increasingly focused on building the capacity for prevention, detection, and response to diseases affecting wildlife, along with spillover risks between wildlife, livestock, and humans. Further, Native American Tribes apply knowledge and time-tested practices to nurture biodiverse ecosystems. Improving coordination among ecosystem, wildlife, domestic livestock, and human health authorities is the cornerstone of a One Health approach that integrates ecological, animal, plant and human health.

The U.S. Fish and Wildlife Service (USFWS): Pursuant to its mission to "work with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people", USFWS manages more than 560 National Wildlife Refuges. USFWS utilizes a One Health approach to identify, understand, and address the factors that increase disease spillover risks between animals, humans, and the environment. USFWS staff that support these efforts include wildlife and aquatic species disease biologists, wildlife biotechnicians, social scientists, hydrologists, policy specialists, One Health coordinators, endangered species recovery specialists, wildlife law enforcement, veterinarians, and others. These experts are embedded in individual Refuges and supported by USFWS's Wildlife Health Office, as well as the USFWS Office of Law Enforcement's forensics lab, and other offices within the Service. USFWS program staff provide expertise in disease prevention, preparation, detection, and response and collaborate with internal and external stakeholders on issues such as wildlife and zoonotic disease surveillance, ecosystem health, wildlife trafficking, response to disease issues in endangered species recovery programs, animal welfare, and public health.

National Park Service (NPS): Biodiversity loss and degradation of functional ecosystems is a key driver of spillover in addition to reducing the resilience of the ecosystem services humans depend upon. As steward of the United States' system of National Parks, NPS uses an interdisciplinary approach to prevent, detect, and respond to diseases that can threaten wildlife found in National Parks and migrate between wildlife and humans. NPS staff includes wildlife veterinarians, a disease ecologist, wildlife technicians, a medical epidemiologist and veterinary epidemiologists specializing in zoonotic disease. Networks of regional and park biologists,

ecologists, safety officers, public health specialists, natural resource managers and communication specialists assist with disease prevention, detection and response in wildlife, domestic animals, visitors and NPS staff.

Bureau of Land Management (BLM): BLM manages 245 million acres of public lands across the American West, dedicated for multiple uses that include conservation, recreation, livestock management, and mining. Much of this land includes or is adjacent to wild habitats and ecosystems, connecting wild spaces to spaces impacted by human activity. These multi-use public lands can serve either as a buffer to reduce the risk of zoonotic disease spillover, or alternatively as places where that risk manifests, such as the transfer of wildlife pathogens to humans through intermediate species such as livestock.

BLM's Resource Management Plans serve as blueprints for keeping public landscapes healthy and productive for multiple use. In developing these plans, BLM invites and values local voices and diverse views; respects the ties that native and traditional communities have to the land; and develops partnerships that bring successful resource stewardship. Because so many of the issues that confront public landmanagement transcend traditional organizational boundaries, BLM prioritizes coordination and cooperation across large landscapes or ecosystems. These efforts to build mutual commitment to land conservation strategies which maintain or restore the health and productivity of public and adjacent lands across shared landscapes.

United States Geological Survey (USGS) National Wildlife Health Center: Strengthening surveillance systems for zoonotic pathogens in wildlife is critical to preventing and controlling spillover of pathogens between wildlife and humans. While many health and agriculture agencies have surveillance programs for diseases in humans and domestic animals, wildlife surveillance is often the weakest component of a comprehensive, integrated health surveillance system. Countries' capabilities range from well-established to rudimentary programs. USGS's National Wildlife Health Center has the mission of advancing wildlife health science for the benefit of animals, humans, and the environment. The Center's work includes a comprehensive research program focused on wildlife health and disease surveillance and has supported pathogen surveillance responses to West Nile and Avian Influenza outbreaks. Its current focus in relation to SARS COV-2 is on human to wildlife transmission.

USGS has developed a needs assessment tool to assess the current state of wildlife disease surveillance systems, identify gaps and needs in functions and capabilities, and inform the development of capacity building activities to fill those gaps. Efforts focus on integrating disease surveillance systems, so that pathogens can be controlled before they affect human health. Tools to advance this integration include working groups, data management policies, communication networks, and laboratory networks using One Health approaches. USGS's aim is to support the development of surveillance systems that are sustainable, target species and geographic locations at greatest risk, and enable decision makers to deploy timely interventions.

Native American Tribes: The COVID-19 pandemic has had a disproportionate impact on the 370 million Indigenous people world-wide, including Native American communities in the United States. Contributing factors include economic vulnerability, disparities in economic conditions, access to health care, water, information (e.g., the digital divide), and marginalization

from majority populations. Reliance on subsistence practices and often living near national protected areas can place Indigenous peoples in proximity to wild habitats and wildlife, increasing their vulnerability. As a result, Indigenous communities in the United States and worldwide have a huge stake in mitigating wildlife disease and the risk of future pandemics.

Indigenous peoples in the United States and elsewhere often have deep histories as stewards of the natural resources on which they have depended for generations. This experience has allowed many Native American communities to develop knowledge and time-tested practices to nurture robust, biodiverse ecosystems and preserve a harmonious balance between nature and humankind. This traditional knowledge can be an important complement to Western science in reducing stresses to wild habitats, wildlife and livestock that can threaten important species and create conditions for increased risk of spillover of zoonotic pathogens to humans.

III.   Demonstration Examples

The Annexes to this paper describe in detail three "demonstration examples" of efforts to monitor, detect and respond to infectious disease risks emerging from wildlife populations in protected areas. Two of these are examples in the United States, a third demonstrates how these concepts have been deployed in an international context.

Bison Health: The American bison once roamed the North American plains in the millions. The species was integral to the culture and subsistence of many Native American tribes, and the bison is featured in the seal of the Department of the Interior. By the late 1800's, their numbers had dwindled to around 1,000. Conservation efforts in the twentieth century brought the American bison back from the brink of extinction. By 2008, about 11,000 bison existed in 19 herds across twelve states in the American west, mostly dwelling within protected areas managed by the National Park Service, the Fish and Wildlife Service, and the Bureau of Land Management. Several endemic diseases pose risks to the bison population, including bovine brucellosis, which spilled over from livestock, as well as anthrax, hemorrhagic disease, foot-and-mouth disease (FMD), and others. Bison are also susceptible to other cattle diseases, such as bovine tuberculosis (TB).

Annex 1 describes the 2008 and 2020 DOI Bison Conservation Initiatives, which adopted a holistic approach, managing DOI bison herds together as a metapopulation, and focusing not only on the presence of disease, but also on promoting resilient, sustainable populations capable of resisting health threats. These efforts adopted a multi-jurisdictional, multi-stakeholder approach, emphasizing coordination among a range of federal, state and local authorities and the use of health management practices that are tailored to the needs of individual herds. These Initiatives have led to a Secretary of the Interior Order, issued March 3, 2023, on Restoration of American Bison and the Prairie Grasslands. **(Annex 2)** The Order lays out an integrated approach to restore wild and healthy populations of American bison, along with their prairie grasslands ecosystem, through collaboration among the Department's Bureaus, other federal agencies, states, Tribes, landowners, and conservationists, using the best available science and Indigenous Knowledge. It calls for managing bison health to address the risks that disease in bison may pose to human health, domestic animals, and other wildlife.

Combatting Screwworm Infestation of Key Deer: The flesh-eating larvae of the New World screwworm (Cochliomyia hominivorax) have caused devastating livestock losses and can infect humans with often fatal consequences. Although it was eradicated from the United States in the 1960's, in 2016 U.S. Fish and Wildlife Service biologists observed a die-off of threatened deer from screwworm disease in and around Key Deer National Refuge on Big Pine Key, in the Florida Keys. **Annex 3** describes the intensive coordination efforts among refuge managers, biologists, USFWS experts, the U.S. Department of Agriculture, Florida state and county officials, non-governmental organizations, and citizen science volunteers to detect, treat, and when necessary, euthanize infected deer. These efforts, involving action both within and outside the refuge, effectively contained the outbreak within a matter of months. Aggressive and well-coordinated efforts protected this threatened species, the country's livestock, and humans from this devastating disease.

Wildlife Mortality Surveillance to Detect Ebola Virus in Northern Congo: Finally, **Annex 4** describes a program in the Republic of Congo to provide early warning of spillover risks of the Ebolavirus, deadly to humans and great apes. The program engages park rangers across several protected areas, nearby communities, hunters, and health authorities to monitor, report, safely retrieve and analyze samples from the carcasses of wild animals to aid in the early detection of possible Ebolavirus outbreaks. It also includes community education efforts, to reduce the risk of exposure to Ebolavirus from contact with infected animals. The program demonstrates the potential for robust wildlife disease surveillance and community awareness efforts that involve partners within and beyond protected areas to prevent, detect, and rapidly respond to spillover risks from deadly zoonotic diseases.

IV.   Conclusion on Universal Best Practices

Protected area managers play an important role on the front lines of managing health of wildlife populations, along with the risks of zoonotic and vector-borne disease spillover between wild animals, insects, plants, livestock, and humans. Efforts to address spillover risks include building internal expertise and capacity for disease surveillance (detection), managing and mitigating transmission risks, especially by enhancing ecosystem function, and responding to spill-over when it occurs. A national team within the agencies responsible for protected area management can support individual protected area units in:

- **Prevention**: Includes protecting the capacity for ecosystem function and resilience, as well as education, policy development, and trainings to prevent disease introduction and spread. Communication specialists at individual protected area units conduct outreach to visitors and the public about the importance of ecosystem function and the role of humans in the natural world.
- **Detection**: Includes creating a network of diversely trained and connected people to know when public, animal, or ecosystem health is at risk. Further includes training field staff to identify and respond to pathogens of concern as well as providing veterinary and medical diagnostic services and targeted research and surveillance..
- **Response**: Includes: engaging partners across the animal and public health sectors; deploying rapid response teams for emerging issues; and dedicating scientific research to addressing emerging One Health topics.

A key starting point for these efforts is developing methods for assessing the health and vulnerability of protected area ecosystems. Assessments ask: Are the wildlife habitats degraded? Are the ecosystems functioning or showing the capacity to function? Are ecoystems providing key health resources such as clean and sufficient water, clean air, and suitable habitat for thriving wildlife populations? Are wild plant and animal populations adequately biodiverse to be resilient to ecosystem stressors? Are there keystone species that are missing? Are humans encroaching on these areas? What tools are available to protect these ecosystem services? Answering these questions identifies vulnerabilities, and opportunities for improvement. USGS's needs assessment tool is an example of a methodology that could be employed in other countries.

Based on such an assessment, protected area managers can target the diseases, carrier species and geographic areas that present the greatest risks of disease spillover. Key considerations include the likelihood of human wildlife interactions, the presence and prevalence of pathogens in both populations, as well as insect vector persistence and prevalence.

Because wild animals and insects often migrate in and out of protected areas, consideration should be given to engaging local communities, including farmers and ranchers that live in proximity to the protected area or along the migratory range routes of target species. Managers should incorporate Indigenous and local knowledge to complement "Western" science and inform the design of prevention, detection and response efforts.

Managers should coordinate across the range of ecology, wildlife, livestock, and human health specialists, locally and nationally – as embodied in the concept of One Health. Establishing networks across these disciplines can help with the development of more effective prevention, detection and response efforts. Such programs should consider the two-way nature of spillover risks; i.e., diseases can be spread from wild animals and insects in protected areas to livestock and humans, or vice versa.

Finally, and quite possibly most importantly, demonstrating the value of intact ecosystems in protecting human, wildlife, and domestic animal health is one of the most important functions protected areas may have. Without these areas where complex and nuanced interactions are allowed to function unimpeded by human manipulation and interests, we will certainly lose many of the ecosystem functions that we enjoy but often fail to recognize (e.g., functioning watersheds, wetlands, riparian areas and clean air, water, and habitats). Maintaining ecosystem function, biodiversity, and environmental resilience will be some of the biggest challenges to protected area management in the coming millennium.

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Executive Summary

The North American plains bison once numbered in the tens of millions, but only around 1,000 individuals remained by the late 1800s. Through the actions of private individuals and organizations, the establishment of a few protected, federally managed, herds saved the subspecies from extinction and today the Department of the Interior (DOI) supports approximately 11,000 plains bison in 19 herds across 12 states.

DOI chartered the Bison Conservation Initiative in 2008, which established a framework for bison conservation and restoration on appropriate lands within the species' historical range. With the recent announcement of the 2020 DOI Bison Conservation Initiative, DOI outlined a diverse range of accomplishments made under the 2008 Initiative and re-affirmed the commitment to work with partners in support of managing bison as native wildlife.

Both the 2008 and 2020 DOI Bison Conservation Initiatives endorse a holistic approach, addressing health and genetic considerations, and recommend managing DOI bison herds together as a metapopulation to conserve genetic diversity by restoring gene flow. Bison conservation and restoration efforts must consider the significance of disease in bison herds and apply a multi-jurisdictional, multi-stakeholder approach to the management of bison on large landscapes. Robust herd health surveillance programs, both in the donor and recipient herds, along with strong

partnerships and communication, are needed to protect the century-long success of DOI bison conservation and stewardship. This report discusses overarching principles affecting bison health decisions in DOI herds and provides detailed baseline herd health history and management, providing a foundation upon which the 2020 Bison Conservation Initiative vision for DOI bison stewardship can be realized.

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DOI Bison Conservation Herds

Currently, nine NPS units, seven FWS units, and two BLM/ State of Utah management units support about 11,000 bison (Table 1). Approximately half of these bison are within the brucellosis-endemic zone of the Greater Yellowstone Area (GYA) (National Elk Refuge/Grand Teton National Park and Yellowstone National Park populations). Of the remaining bison ~3,500 are managed in Refuges and Parks behind fences while ~1,500 are free-ranging in 5 small herds, including: a herd residing on the north rim of Grand Canyon National Park in Arizona; in two separate herds in Wrangell-St. Elias National Park and Preserve in Alaska; and in two herds which range on tribal, state, private, and BLM lands in Utah. Bison on all DOI lands, with the exception of the two Alaska herds, are managed within the historic range of plains bison.

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DOI Bison Health and Disease Concerns

Historically, concern about DOI bison health has focused almost exclusively on bovine brucellosis, caused by the bacterium, *Brucella abortus*. Introduced to wildlife by domestic livestock, bovine brucellosis has been the target of a national eradication program since 1934. Although this disease has been virtually eliminated from domestic cattle, it is endemic in bison and elk in the GYA. While all 17 DOI herds outside of the GYA are considered brucellosis-free, conservation of bison is hampered by concern over movement of brucellosis-exposed animals from the two DOI herds in the GYA. Management of bison in the GYA is complicated by the desire to retain free-ranging herds of wildlife while minimizing the potential for transmission of *B. abortus* to livestock.

While concerns surrounding bovine brucellosis have been the most pressing, other diseases could pose significant risks to bison conservation. Endemic diseases such as anthrax, hemorrhagic disease, and disease associated with *Mycoplasma bovis* – as well as foreign animal diseases such as foot-and-mouth disease (FMD), heartwater, and Schmallenberg virus – could impact DOI bison herds. Bison are also susceptible to other cattle diseases, such as bovine tuberculosis (TB), paratuberculosis (Johne's disease) and bovine viral diarrhea virus, among others, and could serve as a source of disease if infected.

DOI Bison Health Management Practices

Wildlife health cannot merely be measured based on the lack of disease-causing pathogens but instead must incorporate the concepts of vulnerability, resilience, and sustainability of populations (Stephen 2014). Stephen suggested that, "wildlife health is not a biologic state but rather a dynamic social construct based on human expectations and knowledge". Therefore, DOI bison are managed to ensure healthy (i.e., resilient and sustainable populations that have the capacity to cope with disease threats), though not necessarily disease-free, herds of bison that contribute to the conservation of bison across North America. To ensure that bison health management practices

employed by DOI also protect public health and the health of neighboring livestock, tools for managing healthy DOI bison may vary with location and across time.

All DOI bison herds are monitored through remote observation, during capture, or, in a few populations, during hunts. Most DOI bison are not routinely treated for illness; however, if the health of the herd, humans, or surrounding livestock is threatened, disease management is often employed. Additionally, sick animals may be euthanized for necropsy, gross pathology, histopathology, and ancillary diagnostic tests to determine the cause of disease.

Capture and disease testing: Because bison reproduction often exceeds ecological and/or social carrying capacity, capture and removal of animals may be used to keep the population in balance with the available habitat. Many herds are gathered using a variety of techniques, including use of bait such as forage or water; or using people in helicopters, in vehicles, on horseback, or on foot. Excess animals are then donated to other DOI herds, tribes, or conservation partners. When bison are captured, blood and tissue samples are often collected for disease testing, genetic analysis, and archive purposes. Serum is often stored and banked for future disease testing from a subset of individuals. While serologic surveillance for bovine brucellosis may be required to meet interstate transport regulations, disease surveillance for other pathogens is conducted based on geographic location, herd health history, and herd management goals.

Marking and identification: Most bison in fenced DOI populations are permanently identified with subcutaneous radio-frequency identification tags (i.e., RFID, Passive Integrated Transponder [PIT] tag, microchip), providing long-term, reliable identification that can be read at the time of capture. Identification of animals early in life reduces handling stress by minimizing the number of times an animal must be handled and allows long-term health data to be maintained for individual animals. Small, metal "brite" ear tags approved by APHIS as part of a national animal identification system are often used as another form of identification and to meet interstate transport regulations.

Bison Health Management in the Greater Yellowstone Area: Management of free-ranging bison herds in the GYA varies and may include hunting outside of National Parks, hazing into areas where bison are tolerated, or capture using similar techniques as described above. Bison in and around Yellowstone National Park are managed within the framework of an Interagency Bison Management Plan (IBMP 2020), implemented by federal, state, and tribal partners. In this population, hundreds of animals are harvested or sent to slaughter in years when animals leave the park at a level exceeding tolerance threshold of surrounding landowners and managers. Additionally, Yellowstone National Park has recently adopted a brucellosis quarantine program, which allows for movement of bison outside of the GYA (Department of the Interior 2014, Clarke et al. 2014).

Similarly, management of the brucellosis-affected National Elk Refuge/Grand Teton National Park herd requires collaboration of multiple state and federal partners. This herd is managed within the Final Bison and Elk Management Plan and Environmental Impact Statement for the National Elk Refuge/ Grand Teton National Park/ John D. Rockefeller, Jr. Memorial Parkway (Fish and Wildlife Service and National Park Service 2007). This plan details open hunting areas, including the National Elk Refuge. Hunters and visitors are encouraged to report apparently sick bison, and a subset of harvested animals may be sampled for disease testing.

Addressing Future Health Risks

Bison conservation and restoration efforts must consider the significance of disease in bison herds and apply a multi-jurisdictional, multi-stakeholder approach to the management of bison on large landscapes. Appropriate management actions will vary depending on the geographic location of the herd, contemporary disease threats, and historical disease surveillance data. Careful selection of individuals to establish new herds or to augment existing populations, as well as herd health monitoring of source and recipient herds, using appropriate diagnostic tools, will be needed to minimize the risk of introducing new or exacerbating existing diseases. Heightened disease surveillance, spatial-temporal separation of bison and other species, pre or post-movement disease testing, quarantine, and preventive treatments may be warranted (Gates et al. 2010). Additionally, knowledge of wildlife and livestock health in areas targeted for bison translocation is essential in decision-making to protect the health of wildlife and livestock alike.

Within the context and framework of creating resilient and sustainable wild bison populations, health protocols used in planning bison translocations must be implemented on a case-by-case basis while considering a variety of factors, including: 1) disease history and status of both the donor herd and the recipient herd; 2) disease history and status of wildlife and domestic species associated with the donor and recipient herds; 3) appropriate treatment for bison prior to transport; 4) current regulatory requirements for transport; and 5) post-release monitoring of translocated animals (Woodford 2000, Gates et al. 2010).

Enhancing wildlife health and maintaining thriving populations of wild bison require a dynamic and forward-thinking approach. Communication and cooperation with all affected wildlife and livestock health officials early in bison conservation and restoration efforts is critical for identifying disease regulations and specific testing requirements for transport (Gates et al. 2010). Such conversations must include thoughtful engagement of associated bison managers, DOI and state wildlife health professionals, State Veterinarians, APHIS, American Indian Tribes and intertribal organizations, and ultimately those who will be making final decisions on movement of bison. Through this approach, management priorities, potential disease concerns, and levels of acceptable risk can be clearly articulated, and decisions made in light of these factors.

Managing bison as a metapopulation includes some level of risk to wildlife health. DOI bureaus are therefore committed to using a team approach to develop appropriate bison health surveillance strategies, and to identifying potential source and recipient populations to meet genetic, demographic, and ecologic conservation goals. Additionally, we will apply the best available science to maintain or improve DOI bison health in support of species conservation and restoration.

THE SECRETARY OF THE INTERIOR
WASHINGTON

ORDER NO. 3410

Subject: Restoration of American Bison and the Prairie Grasslands

Sec. 1 **Purpose.** The purpose of this order is to enhance the Department of the Interior's (Department) work to restore wild and healthy populations of American bison and the prairie grassland ecosystem through collaboration among the Department's Bureaus and partners such as other federal agencies, states, Tribes, and landowners using the best available science and Indigenous Knowledge.

Sec. 2 **Authorities.** This order is issued under the authority of section 2 of the Reorganization Plan No. 3 of 1950 (64 Stat. 1272), as amended, and other applicable statutory authorities. Other authorities include the numerous ratified treaties and agreements between the United States and federally recognized Indian Tribes, along with the trust obligations owed by the United States to federally recognized Indian Tribes and their citizens.

Sec. 3 **Definitions**. Under this order, the term "American bison" means all subspecies of bison, also referred to as the American buffalo. The term "grassland," "grassland ecosystem," or "prairie grassland" means a landscape where the natural plant community is dominated by grasses that coevolved with bison. "Introgression" means the incidence of cattle genes in bison, owing to the legacy of intentional efforts to cross-breed bison and cattle in the early 1900s.

Sec. 4 **Background.** The American bison – a centerpiece of the Department's seal and designated as the U.S. National Mammal since 2016 – is inextricably intertwined with grassland ecology and American culture. The species once numbered 60 million in North America, with the population anchored in what is now the central United States. Many Indigenous cultures, especially in areas where the species was most abundant, developed strong ties with bison and relied upon them for sustenance, shelter, and cultural and religious practices. In the 19th century, bison were nearly driven to extinction through uncontrolled hunting and a U.S. policy of eradication tied to intentional harm against and control of Native American Tribes. By 1889, only a few hundred wild bison remained.

In addition to depriving Tribes of a critical resource and lifeway, the persecution of bison contributed to the decline of healthy grassland ecosystems and, eventually, to the Dust Bowl in the 1930's. The loss of the keystone species, coupled with land conversion, led to declines of other important grassland wildlife, such as migratory birds and pollinators. Indigenous peoples have long warned of the harm of removing bison from the land but to little avail.

Beginning in the early 20th century with the support of President Theodore Roosevelt, conservationists and scientists made a collective effort to restore the American bison. Since then, careful conservation and restoration efforts have increased the number of wild bison in the United States from fewer than 500 to more than 15,000. While the security of the species is a conservation success worth celebration, bison remain functionally extinct to both grassland systems and the human cultures with which they coevolved. Our attention and efforts must turn toward the ecocultural restoration of bison as native North American wildlife. Significant conservation work is necessary not only to ensure that bison will remain a viable species but also to restore ecosystem function, strengthen rural economies dependent on grassland health, and provide for the return of bison to Tribally owned and ancestral lands.

The imperative for ecocultural restoration is made even more urgent by climate change. Warming temperatures exacerbate the pressures on grasslands, with historic droughts, wildfires, and invasive species threatening the grassland ecosystems and the communities they support. The best science shows that returning bison to grasslands can enhance soil development, restore native plants and wildlife, and promote carbon sequestration, thereby providing benefits for agriculture, outdoor recreation, and Tribes. In addition, restoring bison and healthy grasslands can serve as a step toward national healing and reconciliation after centuries of federal policies designed to erase Native people and their cultures.

Of the approximately 15,000 wild bison in the United States, the Department manages 11,000 bison in herds across 4.6 million acres of U.S. public lands in 12 states. The Yellowstone National Park herd is the largest at approximately 4,800 animals. Most herds contain between 300 and 500 bison. Tribes have collectively restored an additional 20,000 healthy bison on Tribal lands, particularly in the Northern Great Plains and Intermountain states.

Federal herds are managed by individual system units (e.g., national parks and national wildlife refuges) but the overall conservation strategy is coordinated across the Department's bureaus through the Bison Conservation Initiative (BCI). The BCI was created in 2008, renewed in 2020, and is led by the Bison Working Group (BWG). The BCI represents nearly two decades of concerted coordination, investments in science-based management, and partnership development to advance the conservation of American bison. This includes working closely with stakeholders to promote herd health and to manage risks that diseases in bison may present.

Prior accomplishments serve as valuable touchstones and guidance for coordinated development of conservation approaches. Through this order, the Department builds on those accomplishments and reaffirms the commitment to the five goals of the BCI: wild and healthy bison herds, genetic conservation, shared stewardship, ecological restoration of grasslands, and cultural restoration.

Sec. 5 **A Framework for Restoring a Wild and Healthy Bison Population.**

    a.   A formal Charter for the Department's Bison Working Group (BWG) is hereby established (*see* Appendix I). All five bureaus with bison equities – the National Park Service (NPS), the U.S. Fish and Wildlife Service (FWS), the Bureau of

Indian Affairs (BIA), the Bureau of Land Management (BLM), and the U.S. Geological Survey (USGS) – will each identify one representative to serve on the BWG. Additionally, a seat on the working group shall be reserved for a Tribal leader.

b. Within 120 days of this order, the BWG will initiate formal Tribal consultation toward development of a Department Bison Shared Stewardship Plan. The plan will establish a comprehensive framework for American bison restoration, including strengthening long-term bison conservation partnerships. The Stewardship Plan will describe the Department's engagement with states, Tribes, landowners, and non-governmental conservation partners, and identify specific opportunities for the Department to lead or support the establishment of additional wide-ranging, healthy, and brucellosis-free, bison herds on federal and Tribal lands. A draft plan should be completed by December 31, 2023. The plan will adhere to the following principles:

   (1) Pursue restoration of wide-ranging herds on large landscapes to support ecological and cultural restoration by facilitating discussion among federal agencies, Tribes, states, and other partners.

   (2) Collaborate with states, Tribes, landowners, conservationists, and other interested parties toward shared bison stewardship that respects livestock health, private property rights, Tribal sovereignty, and state interests in wildlife management.

   (3) Ensure bison herd management is informed by the best available science, including Indigenous Knowledge and adaptive management techniques, and engage with scientific and Indigenous partners to fulfill natural, cultural, and human dimensions information needs.

   (4) Prioritize Tribally led opportunities to establish new, large herds owned or managed by Tribes and Tribally led organizations, and advance shared stewardship with Tribes on Federal land.

   (5) Manage bison health to address the risks that disease in bison may pose to human health, domestic animals, or other wildlife, and advance application of low-stress handling principles.

   (6) Restore and manage wild bison as native wildlife, and promote high levels of bison genetic diversity and minimize cattle introgression.

c. Within 120 days of this order:

   (1) BWG will begin work on a strategy, led by USGS, to ensure the long-term conservation of genetic diversity of federal bison and identify optimal approaches for populating new, healthy herds of wild bison. Because most bison on Federal lands live in relatively small, isolated, range- restricted herds, managing these populations as one single connected population will help restore effective gene flow among these bison herds, through translocation of bison, while minimizing cattle introgression. The

strategy will be developed using the best available science with flexibility to incorporate new types of genetic data. A draft strategy should be completed by December 31, 2023.

(2) BIA will establish a Bison Management Apprenticeship program, in collaboration with NPS, FWS, and the BWG. Tribes that manage bison herds on their own lands or through co-stewardship agreements will benefit from training and knowledge sharing to support talent and capacity in their communities, including opportunities for hands-on experience supported by parks and refuges. The apprenticeship program will include opportunities for Tribal youth to work at U.S. Fish and Wildlife Service refuges and national parks and learn a variety of bison management practices. Program development will include Tribal engagement and could include partnerships with Tribes, states, foundations, and non-profit organizations.

d. Within 90 days of this order, NPS will initiate discussions with Tribes and other conservation partners on developing a plan to increase quarantine capacity for bison from Yellowstone National Park to undergo disease testing in order to further increase both shared stewardship and the number of live bison transferred to Tribes.

e. BWG members will actively pursue bison restoration on Federal and Tribal lands where appropriate, support partner restoration efforts as authorities and resources allow, pursue opportunities with partner agencies for bison restoration on lands they manage, and allocate funding for BCI staff support, Shared Stewardship Plan development, science, and on-the-ground conservation action. Funding opportunities provided by the Bipartisan Infrastructure Law, the Inflation Reduction Act, and other sources as appropriate, will provide initial investments for priorities identified in the Shared Stewardship Plan, and may support additional bison habitat restoration, reintroduction, and necessary facilities work.

Sec. 7 **Implementation.** The Secretary is responsible for implementation of all aspects of this Order, in coordination with the BCI. This responsibility may be delegated as appropriate. This Order does not alter or affect any existing duty or authority of individual bureaus.

Sec. 8 **Effect of the Order.** This Order is intended to improve the internal management of the Department. This Order and any resulting report or recommendation are not intended to, and do not, create any right or benefit, substantive or procedural, enforceable at law or equity by a party against the United States, its departments, agencies, instrumentalities or entities, its officers or employees, or any other person. To the extent there is any inconsistency between the provisions of this Order and any Federal laws or regulations, the laws or regulations will control.

Sec. 9 **Effective Date.** This Order is effective immediately and will remain in effect until it is amended, superseded, or revoked, whichever occurs first.

Date: **March 3, 2023**

Secretary of the Interior

THE RETURN OF AN ODIOUS INVADER — FROM *THE WILDLIFE PROFESSIONAL*

September 21, 2018 by The Wildlife Society

Available at: https://wildlife.org/the-return-of-an-odious-invader/

Image: A Key deer with an apparent mild infestation of New World screwworms at the base of its right antler is coaxed in for treatment. ©USDA Wildlife Services

Cooperation to conquer screwworm and protect Key deer

Imagine happening upon an animal through a cloud of flies and the smell of decay, its body full of wriggling maggots as it walks around. Although this may sound like a scene from a science fiction story, it's not.

Resembling the common housefly, the New World screwworm (*Cochliomyia hominivorax*) possesses one terrifying difference: the fly's larvae consume live flesh, entering through any small wound that has broken the skin. The maggots tunnel under skin through muscle tissue and enlarge the wound, attracting more flies to lay eggs. An untreated infestation can kill the host within two weeks.

Although eradicated from the U.S. in the 1960s, a recent screwworm outbreak infesting endangered Key deer (*Odocoileus virginianus clavium*) meant that the odious invader was back. U.S. Fish and Wildlife Service biologists made the grim discovery when the subspecies of white-tailed deer (*Odocoileus virginianus*) began dying off in and around Key Deer National Refuge in the Florida Keys.

To protect American agriculture and preserve the iconic deer, emergency action was needed. Managing the threat required the coordinated and cooperative efforts of federal, state and local agencies to quickly contain the destructive insects.

Eradication of a killer

The New World screwworm, likely of South American origin, moved into North America by the early 1800s. With no way to control it, the livestock losses from the insect cost producers from Florida to California millions of dollars annually by the 1930s.

After an intensive research effort by the U.S. Department of Agriculture, the agency launched a national eradication program in 1957 that relied upon the mass release of sterilized male screwworm flies. The infertile flies were incapable of producing offspring with wild female flies, resulting in a rapid and species-specific population decline. The new control strategy — known as SIT for sterile insect technique — was successful in less than 10 years and resulted in the eradication of screwworms from both wildlife and domestic animals.

Given the huge losses screwworms can cause, the USDA extended the eradication program beyond the southern U.S. border to reduce the likelihood of its return. With the help of foreign cooperators, USDA's agency, the Animal and Plant Health Inspection Service (APHIS), worked to eradicate the insects from Mexico and Central America. By 2001, the effort was successful, providing an extensive buffer zone for the U.S. as well as protecting cooperator countries.

Today, USDA's international screwworm program maintains the spatial buffer as a precaution. Along with the Panamanian government, it co-sponsors the sustained release of 20 million sterile flies per week in the Darién Gap — a remote region along the Panama-Colombia border (USDA, 2017) — to help prevent the otherwise inevitable return of the screwworm flies. In case of an outbreak, the program's facility is also prepared to ramp up production levels to provide many more millions of sterile insects.

Despite this intensive program, sporadic screwworm reinvasions in the U.S. have always been a possibility.

Return from exile

USDA International Services raises sterile male flies as part of its sterile insect technique. When released, they prevent production of offspring with wild females. ©USDA Wildlife Services

In July 2016, USFWS staff began noticing a strange sickness in Key deer on Big Pine Key. Closer inspection revealed their ghastly condition — many animals had open wounds infested with flesh-eating maggots.

Biologists scrambled to identify the cause. Coordinating with entomologists at the USDA and the University of Florida, USFWS sent samples to the agency's lab for analysis. On October 3, 2016, USDA epidemiologists publicly confirmed an active outbreak of New World screwworms in the Florida Keys — the state's first in 50 years. A quarantine zone to reduce the chances of the outbreak spreading was quickly established on the island.

APHIS was prepared for just such an event. It supports a highly trained staff that is ready to respond to outbreaks. The team hit the ground quickly once the quarantine was announced, implementing a screwworm emergency action plan developed years before and regularly updated with new information on methods and risks.

Mobilization

In addition to the USFWS and USDA, the Florida Fish and Wildlife Commission, Florida Department of Agriculture and Consumer Services, and Monroe County—where the Keys are located — stepped up to participate. Each agency brought its own specialized expertise and personnel to the outbreak zone. A unified incident command center was set up to coordinate the efforts and help ensure consistent leadership.

Dozens of USFWS staff from other parts of the country came to support the effort. They worked out of a second command center focused on the deer protection efforts at the refuge and community efforts.

Close inspection of potential infestations and progress of past treatments was possible while hand-feeding medicated bait to habituated deer on Big Pine Key. ©USDA Wildlife Services

USDA sent a team of first responders from its Wildlife Services, Veterinary Services and International Services programs. The eight wildlife disease biologists from the National Wildlife Disease Program, Surveillance and Emergency Response System had a history of working together and experience with incident-specialized wildlife management situations. Their regular duties include tracking, monitoring and removing urban deer populations; and they have specialized training to deal with wildlife disease events — a combination of talents ideally suited for heavily developed parts of Big Pine Key.

Their public outreach experience also proved to be invaluable. Beyond working with the deer and cooperating agencies, the biologists also coordinated with a network of several hundred citizen volunteers committed to saving their beloved Key deer.

When the team arrived, they found that mammals other than Key deer had been infested with screwworms. The discovery led Florida agriculture officials to immediately quarantine the Florida Keys and establish a mandatory checkpoint on Key Largo, the gateway to the Florida peninsula. A check point was set up to inspect vehicles for live animals to ensure no infested animals inadvertently left the area. USDA and Florida Department of Agriculture and Consumer Services veterinarians at the checkpoint would ultimately inspect 16,902 animals during the quarantine.

Sterilized fly release began as quickly as USDA's Panamanian facility could boost production. The first shipment reached the Keys on October 10, only seven days after the outbreak was officially declared. Over the course of the eradication effort, over 150 million sterile flies would be released in the affected areas.

Saving an endangered species

Livestock feed troughs — shortened and outfitted with rollers containing an antiparasitic drug — created self-medicating stations for remote and more wary deer. ©Kate Watts, U.S. Fish and Wildlife Service

In the late 1940s, only 50 Key deer were left. Now with a population of about 1,000 animals, they were still considered critically endangered. The outbreak occurred during the rut season, which meant bucks with open wounds were the primary casualties. The team knew, however, that control and eradication before fawning was especially critical because of the potential impact on does giving birth and just dropped fawns.

While every effort was made to save the lives of infested animals, some were too far gone; and field staff needed to make tough decisions and humanely kill individuals to prevent further suffering and limit the spread of infestations. USFWS and Florida Wildlife Commission veterinarians treated mild and moderate wounds whenever possible. But first, the deer had to be found and captured.

WS staff supported this mission, conducting regular patrols while responding to public tips to a USFWS hotline. Their target response time to a possible infested animal was 15 minutes or less. On location, they maneuvered close enough to view possible wounds through binoculars. Depending on the nature of the wounds and the animal's behavior, veterinarians were called in to treat the animal. Using their experience in tranquilizing and handling large animals, WS biologists also supported the field treatment activities, assisting the veterinarians in on-the-spot surgical procedures that ultimately saved many infested deer. The team removed the maggots, cleaned and dressed the wounds and marked the animals before releasing them. These treatments were all accomplished in the field, often under difficult conditions on dark, swampy terrain or in view of the concerned public. Decisions on how to treat screwworm-infested deer were often difficult. Some in obvious extreme stress and pain with baseball-size holes in their flesh — signs of advanced muscular and vascular damage — had to be humanely killed. Lethal removal of an animal is always a difficult decision, but even more so given the public's strong emotional attachments to many individually recognizable deer. Discharging a firearm in populated areas also leaves no room for error. In these situations, WS biologists carefully evaluated their options and guided the affected animal to an appropriate area where they could fire a single, effective shot from a suppressed firearm. Each decision prioritized conducting lethal removal in a safe, humane, and publicly acceptable manner.

The Incident Command formulated a plan to help prevent additional infestations. Biologists and volunteers treated deer preemptively by hand-administering feed containing Doramectin, an anti-parasitic veterinary drug. It was also administered therapeutically to mildly infested individuals. Some deer living in populated areas of Big Pine Key had lost their fear of humans, so they readily took the feed.

In instances where a small herd contained one or two lightly infested individuals needing medication, understanding deer behavior was important. WS biologists drew upon their experience with urban deer in order to manipulate the herd in a way that allowed feeding the targets without causing the group to flee.

Most affected Key deer, however, inhabited the trackless wilderness of the National Key Deer Refuge — about 9,200 acres of multiple undeveloped islands composed of a mosaic of salt marsh, brackish wetlands, dense tropical mangrove and rocky pine forests. Tracking the deer through these areas was futile. Biologists could only catch a glimpse before the skittish animals disappeared into the mangroves. A better approach was needed.

For the refuge's inaccessible backcountry, incident managers devised a passive treatment system adapted from USDA Veterinary Services' fever tick work with cattle in Texas. USFWS set up Doramectin-coated rollers in front of feeder stations, forcing the deer to rub against the rollers as they ate. Twenty-seven stations spread across multiple remote islands served as the main method to administer the drug to remote populations.

Innovative tactics

Wildlife Services wildlife disease biologists Jay Cumbee and Wes Gaston work with a veterinarian and biologists from the Florida Wildlife Commission and USFWS during field treatment of an infested buck. ©USDA Wildlife Services

Once everything was in place, the coordinated eradication tactics started working. Between the release of sterile flies, treatment of infested animals and dispersal of medicated feed, severe screwworm cases declined. In a single month, the team's priorities shifted from euthanasia to treatment, and then to monitoring and verification.

By late November, WS biologists confirmed that treated animals were healthy. These previously captured and tagged deer now served as "live sentinels." They created a sentinel deer list and checked each animal at least every other day to ensure they remained maggot-free, a sign that the antiparasitic treatments were working and flies were not reinfesting the animal.

The team also took another unconventional approach to preserving the endangered deer. With its perilously small gene pool, each death represented not just the loss of an individual, but a major deletion from an already limited amount of genetic diversity. To help preserve the pool, biologists collected semen from dead male deer for breeding efforts should it become necessary for survival of the species. They also collected tissue samples to test for chronic wasting disease and blood to test for other pathogens that could, if missed, one day threaten the deer.

Unconditional surrender

On January 6, 2017, USFWS humanely removed the last screwworm-infested deer on Big Munson Island.

Wildlife Services wildlife disease biologist Wes Gaston prepares the anti-parasitic Doramectin for bait before feeding to the deer. ©USDA Wildlife Services

But that same month, an affected animal outside the quarantine area turned up near Homestead, a town near the tip of Florida and over 70 miles from the original outbreak zone. USDA officials verified screwworm as the cause of infestation in the stray dog, which was quickly isolated and treated locally. The implications, however, were dire, and highlighted the risk of the flies spreading beyond the Keys.

The origin of the dog's infestation could not be determined, a major concern for officials. To protect against further spread of the flies, the interagency team launched a monitoring effort and expanded the release of sterilized male flies to the Florida mainland. The quick identification and response to this anomaly so far outside the target management zone demonstrated how public education efforts across and outside Florida worked to limit the invasive pest's spread and impact on other communities.

On March 23, only five months after the outbreak was confirmed, the agency declared that screwworms had been eradicated in Florida.

The toll had been heavy on the endangered Key deer: 135 deer were killed by the screwworms or euthanized due to an advanced infestation. The outbreak had killed well over 10 percent of the estimated 1,000 Key deer. In 2016, USFWS began a collaring and telemetry project to help assess the impacts on the deer population. It also plans to continue passive monitoring via trail cameras indefinitely (Parker et al 2017).

Keeping a watchful eye

©USDA Wildlife Services

The swift interagency effort to eradicate the New World screwworm may have saved the Key deer from extinction in the wild. With a narrow range and small gene pool, the population likely would not have survived the loss of many more individuals during the outbreak.

Six months later, the species faced another threat — a direct hit by Hurricane Irma in September 2017. With its population already smaller, the beloved deer might not have walked out of the storm's devastation if not for coordinated interagency action to wipe out the odious invaders.

This real-life story of a potentially devastating invasion of a tiny endangered deer ended well, thanks to the readiness and specialized training of an interagency team that came together to safeguard our country's wildlife resources.

Learn more

For more information on screwworm eradication and response, see the USDA Story Map and Investigation into Introduction of New World Screwworm into Florida Keys and these two reports, Florida Key Deer Screwworm: Final Report Phase 1 (Fall 2016) and Phase II (Spring/ Summer 2017).

Excerpts from: Kuisma E., et al., Long-term wildlife mortality surveillance in northern Congo: a model for the detection of Ebola virus disease epizootics, Phil. Trans. R. Soc. B 374: 20180339 (2019). http://dx.doi.org/10.1098/rstb.2018.0339

1. Introduction

Ebolavirus (Zaire ebolavirus; EBOV) has caused high-mortality outbreaks in both humans and wildlife. First identified in 1976 in the Democratic Republic of Congo (DRC), recurrent epidemics have impacted central and western African regions. The 2014–2016 West African epidemic resulted in over 11 000 human deaths and was declared a Public Health Emergency of International Concern, requiring extensive international response. In the central African region, smaller scale outbreaks have occurred frequently over the last decades in Gabon, the Republic of Congo (RoC) and the DRC . . .. Aside from the devastating health effects, the EVD epidemics have pronounced socio-economic impacts.

EBOV has had a similarly devastating impact on African great ape populations. Concurrent with the human EVD epidemics in the mid-1990s and early 2000s, biologists reported mass die-offs of western lowland gorillas (Gorilla gorilla gorilla) and chimpanzees (Pan troglodytes) in RoC, Cameroon and Gabon, and EBOV was detected in a number of these carcasses . . .. [I]n some areas local populations experienced mortality reaching 91–96% . . .. In the light of these events, the International Union for Conservation of Nature subsequently classified the western lowland gorilla as critically endangered and chimpanzee as endangered, largely owing to the catastrophic potential of infectious diseases, EBOV in particular, on already threatened populations. Addressing infectious disease threats has since become an indispensable part of the agenda for great ape conservation in the central African region, which hosts the majority of the world's remaining great apes.

EBOV spills over into the human population through direct contact with infected wild animals . . .. Gorillas, chimpanzees, monkeys, duikers, wild hogs and bats all have suspected epidemiological links to human outbreaks. Consumption of carcass meat for food is a common practice and the hunter communities are inherently at a risk of EBOV exposure. Environmental and socio-economic factors further exacerbate the zoonotic spillover risk. Outbreaks of emerging zoonotic diseases are also increasingly common. Extractive industries and expanding human encroachment into wild areas increase the close interactions between human and wildlife populations. Ensuing ecosystem impacts can affect disease ecology, simultaneously heightening the risk of disease spillover from natural host species to other wildlife or to human populations.

For these reasons, early detection of a zoonotic threat, such as an EBOV spillover event, is an important consideration for public health. The expanding spatial connectivity and mobility of the central African population mean that epidemics, like EVD, can spread rapidly. Combined with increasingly large urban populations, such events can overwhelm the public health infrastructure and response efforts. Early detection can limit such catastrophic spread and as wildlife epizootics often precede human epidemics, disease surveillance in wildlife presents an inherent advantage. It may enable detection of zoonotic pathogens before the pathogens have an opportunity spillover into human populations and thus the deployment of control measures. However, environmental conditions can present a notable challenge to wildlife surveillance efforts. In central Africa's extensive and dense forest, active surveillance of wildlife mortalities is difficult and expensive. During previous EVD epizootics, passive surveillance by hunters and field biologists generated the majority of carcass reports, leading to detection of EBOV in

wildlife before human outbreaks. Carcass sampling has yielded the highest prevalence of virus detection, over 150 times more than live capture.

Coupling surveillance with community education and outreach that addresses the individuals most likely to encounter risk at the human–wildlife interface can effectively impact both the spillover and epidemic spread. In the Congo basin where a large proportion of the rural population relies on bushmeat hunting as a primary source of protein, a culturally sensitive educational campaign can encourage a behavioural change that may in turn reduce the risk of zoonotic disease spillover. Targeted education campaigns aimed at the high-risk population groups can similarly reduce the incidence and the consequences of an outbreak.

Here, we describe the design and implementation of a community-based wildlife mortality surveillance network originally designed for early detection of EVD epizootics, and combined with an educational community outreach programme. We partnered with the RoC Ministry of Health to implement this low-cost and wide-coverage network, and explain the role this community-based surveillance system has played as an early warning system for a pathogen affecting both human and wildlife health. We also examine whether reporting great ape and other mammal carcasses by local communities performed effectively as a wildlife mortality surveillance network and could assist with a quickened public health response . . ..
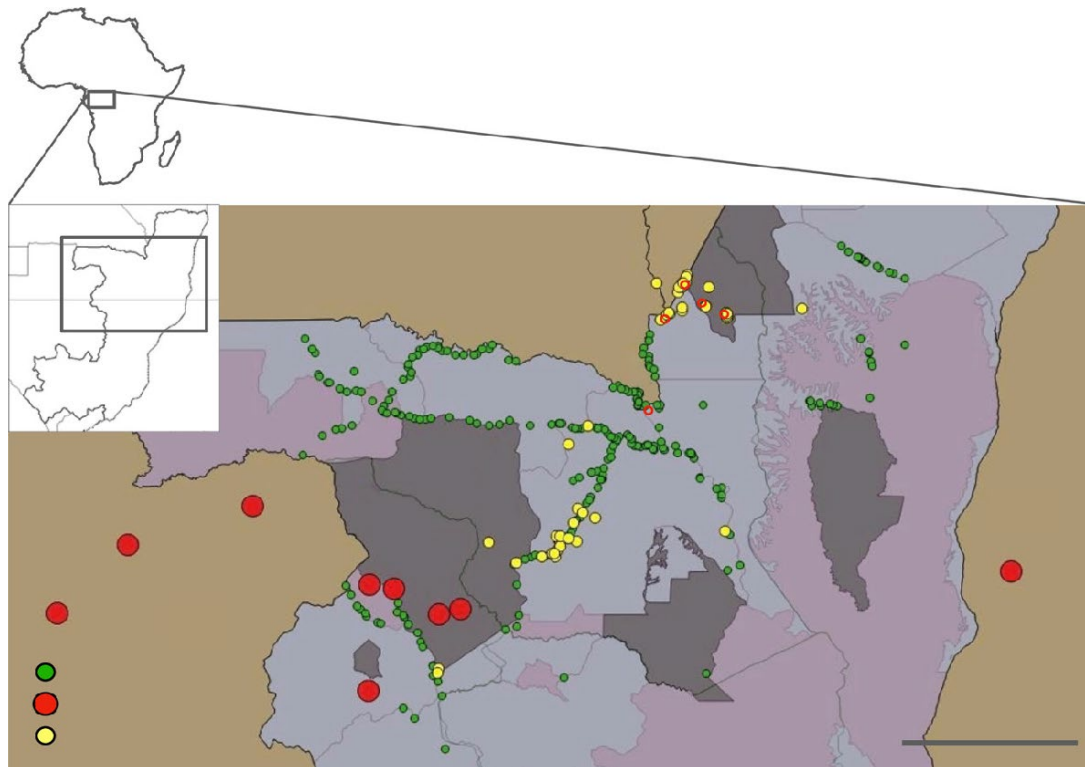
Figure 1. Community-based carcass surveillance network in the RoC. Confirmed EBOV outbreaks in the northern DRC-RoC-Gabon-Cameroon region (large red dots), the villages visited for educational outreach between April 2008–September 2018 (green, n = 268) and the GPS locations of carcasses sampled and analysed for the presence of EBOV (yellow). Protected areas are highlighted in grey. The sampling station (red circles) distribution reflects partly the accessibility of the terrain.

2. <u>Framework for the wildlife mortality surveillance</u>

The framework of our wildlife disease surveillance in the RoC comprises three core elements. These include: the establishment and maintenance of a wide-coverage wildlife mortality reporting network; the building and maintenance of capacity for safe carcass sampling across that network and rapid response to wildlife mortality reports, including fast diagnostics for the detection of EBOV and reporting of results back to local communities. Educational outreach was incorporated to reduce the risk of a zoonotic spillover event and spread and to explain the purpose of the wildlife mortality surveillance network to its rural community partners. Coordination and a clear communication strategy across the entire surveillance operation were essential . . ..

3. <u>Establishment and maintenance of a wide coverage wildlife mortality reporting network</u>

Wildlife mortalities are easily unnoticed in tropical forests and environmental conditions facilitate rapid decomposition of carcasses. Many previous EVD spillover events occurred in sparsely populated areas with low levels of human activity, yet these are the high-risk areas of key interest for surveillance. Active surveillance conducted for the purpose of locating carcasses is time-consuming and prohibitively expensive for large areas. Meanwhile, the main sources of carcass reports during previous epizootics were local hunters and researchers. By encouraging cooperation with local communities and existing 'boots on the ground' that regularly cover a wide geographical area, passive surveillance has the potential to be very cost-effective.

We partnered with the RoC Ministry of Health to launch a community outreach campaign designed to build a wildlife mortality reporting network across northern RoC. By engaging with hunter–gatherers in forests to collectively form a wildlife mortality reporting network, we also addressed a high-risk interface for zoonotic spillovers. Combining an educational campaign to promote behavioural change in these populations directly targeted the risk behaviours leading to spillover events . . ..

4. <u>Building capacity for rapid and safe carcass sampling across a wide geographical area</u>

. . .

We trained 16 project staff based at different locations across northern RoC on a two-person protocol for minimal exposure sampling of wildlife carcasses . . .. Key characteristics of the protocol are multiple layers of redundant biosafety and a buddy system whereby the samplers oversee each other's tasks, donning and doffing of the personal protective equipment (PPE), sampling and disinfection. Rather than requiring solid tissue specimens or the use of sharp objects and substantial equipment, this method relies on minimally invasive swab sampling and a deactivating buffer that minimizes the samplers', the downstream handlers' and transporters' exposure risk and results in a high quality diagnostic sample.

The training included theoretical information on the history, ecology and dynamics of EBOV and the nature, epidemiology and control of EVD outbreaks in humans. Practical teaching consisted of repeated practice of the protocol and scenario-based training (figure 2). Refresher training courses were organized to available personnel and less experienced samplers were chosen to accompany the experienced samplers on sampling missions to gain experience. Our project bases in Brazzaville, Ouesso and Bomassa, and research camps in the Nouabale´-Ndoki National Park (NNNP) (Mondika, Goualougo and Mbeli) were equipped with ready to-deploy carcass sampling kits to aid rapid mobilization of the sampling team. The kits included pre-packaged single use PPE, sampling materials and the reusable

equipment dedicated to carcass sampling (figure 2). As long intervals can occur between carcass events, each kit included a complete guide with instructions to refresh samplers on the steps between the first report of a carcass event and transporting the sample after collection to facilitate fast diagnosis.

Figure 2. Clockwise from top: deployable complete carcass sampling kit with instructions; teams practice sampling during training; scavenged and decomposed remnants of a week-old juvenile gorilla carcass.

5. Rapid response to wildlife mortality events and fast diagnostics for the detection of Ebolavirus.

On detection of a carcass, a village member or partnering organization contacted us, usually by telephone. In 2017,we created a dedicated carcass reporting hotline connected to a central office to facilitate clear and timely reporting. In the affiliated protected areas reporting was done via satellite or

VHF radio communications to central control rooms within the park from where the information was then relayed via telephone to us. A report immediately initiated a carcass sampling mission. Location details of the carcass such as reporting village or GPS coordinates (depending on the source of the report) were recorded. The trained carcass responder team confirmed further details upon sampling and photographing the carcass. Sampling visits were used to reinforce educational messages and the relationship between the village communities and the surveillance team.

. . .

In total, between November 2006 and March 2018 we responded to 58 carcass reports. Of these 21 were reported by village community members; 10 by the rangers patrolling the protected areas and hunting zone peripheries of NNNP and Odzala-Koukoua National Park; and 26 by the research and surveillance staff during missions in the protected areas and peripheries. We sampled carcasses from gorillas (n ¼41), chimpanzees (n = 10), duikers (n = 2) and other mammal species (n = 4). The sampling teams mobilized and sampled the carcasses within 1–2 days of receiving the report.

. . .

A molecular testing laboratory capable of confirming the presence or the absence of EBOV in a carcass sample is a prerequisite for an effective disease surveillance system. Further, fast diagnostic turnaround time is essential to alert local and government public health officials and initiate an effective early response . . .. Strengthening the in-country diagnostic capacity is fundamental for establishing a reliable and efficient early warning surveillance system . . .. The absence of human outbreaks in RoC since our surveillance was implemented is in agreement with our EBOV negative carcass findings . . ..

[E]valuating our outcomes to date helps highlight strengths, weaknesses and further opportunities. The educational agenda was incorporated into the programme to explain the purpose of the surveillance and to provide reliable information on preventing spillover within the high-risk population. Communities received behavioural tools that enabled individuals to reduce their own risk of infection, but the extent of behavioural change has not been systematically studied. While difficult to demonstrate, the education and outreach work in northern Congo may have succeeded in delivering a degree of behavioural change in the hunter communities that in turn may have prevented zoonotic spillovers from occurring between 2005 and the present. In the future, an accurate assessment could involve a systematic sociological survey alongside outreach and pre- and post-assessments of the outreach itself. Contrasted with the high costs of EVD outbreak containment, early detection is probably a cost-effective tool to strengthen outbreak preparedness efforts and mitigate human outbreaks . . ..The surveillance was built on existing core conservation programming with strong veterinary expertise, infrastructure, capacity and well-trained field personnel distributed across the surveillance area . . ..

Finally, such wildlife mortality surveillance systems can serve a dual purpose. Acquisition of comprehensive health information for free ranging great apes and other mammals, and the implementation of disease investigations is challenging, partly owing to the remoteness of the forested regions. Parallel to the targeted EBOV surveillance, the reporting network can offer access to information on the causes of wildlife mortalities . . ... The mortality reporting network could be used to answer questions of veterinary health and conservation interest as well as pathogen discovery for yet unknown pathogens of One Health interest.

Project Phase 2.3 – Briefing Paper, Subtopic: Non-Consumptive Uses
Lead Author: Sandy Rabinowitch

I.   Introduction

Non-consumptive uses of protected areas are those every-day uses and activities by visitors which we think of as typical, such as hiking, photography, wildlife observation, picnicking, and camping. When properly managed, these activities do not injure, the health or values of an area's resources. A few decades ago, a phase was coined which says "Take only pictures (or memories), leave only footprints"[1] This phrase epitomizes non-consumptive uses when properly carried out.

II.   Overview

There are many individual kinds of non-consumptive uses in protected areas. Many visitors engage in several of these activities on a visit. Many are common and well known, while a few are unique to a specific area. Many uses are "allowed or authorized" by regulations of the protected area system or by the single protected area. It is important for protected area managers to consider regulating non-consumptive uses.   Regulations are usually advertised to the public via brochures, and posting at visitor centers, on signs and bulletin boards and at picnic areas; and in campgrounds. Depending upon an area's resources, its founding legislation and the nature of visitor use, a non-consumptive use might not need to be regulated. The decision to regulate these uses is typically made on a case-by-case basis because all protected areas are not the same, and resources and potential harms from uses differ from area to area.

An area's non-consumptive uses are usually influenced by an area's geography, geology, flora, fauna and any unusual or unique features e.g., caves, tors, sinkholes, glaciers, etc. The examples (See Table 1) in this paper list some examples of common uses and typical resource protection issues as well as a sample of regulations to manage the non-consumptive use in U.S. protected areas. These uses, resource issues, and regulations should translate to many protected areas around the globe.

<u>Why allow non-consumptive uses</u>?

Most protected areas allow public use of the areas. Visitors can enjoy the experience and learn from their visit and are likely to be supportive of protected areas if they have opportunities to enjoy them.

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[1] This phase is attributed in to the Baltimore Grotto a cave exploring group in the city of Baltimore in the State of Maryland.

There is a growing body of scientific and medical research that suggests that use of protected areas can contribute to improving people's health. See: https://pubmed.ncbi.nlm.nih.gov/?term=forest+bathing> and https://globalwellnessinstitute.org/wellnessevidence/forest-bathing/em>.

Why regulate non-consumptive uses?

There are several answers: To protect a resource from harm; to provide for public safety; and to provide a quality visitor experience. Visitors may not always be aware that their behavior can negatively affect resources or be dangerous to themselves or others.

Regulations can help prevent human interference with animal behavior such as breeding, raising young and feeding. Regulations can also prevent soil erosion, destruction of vegetation and provide for public safety and a quality visitor experience.

Table 1. Examples of Non-consumptive Uses,
Possible Resource Protection Issues,
And Example Regulations:

Use	Possible Protection Issues	Example Regulation Code of Federal Regulation (CFR)[2]
Hiking	Soil erosion, water pollution, destruction of vegetation	36 CFR 1.5
Backpacking	Soil erosion, human waste management, backcountrty water quality	36 CFR 1.5
Wildlife viewing	Disturbing/harming wildlife, public safety, wildlife threats to visitors	36 CFR 13.920
Birding	Disturbing animal behavior, feeding human foods to wildlife	36 CFR 13.920
Photography	Disturbing wildlife, public safety, wildlife threats to visitors	36 CFR 13.1206
Night sky viewing/star gazing	Introducing unwanted light sources in designated dark sky areas	See: https://www.flagstaff.az.gov/4042/International-Dark-Sky>

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[2] See: https://www.govinfo.gov/app/search/%7B%22query%22%3A%2236%20CFR%202.1%22%2C%22offset%22%3A0%7D> Then click "Search", then insert the CFR number (for example – 36 CFR 1.5). Then click ENTER/Return on your computer. Each section will be found.

Picnicking	Group size, unwanted noise, human waste, fires, destruction of vegetation	36 CFR 2.11
Mountain Climbing	Visitor safety, human waste management, Search & Rescue Issues (SAR)	36 CFR 13.910
Camping	Acceptable site location, human waste, water pollution, destruction of vegetation, soil erosion, fires	36 CFR 2.10
Bicycles	Soil erosion, user & wildlife conflicts, public safety, conflict with wilderness management	36 CFR 4.30
Motorized vehicles:	Public safety, soil & vegetation damage	36 CFR 4.1-4.23
Snow machine use	Sufficient snow depth to protect vegetation & soils	36 CFR 2.18
Aircraft	Safe landing sites, noise, user conflicts	36 CFR. 2.17
Pets	Disturbance to wildlife, pet feces, water quality, disturbance of other visitors	36 CFR 2.15
Skiing, snowshoeing, ice skating etc.	Public safety, exposure to severe weather conditions	36 CFR 2.19
Smoking	Trash, fires, smoke exposure to other visitors & staff	36 CFR 2.21
Boating	Public safety, noise, water pollution	36 CFR 3.1-3.19
Cultural resource viewing	Protection of cultural resources sites & objects	36 CFR 2.1 (a) (iii)
Alcoholic beverages (consumption)	Public disturbances, public safety	36 CFR 2.35; 2.34
Festivals/events	Public safety, human waste, garbage, destruction of vegetation, soil erosion, fires	36 CFR 2.5036

<u>To Regulate or Not - How to Decide</u>?

Understanding the "purpose" of a protected area and its key resources is the first step, e.g., why the area was designated. Next, consider what uses might occur in a protected area. Finally, understand clearly how your protected area regulatory system works. Are all uses already <u>allowed</u> unless specifically prohibited? Are all uses already <u>prohibited</u> unless specifically allowed? Is there some combination of these two approaches, or are there simply no regulations at this time? Each area's resources should be evaluated for the potential of visitors to do harm. Is there a high, medium or low probability that visitors can do harm? Regulations that are reasonably expected to protect resources are probably a good idea; however, unneeded regulations are often a waste of staff time, a waste of public money and can anger and frustrate users.

<u>Two United States Agency Approaches & Differences</u>:

U.S. Fish & Wildlife Service (FWS):

"Not all protected areas are ever opened to non-consumptive uses. For example, a U. S. National Wildlife Refuge, upon being established is specifically closed to all uses, consumptive and non-consumptive until and unless the Manager determines that such uses are both appropriate and compatible with the purposes for which the Refuge was established."[3]

The FWS has concise regulations that govern non-consumptive uses in wildlife refuges. These regulations provide broad guidance while much detail is filled in as managers write management plans and then operate the refuges. A few key examples are presented below. (Sections listed below are found in Title 50 Code of Federal Regulations (CFR), chapter I, Subpart C: (50 CFR 26))

§ 26.31 General provisions.

Public recreation will be permitted on national wildlife refuges as an appropriate incidental or secondary use, only after it has been determined that such recreational use is practicable and not inconsistent with the primary objectives for which each particular area was established or with other authorized Federal operations.

§ 26.32 Recreational uses.

Recreational uses such as, but not limited to, sightseeing, nature observation and photography, interpretive centers and exhibits, hunting and fishing, bathing, boating, camping, ice skating, picnicking, swimming, water skiing, and other similar activities may be permitted on national wildlife refuges. When such uses are permitted the public will be notified under the provisions of this subchapter C.

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[3] Tom Reed, USFWS Refuge Manager email (2/13/2023) to Sandy Rabinowitch, (NPS ret.)

(a) Special regulations shall be issued for public use, access, and recreation within certain individual national wildlife refuges where there is a need to amend, modify, relax or make more stringent the regulations contained in this subchapter C. The issued special regulations will supplement the provisions in this part 26.

(b) Special recreational use regulations may contain the following items:

(1) Recreational uses authorized.

(2) Seasons, period, or specific time of use.

(3) Description of areas open to recreation.

(4) Specific conditions or requirements.

(5) Other provisions.

(6) Special regulations for public use, access, and recreation are published in the daily issue of the Federal Register and may be codified in the Code of Federal Regulations. They shall be issued in compliance with procedures contained in the Departmental Manual.

National Park Service (NPS):

Non-consumptive use regulations for the NPS are very detailed. Although the area Superintendent has discretionary authority, they must still manage in a manner consistent with the detailed national and area specific regulations. NPS non-consumptive use regulations begin at Title 36 Code of Federal Regulations (CFR) *Parks, Forests and Public Property Part 2 Resource Protection, Public Use and Regulation;* section 2.1 deals with protection of natural, cultural and archeological resources nationally. This long list of regulations (sections 2.1 – 2.61) enumerates prohibitions or limitations on public use. (For example, prohibited are: *possessing, destroying, injuring, defacing, removing, digging, or disturbing from its natural state…living or dead wildlife or fish…antlers…nests…plants, nonfossilized and fossilized paleontological specimens, cultural or archeological resources…minerals.)* See: https://www.ecfr.gov/current/title-36/chapter-I/part-2>. There is no broad prohibition of non-consumptive uses as noted above in the U.S. FWS regulation.

Boating Activities are addressed in Part 3 *Boating and Water Use Activities*, (sections 3.1 – 3.19.) See: https://www.ecfr.gov/current/title-36/chapter-I/part-3> Vehicle Use (including bicycles) is in *Part 4 Vehicles and Traffic Safety* (sections 4.1- 4.31.) See: https://www.ecfr.gov/current/title-36/chapter-I/part-4>.

Each of the more than 400 individual units of the National Park System can also have area specific regulations that amend the system-wide regulations and or add to limits or requirements for visitors. See: *Part 7 Special Regulations, Areas of the National Park System,* See:

https://www.ecfr.gov/current/title-36/chapter-I/part-7> Superintendents are given much discretion to manage public uses, the details of which are explained in 36 CFR 1.5. See: https://www.ecfr.gov/current/title-36/chapter-I/part-1/section-1.5>

Further, 36 CFR 1.7 requires the Superintendent to make substantial effort to inform the public of specific regulatory actions that are implemented. See: https://www.ecfr.gov/current/title-36/chapter-I/part-1/section-1.7>

Code(s) of Ethics:

Several government agencies, private groups and businesses have outdoor "Codes of Ethics" that are of value to study. Such codes may be useful tools to educate users about protected areas resources while using them in a non-consumptive manner.

One such example is the widely used "Leave No Trace" code used by many countries, government agencies, Non-Governmental Organizations and Outdoor businesses. This code fits many typical non-consumptive uses including hiking, camping, wildlife watching and general use of protected areas. There are seven basic principles which are:

1. Plan Ahead and Prepare
2. Travel and camp on durable surfaces
3. Dispose of waste properly
4. Leave what you find
5. Minimize campfire impacts
6. Respect wildlife
7. Be Considerate of other visitors

See:https://www.nps.gov/articles/leave-no-trace-seven-principles.htm>

III. Conclusions and Universal Best Practices

1. Managers of protected areas should consider known and potential non-consumptive uses and the possibility of regulating these uses to protect resources.

2. Visitors can intentionally or unintentionally harm an area's natural and cultural resources. Although education (via interpretation) is an important tool for managers, non-consumptive use regulations might be needed.

3.When practical, regulation of non-consumptive use should be done on system-wide basis. This results in consistency for the public and relieves the individual area manager(s) from allocating staff time and area funds to write regulations.

4. When system-wide regulations are not practical or are insufficient, individual area regulations should be considered and implemented as needed.

5. When regulations are implemented, follow the system's administrative procedures for doing so. It is helpful to establish procedures for implementing regulations and criteria for monitoring their success. This provides for a consistent process and application of your evaluation criteria. Keep written records of your administrative work. Make your procedures and criteria known to the public.

6. Whenever non-consumptive use regulations are implemented the public should be made aware of these regulations in several ways. Examples are via interpretive programs, in brochures, pamphlets, on signs, posting on bulletin boards, in picnic areas and in campgrounds. Law enforcement staff might need to interact with the public to help bring about compliance.

7. Periodically review the need for non-consumptive use regulations. Does something need to be added because of a real or increased potential harm to resources? Or has a threat receded and is a regulation no longer needed?

U.S. DEPARTMENT OF THE INTERIOR,
INTERNATIONAL AFFAIRS OFFICE

BRIEFING PAPER FOR MUSEUM OFFICIALS
OF THE REPUBLIC OF GEORGIA

<u>MANAGING ARCHIVES</u>

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April 30, 2023

Over the past 250 years, archivists have developed sets of standards and principles for managing archival holdings that have achieved professional acceptance throughout the world, and which the archival community universally regards as "Best Practice." The "Holy Trinity" of archival management encompasses Provenance, Hierarchical Organization, and Original Order. The physical arrangement, description, and reference servicing of archival holdings all proceed from these three fundamentals. The management and use of archival holdings would be impossible without them.

Even before these fundamental principles can be employed in the management of any body of archival materials, archivists must decide whether that body of materials has sufficient significance to be retained at all. Thus, the archival profession has also developed a series of tests that can be applied, whereby a body of materials being considered for permanent retention may be evaluated according to Evidential Value, Informational Value, Legal Value, and Intrinsic Value.

There are numerous other guidelines that archivists should follow. There are standards for environmental controls, security considerations, acceptable levels of light exposure, boxing and foldering, labeling, conservation techniques, and so forth. But the seven great pillars cited above – Provenance, Hierarchical Organization, and Original Order (for managing archives), and Evidential Value, Informational Value, Legal Value, and Intrinsic Value (for determining worthiness) – furnish the intellectual basis for all archival work. This paper will discuss these pillars and illustrate them through several examples.

I.   <u>THE DIFFERENCES BETWEEN ARCHIVAL AND CURATORIAL PRINCIPLES</u>

Archival materials cannot be managed in accordance with curatorial principles.

Archival methodologies, in fact, are often the exact opposite of curatorial methodologies. Archival materials should not be handled on a document-by-document basis, analogous to the manner in which curators handle museum collections on an object-by-object basis. Item-level cataloging, classification according to taxonomic categories, and physical storage according to item type or date of item accession – all of which are standard in curation – are inappropriate for archives.

In fact, attempts to manage archival materials according to curatorial methodologies can be not only expensive but also destructive. A single cubic foot of archival materials might contain a thousand individual documents, whereas a similar volume of space might include fewer than a dozen museum objects. The cost of cataloging individual documents in the same manner as individual museum objects usually are cataloged would be prohibitively expensive. The alternative of lot cataloguing, another staple of curation, would likewise be wasteful and ineffective for archives.

Much more important than the cost factor is the way in which individual handling of documents can destroy archival holdings. Documents can be used effectively, understood accurately, stored properly, and located efficiently only if they are managed within context – that is, according to provenance and original filing schemes. Failing to handle, arrange, and describe archival materials in this way can reduce archival holdings to the anarchy of countless disconnected individual documents that inevitably will impede or even thwart any attempt to make sense of them, much less conduct useful research in them.

But it should be emphasized that archival methodologies are not "better," in the abstract, than curatorial methodologies, or vice-versa. It is just that archival methodologies are suited for archival tasks, whereas curatorial methodologies are suited for curatorial tasks. It is simply a question of using the appropriate tools. Applying curatorial methods to archival work or archival methods to curatorial work would achieve equally undesirable results.

By the same token, a carpenter can use shop tools to build a cabinet, and an endodontist can use dental instruments to perform root canal, and both will achieve splendid results. But if the carpenter used dental instruments and the endodontist shop tools, the outcomes would be catastrophic. Especially for the patient undergoing root canal. And the same would be true when archival methods are employed for curatorial work or curatorial methods are employed for archival work.

II.   **THE FUNDAMENTALS: PROVENANCE, HIERARCHICAL ORGANIZATION, AND ORIGINAL ORDER**

A. **Provenance**:

In museum administration and the curation of objects, "provenance" generally refers to chain-of-custody.

In archives, however, "provenance" generally refers to the origins of a particular body of archival materials, rather than who owned or housed the materials thereafter. It is the principle that all records created by one person, group, organization, corporation, government agency, or other entity be managed together as a coherent whole, and not intermixed in any way with the records created by any other entity.

Thus, the most important unit of control in archives is the provenance-based "Fonds" or "Record Group."

A Record Group consists of all records made _or received_ by a specific "Records Creator." The Records Creator could be a business corporation, a government agency, a not-for-profit organization, a family, or an individual. This would include records in any format, including hard copy letters, memorandums, reports, charts, lists, drawings, blueprints, graphs, photographs, moving pictures, videotapes, audiotapes, phonograph records, ledgers, financial accounting sheets or ledgers, meeting minutes, transcripts, and diaries, as well as digital or electronic records of all types.

Of special note, the "Records Creator" is not synonymous with "Document Author." A Record Group contains ALL records for a specific Records Creator, whether made or received by that Records Creator. Thus, a Record Group would include letters, for example, that the Records Creator sent to a correspondent, as well as letters a correspondent sent to the Records Creator. In other words, a Record Group would encompass all outgoing letters as well as all incoming letters – regardless of author.

This means that a specific document could exist in one Record Group, and a duplicate of that same document could exist in another Record Group – which is perfectly appropriate. Copies of a specific letter sent by one Records Creator to another Records Creator belong in the Record Groups of both. This is because that letter is not simply a single fragment of information. Rather. it is part of a complete picture of the activities of two different Records Creators. If a copy of such a letter is omitted from one of the Record Groups on the pretext that it is duplicated in the other Record Group, then the Record Group from which the letter was omitted will be fragmentary. Any letter will derive meaning from context – and the context of the Record Group is all-important in archives.

Moreover, absolute and unbreachable firewalls must be erected between each Record Group. Each Record Group is a distinct entity, and it should never be combined with another Record Group – no matter how similar those Record Groups might be in terms of content, subject, timeframe, or personalities, and regardless of whether those Record Groups are owned or housed by the same repository.

Retaining documents in their original Record Group – in their Original Order within that Record Group, if possible, and uncontaminated by documents drawn from other Record Groups – is the single most important bedrock principle of archives. An individual document is at best a snapshot, with little clear connection to what went before or after. A document preserved in its Original Order and managed as part of the Record Group in which it was created, on the other hand, provides the essential context that make archival materials meaningful. Managing archives in this way is critical to reflecting the development, over time, of historical themes and events. It can demonstrate what information was available to specific Records Creators as decisions were being made, suggest causes and effects, show entire sequences of activities and thoughts, and help to authenticate individual documents.

B. Hierarchical Organization:

Once a Record Group has been identified, it needs to be organized. The internal structure of a Record Group is called a "Hierarchy." That is, Record Groups are organized hierarchically, and are broken down into subordinate parts. These subordinate parts may in turn be broken down further into their own subordinate parts. The Hierarchy proceeds from the general down to the specific. At the apex of the Hierarchy is the Record Group as a whole. There are various levels below the Record Group, such as Series and File Units. At the very bottom of this Hierarchy are the individual documents, called Items.

Put another way, looking from the bottom up rather than from the top down (that is to say, going from the specific up to the general, rather than from the general down to the specific), each document or Item typically is part of a File Unit; each File Unit typically is part of a Series; and each Series typically is part of the overall Record Group. Every Item, File Unit, or Series is part of something larger. It is all about context.

NOTE: Usually, archivists need exercise little discretion when identifying Series, File Units, and other levels in the Hierarchy for a given Record Group. This is because to goal is to follow (or, if necessary, recreate) the hierarchical order established by the Records Creator. (See "Original Order," below).

There are 4 standard levels in an archival Hierarchy:

- **RECORD GROUP:** The Record Group is the entirety of archival materials made or received by a single Records Creator. Particularly large or complex Record Groups may be subdivided into **SUBGROUPS**.
- **SERIES:** A Series is a natural grouping of records within a Record Group or Subgroup – "natural" in the sense that the person or organization that created the records devised the groupings, and that the documents accumulated within those groupings in the natural

course of doing business. Archivists should avoid imposing their own groupings or file structures unless there is no other alternative.

Records Creators group materials into Series mainly for ease of retrieval. Individual Series may be characterized by several factors, including (but not limited to): **1. Arrangement Scheme:** Although "unarranged" Series may be acceptable in certain circumstances, Series typically should adhere to a single arrangement scheme throughout. All files, volumes, or documents within a Series ordinarily are arranged alphabetically, chronologically, numerically, or according to some other consistent pattern. **2. Physical Type of Document:** In some cases, the Records Creator may choose to file all the photographs together, or all the architectural drawings, or all the maps. If so, these groupings by physical type might constitute a series – but only if that is the way in which they were originally filed. If the records creator filed disparate physical types together in a single Series, such as photographs with related letters and reports, then those photographs must remain part of that Series – even if it is necessary to separate them physically for preservation purposes. **3. Subject Matter or Function:** Organizations may file personnel records in one dedicated Series, financial records in another dedicated Series, and project records in a third dedicated Series; individuals might maintain family correspondence in one Series, business correspondence in a second Series, and personal memoirs in a third Series. **4. Time Frame:** It is not unusual for Records Creators to break off certain types of "recurring" records by blocs of time. A Series of correspondence may extend cover 10 or 15 years, followed by a subsequent Series of correspondence covering the next 10 or 15 years. Retaining that original filing scheme is usually more efficient than attempting to interfile the correspondence into a single Series. **5. Source:** It is conceivable that a group of documents received from a particular source could constitute a Series.

In some cases, a Series may be so large or complex that the Records Creator might have divided it into **SUBSERIES**. For example, if a Series of correspondence is broken out into 10-year blocs, as cited above, then all of the correspondence would constitute a Series, with each of the 10-year blocs being handled as a subordinate Subseries. Subseries, in turn, may be subdivided into **SUB-SUBSERIES**, and so forth, depending on volume and complexity. It is appropriate to subdivide materials in this manner until consistent bodies of records have been established, each with a consistent arrangement scheme. A Series with multiple arrangement schemes should be broken out into separate Subseries by virtue of the different schemes.

- **FILE UNIT:** A File Unit is the basic means by which individual documents are physically consolidated and arranged. File Units are the building blocks of the Series (or Subseries, or Sub-Subseries, etc., depending on whether a Series is sufficiently complex to be subdivided). Thus, typically, a Series (or Subseries, etc.) is a body of records that is made up of one or more File Units, arranged in a consistent pattern (alphabetically

arranged [by personal name, project title, or whatever]; chronologically-arranged; numerically arranged; or arranged by filing code).

When Records Creators start accumulating records, they usually do so by setting up File Units. Each File Unit therefore would hold documents relating to a particular project, case, individual, function, or time period.

NOTE: A File *Unit* is not the same thing as a file *folder*. A File Unit is a grouping of related documents. A file folder, however, is merely a physical device for holding those documents. And while there is a practical limit to the number of documents that can be placed in a physical file folder, there is no limit to the size of a File Unit. It is not unusual for a File Unit to contain only one document. But a matter that is especially complicated or protracted may generate hundreds of pages of letters, reports, or other documents, held in dozens of file *folders*. Yet the documents thus filed nonetheless constitute just one File *Unit*.

Further, it is permissible to handle as File Units certain types of documents than cannot even fit into a file folder. Bound ledgers, logbooks, and diaries, for example, may each be considered a File Unit, under many circumstances.
For example, oversized financial ledgers, each covering a single fiscal year, may be grouped into a single Series and treated as chronologically-arranged File Units – even though they cannot fit into file folders. And, of course, electronic documents should be saved digitally in electronic File Units, and would not go into a physical file folder at all.

- **ITEM:** An Item is a single document. Just as Record Groups typically are made up of Series, and Series are made up of File Units, File Units are made up of Items. An Item may be a one-page note, a two-page letter, a ten-page memorandum, or a report extending to hundreds of pages. Each of those separate documents, regardless of page length, constitutes just one Item. Further, some Items may contain attachments; a resume may be attached to a letter; a newspaper clipping may be attached to a memorandum; a flowchart may be attached to a report. In those instances, the attachment is part of the Item to which it is associated, and is not a distinct Item unto itself.

C. <u>Original Order</u>:

Archivists must make every effort to maintain records in the Original Order devised by the Records Creators. They should not attempt to rearrange materials according to their own preferences.

When organizations and individuals create records, they usually file them according to some kind of logical structure (known as the "Hierarchy," as described above). They might keep all their correspondence together, arranged alphabetically. They might keep all their financial

statements together, arranged chronologically. They might keep all their project files together, arranged by alpha-numeric code. They might keep all their videos together, arranged numerically.

Keeping such records in their Original Order is critical to preserving the integrity of the Record Group. Original Order is evidence of what actually happened, just as much as the documents themselves. They show what the Records Creator knew at any given point in time, and how the Records Creator made decisions. Keeping a Record Group in its Original Order can help researchers discern causes and effects, responses to events, the mindset of individuals at the time events occurred, and the flows and patterns of history.

Preserving Original Order preserves the very fabric of history. It keeps the puzzle pieces together in the manner in which they were first assembled. Once disaggregated, it is possible that they can never be reassembled. Archivists should not impose their own order, inevitably reflecting their own biases, on these materials. Defying Original Order means tampering with the context of each File Unit and each Item. Archival materials derive their meaning and legitimacy in large measure from context. Taking materials out of the context provided by Original Order diminishes users' ability to understand those materials.

In short, reordering a Record Group into what might seem like a more useful arrangement means imposing a subjective order on the records. This could make it more difficult for researchers to use the records in the future.

Of course, researchers can take notes on and make copies of documents, and put those notes or copies in any order that suits them. But each researcher deserves to start from the Original Order, as defined by the Records Creator, rather than be bound by the subjective preferences of archivists or researchers who handled the records after the Records Creator first assembled them.

Paradoxically, it is sometimes necessary for archivists to *re-create* Original Order. It is a common misperception among museum curators and other non-archivists that "Original Order" refers to the order in which they found the records. But whereas some Record Groups remain pristine in their Original Order from the time they were created until the time they were received at a museum or other repository, many get jumbled and out of their proper order – in which case, archivists should try to restore the true Original Order, rather than simply leave the Record Group in the order in which it was found.

To discern and reestablish the Original Order of a Record Group that has gotten mixed up, it is important to search for such clues as arrangement schemes, physical formats, subject matter and function, time frames, sources, and titles on file folders and bound volumes.

For example, 50 bound volumes may be scattered throughout an accession that contains a single Record Group. Each volume is marked with a number, from 1 through 50 (with none of the numbers being repeated), and they all contain the same kinds of documents and information.

Even though they are scattered and are out of order, it likely would be appropriate to bring them all together as a Series or Subseries, and file them in numerical order. All the evidence suggests that that was what the Records Creator did, before the ledgers got mixed up in the years leading up to the museum or archival repository taking possession of the Record Group.

Similarly, hundreds of file folders labeled "Outgoing Correspondence" may be strewn throughout a Record Group. Each folder is marked with a month and year between, say, 1937 and 1954, with none of the chronological designations being repeated, and they all contain carbon copies of letters sent out by the Records Creator. These folders may be interspersed with file folders containing different titles, and may no longer be in chronological order. But these files labeled "Outgoing Correspondence" clearly belong together within a dedicated Series or Subseries, and it is appropriate to consolidate them physically and arrange them chronologically.

To retain both Original Order and the completeness of a Record Group, it sometimes is necessary to combine accessions. Combining accessions is seldom done when managing museum objects. But it is entirely appropriate with archives, because Record Groups frequently are retired to repositories in different accessions separated by many years. But if those accessions all relate to a single Record Group, then they should be consolidated and managed together.

In fact, it is not unusual for new accessions from a single Records Creator to come into the possession of the repository long after the first accessions from that same Records Creator were arranged and described as a single Record Group. Since those accessions – called "accretions" – are from the same Records Creator, they should be incorporated into the existing Record Group. This will mean adjusting hierarchies, revising descriptions, and updating volume measurements. This can happen very frequently – especially in connection with a Records Creator that is an on-going business corporation or government agency, which retires its non-current records to the repository on a periodic basis.

The only instances when it may be appropriate for an archivist to impose a subjective order upon a body of records is when the Original Order has been hopelessly lost and cannot be discerned, or when the Original Order was purely random. In such cases, the archivist may devise a hierarchical structure and arrangement schemes within that structure for the purpose of making the Record Group useable. But this should only be attempted as a last resort, after all efforts to discover the Original Order have failed. And, even when imposing an artificial order, it is imperative to retain the Record Group's Provenance – that is, even when reordered, the Record Group should contain all the materials of a specific Records Creator, and those materials must never be mixed with materials generated by any other Records Creator.

To reiterate: absolute, unbreachable fire walls must be maintained between Record Groups – no matter how similar those Record Groups might be in terms of subject or time period. Even if a repository houses the personal papers of an individual who founded a corporation and also houses the business records of that corporation, the personal papers and the business records must remain in separate Record Groups. That is because the Records Creator for the personal

papers was the individual in question, while the Records Creator for the business records was the corporation. The founder of the company and the company that he or she founded are distinct entities, and therefore the records that they generate must constitute distinct Record Groups – unless, of course, the business was a very small, one-person enterprise, and the records of the company and the papers of the individual were inextricably intermixed from the start.

D. <u>**Exceptions and Special Cases**</u>:

True archival Record Groups are "organic." That is, they were produced naturally, as the Records Creator filed documents created in the ordinary conduct of doing business or performing any kind of activities.

There are also bodies of documents that are brought together "artificially," usually by a hobbyist, antiquarian, or amateur. These so-called "Assembled Collections" are not organic in nature, representing the natural documentary outcome of a Records Creator's activities, but are carefully chosen from various sources, without regard for maintaining archival integrity. Whereas true archival Record Groups are created naturally, Assembled Collections -- as the name suggests -- are consciously and deliberately collected, as an infant might reach for colorful baubles, and are wholly artificial. These aggregations of random, disconnected, and sometimes difficult-to-validate documents are not truly archival, and are seldom useful or reliable for serious historical research.

Such Assembled Collections may retain a modicum of artifactual interest, of course, and there are many such bodies of materials housed in museums, libraries, and archival repositories. The best way to manage them is to try to mirror archival methods. Provenance can be traced to the collector or selector, as the putative Records Creator. The Assembled Collection may then be handled as if it were a Record Group, a pretend Hierarchy developed, and a non-Original Order imposed. In other words, artificial Assembled Collections may be treated as if they were legitimate Record Groups, because there is nothing else to do with them – but the repository should clarify that the materials are being managed that way purely for the sake of convenience, and that the Record Group in question is an inorganic, artificial assemblage.

Worse, many repositories have accessioned individual historical documents that are hopelessly alienated from their true Record Groups, and are so idiosyncratic (in terms of subject, era, or author) that they cannot be incorporated into an Assembled Collection with any other alienated documents the repository may house. In such instances, it is an absurdity to attempt to handle such objects archivally. Some curators, mistakenly relying on their curatorial training instead of proper archival guidelines, have actually taken great pains to concoct Record Groups, Hierarchies, and filing schemes for such stand-alone documents. They will even generate finding aids that are longer than the documents themselves. This kind of essentially incoherent approach is not only costly, it is also unlikely to produce any serious practical benefit.

Since completely alienated and solitary documents are artifactual in nature, rather than archival, it is better to catalog them as museum objects than it is to manage them as archival holdings.

III. **GUIDELINES FOR MANAGING ARCHIVES ACCORDING TO THE PRINCIPLES OF PROVENANCE, HIERARCHICAL ORGANIZATION, AND ORIGINAL ORDER**

An accession of museum objects may contain just one object, or it can contain hundreds of objects. Curators take each object or artifact from the accession, classify it (according to the taxonomic requirements of the appropriate discipline, such as biology, geology, paleontology, archeology, etc.), name it (using, whenever possible, one of the standard terms listed in the discipline's professionally-accepted nomenclature or lexicon), catalog it (assigning a specific catalog number to the object, describing the object's dimensions, materials, colors, flaws, significance, etc.), photograph it (if so required by the individual museum's policy), label or mark the object with its catalog number, wrap or pack it for extra protection (if necessary), and place it in or on whatever drawer space or shelf space in the museum's storage area is appropriate and available (taking care to note the drawer number or shelf location in the catalog record). Then curators simply will move on to the next object, and follow the same routine. Sometimes curators will "lot catalog" several small objects from a single accession at one time, as a single catalog record. For archeological accessions, it is not unusual to lot catalog a bag of lithics. But even as the curators perform such lot cataloging, they would follow the same procedure that they followed in handling individual museum objects.

It is worse than useless to attempt to handle archival materials in that way. Attempting to catalog documents one at a time, as one would catalog museum objects, and then storing them utterly out of context, wherever space is available, is highly impractical, prohibitively expensive, and contrary to all professionally-accepted principles of archival management. Moreover, it will destroy the integrity of a Record Group, fatally undermine its value as reference source, and thwart efforts of historians and other researchers to use it in an intelligent and efficient fashion.

Proper archival management means: (1) completing the physical arrangement of the Record Group in its entirety, in accordance with the principles of Provenance, Hierarchical Organization, and Original Order, and (2) describing the Record Group holistically – <u>not</u> by cataloging its contents on a document-by-document basis, as a curator would catalog objects, but instead describing it according to a standard format that is based on the Record Group's Hierarchy.

A. **Primacy of the Hierarchy:**

It is impossible to manage archival holdings by taking documents one at a time out of an accession, cataloging them individually, and placing them wherever storage space is available, in

the manner of managing museum objects. Rather, they have to be arranged in an archivally sound manner, as follows:

1. Consolidate all records for a given Record Group (that is, all materials generated by a single Records Creator). Sometimes, as noted above, this will involve bringing together materials from multiple accessions. This could involve 100 documents or 100,000 documents – or more.
2. Identify the Hierarchy for the Record Group, based on Original Order (see above). It is important to bear in mind that each Hierarchy is unique, just as each Record Group is unique. Similarities will abound from one Hierarchy to another, but there is no universal template that can be followed – apart from following the descending Record Group/Series/File Unit/Item order.
3. Arrange everything physically in accordance with the Hierarchy. There may be instances where certain documents – such as oversized maps – may have to be removed for special handling; when this occurs, "separation sheets" should be placed in those documents' original physical locations, indicating that the separated documents are still part of the particular File Units and Series where they originally resided, but that they have been moved elsewhere for special handling. But with just a few such exceptions, the actual physical arrangement – that is, the arrangement of File Units in boxes on shelves in the repository – should mirror the intellectual arrangement set forth in the Hierarchy. The Hierarchy, in other words, is the map or structure of the Record Group, and the physical arrangement of the Record Group's contents follows the order specified in the Hierarchy.

NOTE: To repeat: Hierarchies are not templates. They are not classification schemes. A Hierarchy is unique to each Record Group – even though the Hierarchy for one Record Group might resemble the Hierarchies for other Record Groups. The Hierarchy is no more than a framework that reflects how Items relate to File Units, how File Units relate to Series, and how Series relate to a specific Record Group as a whole. Different Record Groups will still adhere to the same Hierarchical structure, going from general (the Record Group) down to the specific (the Item). But the documents generated by different Records Creators will be different, the File Units into which they were placed by the Records Creators will be different, and the Series will be different. The Record Group-Series-File Unit-Item Hierarchy is an outline, not a taxonomy, and each Hierarchy is different.

To clarify the nature of a Hierarchy, two sample Hierarchies appear below. One sample Hierarchy is for a fictitious large business enterprise. The other is for a fictitious private individual.

Sample Hierarchy 1: Record Group Containing Materials Created by a Fictitious Business Enterprise:

Series 01: Records of the Office of the President
      Subseries 01.01: Correspondence

(Arranged alphabetically, by name of correspondent)
Subseries 01.02: Files Relating to Board of Directors
Sub-Subseries 01.02.01: Meeting Minutes
(Arranged chronologically)
Sub-Subseries 01.02.02: Membership Files
(Arranged alphabetically, by name of member)
Subseries 01.03: Speeches
(Arranged alphabetically, by name of audience or event).

Series 02: Personnel Records
(Arranged alphabetically, by name of employee)

Series 03: Financial Records
Subseries 03.01: Accounting Ledgers
(Arranged numerically, by volume number)
Subseries 03.02: Tax Returns
(Arranged alphabetically by taxing authority, and
thereunder chronologically)

Series 04: Records of Engineering Department
Subseries 04.01: Project Files
(Arranged by alphanumeric code, corresponding to
specific contracts)
Subseries 04.02: Engineering Drawings
(Arranged by alphanumeric code, corresponding to
specific contacts)
Subseries 04.03: Correspondence
Sub-Subseries 04.03.01: Incoming Letters
(Arranged alphabetically, by correspondent)
Sub-Subseries 04.03.02: Outgoing Letters
(Arranged chronologically)

Series 05: Records of Public Affairs and Marketing Department
Subseries 05.01: Press Releases
(Arranged chronologically)
Subseries 05.02: Advertising Campaigns
(Arranged alphabetically by media type, and
thereunder chronologically)
Subseries 05.03: Still Images
Sub-Subseries 05.03.01: Photographic Prints
(Arranged alphabetically, by subject)
Sub-Subseries 05.03.02: Negatives
(Arranged numerically)

Subseries 05.04: Moving Images
    Sub-Subseries 05.04.01: Films
        (Arranged alphabetically by title)
    Sub-Subseries 05.04.02: Videotapes
        (Arranged alphabetically by subject)

Series 06: Records of Sales Department
    Subseries 06.01: Correspondence
        (Arranged alphabetically by client name)
    Subseries 06.02: Sales Reports
        (Arranged alphabetically by name of sales representative,
        and thereunder chronologically)

Series 07: Records of Manufacturing Department
    Subseries 07.01: Factory Reports
        (Arranged alphabetically by location, and thereunder
        chronologically)
    Subseries 07.02: Product Specifications
        (Arranged numerically by product number)

Series 08: Insurance Files
    (Arranged numerically, by policy)

Sample Hierarchy 2: Record Group Containing Personal Papers of Fictitious of Private Individual

Series 01: Correspondence
    (Arranged alphabetically by correspondent)
Series 02: Diaries
    (Arranged chronologically)
Series 03: Scrapbooks
    (Arranged alphabetically by topic)
Series 04: Research Files
    (Arranged alphabetically by subject or project)
Series 05: Photographs
    Subseries 05.01: Family Portraits
        (Arranged alphabetically by personal name)
    Subseries 05.02: Travel Photographs
        (Arranged chronologically)

These two hypothetical Hierarchies demonstrate how Record Groups do not follow a single template, other than the Record Group/Series/File Unit/Item format. The Hierarchy for the

corporation's records is more complex than the Hierarchy for the individual's personal papers; this is to be expected, as on-going bureaucracies will be larger and more complex than individuals, and leave behind larger and more complex documentation. But even within the corporation's Hierarchy, the complexity varies from Series to Series, with some Series being broken out into Subseries, and even Sub-Subseries. Moreover, the rationale for different Series and Subseries can vary, from corporate division, to record type, to subject, to function, and finally to arrangement scheme. Finally, file arrangement schemes can vary, from alphabetical, to chronological, to numerical, and so forth – but are always consistent within a Series, Subseries, or Sub-Subseries. That is, when the Hierarchy reaches down to the actual File Units, arrangement schemes will follow a uniform pattern – no matter how those schemes might vary from one Series or Subseries to another.

What is critically important is that each Hierarchy is different; each Hierarchy is unique to its Record Group. The records generated by a different corporation than the fictious corporation shown above may include entirely different Series and Subseries. It will all depend on the corporation's internal structure, on its activities, and on its records retention policies. Similarly, the papers of a different individual than the fictitious person shown above may be organized into an entirely different Hierarchy, depending on that person's interests and practices.

Thus, there is no universal template for Hierarchies. Hierarchies reflect the unique properties and patterns of a Record Group – which in turn will reflect what kinds of documents the Record Creator generated, and how the Records Creator filed them.

Above all, it must be remembered that the Record Group/Series/Subseries/File Unit/Item structure in an archival Hierarchy is not analogous to the Kingdom/Phylum/Class/Order/Genus/Species categories for natural history specimens, as defined by Linnean Taxonomy. Neither is it equivalent to the Era/Culture/Material/Typology categories used in the classification of archeological objects. The Hierarchy is not a classification scheme of any kind – although object curators sometimes attempt to employ it as such. It is nothing more than a statement of what records were kept, and how they were arranged, by a given Records Creator.

Without a Hierarchy in place, archival work would be futile. Once the Hierarchy has been identified, the materials within a Record Group may be arranged and described smoothly, efficiently, and accurately.

B. <u>Arrangement</u>:

Unlike museum objects, which generally are curated, cataloged, and stored one at a time, a Record Group must be managed as a whole.

The key is the Hierarchy. The Hierarchy shows not just the structure of the Record Group, but also provides the overall plan for completing the physical arrangement

of the Record Group. It is necessary to place the records into acid-free folders and boxes, to flatten, unroll, or unfold individual documents, to remove staples, paper clips, rubber bands, and other materials that could damage documents, and to provide further physical protection for the documents by encapsulating damaged, fragile, acidic, or otherwise unstable documents in clear polyester sleeves, by interleaving them (if necessary) with acid-free sheets, and placing photographs in either buffered or non-buffered envelopes (depending on the type of photograph). And it is equally necessary to order each of the Record Group's File Units, Subseries, or Series in proper relationship to each other.

To do that, archivist must use the Hierarchy as a guide. The physical arrangement of a Record Group, that is, should be based on the Hierarchy. The Hierarchy, in a sense, becomes a table of contents, similar to the table of contents in a book or magazine. There are certain exceptions, of course. As noted above, oversized documents may have to be housed separately from the File Units to which they belong, and storage space configurations may necessitate shelving a portion of the Record Group in one place, and shelving the remainder of it in another.

But, by and large, the physical arrangement of a Record Group will match the intellectual arrangement shown in the Hierarchy.

As Record Groups are processed and arranged, the file folders and boxes will need to be labeled. Labels for folders should cite the Record Group, the Series and Subseries (as appropriate), and the title of the File Unit (in abbreviated form, if necessary). The box label, in addition to providing the box number, should cite the Record Group, the Series, Subseries, etc., and the titles of the first and last File Units contained in the box.

Thus, even a task as simple as labeling boxes and file folders cannot be completed without reference to the Hierarchy. For any Record Group, the Hierarchy is of central importance.

C. <u>Description</u>:

Just as a Record Group's Hierarchy will provide the basis for the physical arrangement of that Record Group, the Hierarchy will also provide the basis for the description of that Record Group, and the preparation of a "finding aid."

The difference between archival description and museum cataloging is not one of semantics. The purposes, meanings, and procedures of the two are almost diametrically opposed.

Museum cataloging captures minutely detailed information about each individual object, virtually in isolation from other similar objects housed in the same repository and perhaps received as part of the same accession. Archival description, however, provides overviews at each level of a particular Record Group's Hierarchy – except the Item level, as a rule – and always within the context of the other levels within that Hierarchy.

Museum cataloging focuses on individual trees. Archival description focuses on copses or stands of trees, and shows their interrelationships not only with other copses but also with the entire forest that contains them.

Archival description is geared towards creation of a finding aid for a specific Record Group – which can appear both in printed and electronic formats, and which can be used both by employees of the repository that houses that Record Group, and by outside researchers. Finding Aids are holistic guides, as opposed to virtually atomistic museum catalog records.

The central elements of an archival finding aid are:

- Brief history of the Records Creator (if the Records Creator is an organization), or brief biography of the Records Creator (if the Records Creator is an individual).
- The Hierarchy.
- "Scope and Content Notes" for the Record Group as a whole (including date range for the Record Group, a list of the types of documents that appear most frequently [such as correspondence, reports, maps, sound recordings, or whatever], an overview of the activities documented among the records, examples of specific topics and highlights, and the Record Group's volume [usually expressed as a cubic measurement]).
- Scope and Content Notes for each Series, Subseries, Sub-Subseries (and lower-level Subseries, as well, if the Hierarchy is that complex). These descriptions would be similar to the Scope and Content Notes at the Record Group level (date ranges, lists of document types, principal activities, notable topics, cubic measurements, etc.), but are focused exclusively on the particular Series or Subseries. There is one notable addition: the arrangement scheme for the File Units contained within the Series or Subseries should be specified (as shown in the samples of Hierarchies, above). Also, these Series/Subseries descriptions should appear in the same order in the finding aid as they appear in the Hierarchy.
- Box-by-box listing of File Unit titles (optional). This box list may appear at the end of the finding aid, after the Series/Subseries descriptions, and it should follow the same order set forth in the Hierarchy.
- Theoretically, File Unit level Scope and Content Notes can be prepared, but only under the most unusual of circumstances. Ordinarily, a box listing of File Unit titles is sufficient – and often it is not even necessary. If a researcher needs a correspondence file from, say, 1961, and the File Units are arranged chronologically, it is a simple matter to go straight to the box containing correspondence for the date range that includes 1961 and retrieve the requested file.
- Item level descriptions – even mere Item level listings -- are never done, with two extremely unusual exceptions. Incredibly rare documents – such as those in the Dead Sea Scrolls category of rarity – may be described down to the Item level. Also, there are occasions when a Record Group – especially an artificial or assembled one (as described above) – is so small or undifferentiated that it cannot be organized into Series and

Subseries. In such instances, the Hierarchy would consist of the Record Group, at the top, and the individual Items (in the order in which they are boxed) as the only subordinate level. There would be no intervening levels of Series or File Units. When this occurs, it is acceptable to create a listing of the individual Items, called a "document calendar." But this listing should be very basic, indicating, perhaps, the author and date of a particular report, or the writer, recipient, and date of a particular letter; such document calendars ordinarily should not go into details on the contents of each Item.

Every fact, every key point, every scrap of paper, neither can nor should be addressed in an archival finding aid. Deluging a finding aid with too much information, on the entirely fallacious notion that this will make it possible to go directly to every document that contains any piece of information on any topic, is neither feasible nor beneficial. Beyond the Record Group/Series/Subseries scope and content notes, and the File Unit listings, preparation of an archival finding aid can quickly reach a point of diminishing returns. At a certain juncture, more time will be expended on preparing a finding aid than will be saved by using it to carry out reference services.

Museum cataloging is as different from archival description as a basket of eggs is from an omelet. Individual catalog records can be compiled, but they can only be searched individually. Archival descriptions, however, form a coherent whole – and, unlike a binder full or museum catalog records, it is a whole that is greater than the sum of its parts. Rather than simply thumbing through disconnected catalog records to ferret out individual objects, archival researchers search by Provenance (to identify the appropriate Records Creator) and then through the Hierarchy (to identify the likeliest Series or File Units in which to conduct research). Often, a serious researcher will not even know in advance what specific documents he or she might want. It is only by traveling the paths set forth by Provenance, Hierarchy, and Original Order in the finding aid that he or she can mine the Record Group successfully. And, just as often, a serious researcher will learn more along the route than he or she could have gleaned going straight to a specific document.

NOTE: Computer software programs that allow for entry of archival data, in the formats shown above, are commercially available.

D.   Electronic Records:

As the "paperless office" inches closer and closer to reality, the volume of electronic records is increasing exponentially. Even for museums and archival repositories that have not yet accessioned electronic records – whether they are digitized paper records or "born digital" materials – electronic records will soon be in the pipeline.

Whether in hard copy or in digital format, all records should adhere to the well-established archival principles cited above. Provenance, Hierarchical Organization, and Original Order still

apply. One way of insuring this is to establish a Record Group-specific directory on a server, with subdirectories for each Series or Subseries, and electronic file folders thereunder where electronic documents may be placed as they are created and saved. For Record Groups that are a mix of hard copy and digital materials, the digital materials may be handled as distinct Series or Subseries, integrated fully into the Record Group's Hierarchy – even as they are stored on servers, on disks, or on the Cloud, separate from the boxed paper records.

Thus, archival standards are compatible with new and future technologies.

Archivists should remember, however, that digital storage can be expensive. Obviously, it is appropriate to retain born-digital materials in electronic formats, regardless of price, but routinely digitizing paper records can entail added costs that may be overlooked. The actual digitization of a body of records may be inexpensive. But preserving those electronic records is another problem. They not only have to be stored on the Cloud or other servers (which can be costly), but they have to be reformatted to new software packages and migrated to new hardware on an established schedule. And if such reformatting and migration does not occur, the digital record could vanish. Moreover, digital records are subject to tampering, making it incumbent on repositories to pay for security software and regular security upgrades.

Also, the idea that automated access means expedited records access may be overstated or even illusory. Non-archivists often proclaim the value of full-text search capabilities – but, as anyone who has ever entered a search term into the Internet knows, full-text search can result in hundreds or even thousands of false positives (and an unknowable number of false negatives). Electronic search capabilities can assist in getting archives users to a general area of inquiry, perhaps, but traditional, provenance-based reference is still the best option for serious researchers.

IV.   IN CONCLUSION: THE BEGINNING – CRITERIA FOR PERMANENT RETENTION

Before Record Groups can be described, before they can be arranged, even before they can be accessioned, they need to be appraised to determine whether they warrant permanent retention. But the appraisal of archives requires a firm grounding in archival principles – which is why the archival activity that must be conducted first is being discussed last.

There are five professionally-accepted criteria or tests that may be applied to determine if archival materials possess sufficient "enduring value" to justify accessioning by a museum, library, or archival repository: Evidential Value, Informational Value, Legal Value, and Intrinsic Value.

- **EVIDENTIAL VALUE:** A body of records created by a business corporation, government agency, or other bureaucratic enterprise presents Evidential Value to the

extent that it provides significant evidence of the actions taken or considered, decisions made, policies implemented, programs carried out, or goals adopted by the Records Creator. It may also have Evidential Value if it sheds light on the organization or administration of the Records Creator. Personal papers have Evidential Value if they meaningfully reflect the activities or thoughts of the individual who created them.

- **INFORMATIONAL VALUE:** Evidential Value evaluates the capacity of a Record Group to illuminate larger historical events, national or international trends, themes, issues, and eras, apart from the activities, operations, policies, thought processes, programs, and structure of the Records Creator. For example, does the Record Group contain information on national or regional political history or social movements, does it illustrate important cultural developments, does it relate to wars, disasters, discoveries, celebrities, or other factors that would be valuable to researchers?

  Most Record Groups have at least some trace of Informational Value. But the Informational Value is sufficient to justify retention only if it is unique or if it is concentrated. Information in a Record Group is considered unique if it is not readily available elsewhere (for example, in books, newspapers, or other Record Groups), or if it reflects a particular perspective that is not readily available in other sources. Concentrated information, meanwhile, is that which provides many facts on a small number of persons, things, issues, or events, or a few facts on a large number of persons, things, issues, or events, or many facts on a large number of persons, things, issues, or events. Record Groups that contain only a small number of facts about a small number of persons, things, issues, or events may not justify accessioning based on concentrated Informational Value.

- **LEGAL VALUE:** Deeds, wills, articles of incorporation, plats, and contacts may possess ongoing Legal Value. Such documents may be necessary to establish ownership, authority, responsibility, or obligation in a legal sense. These and other types of documents with Legal Value may be important not only for historical research, but also for present-day and future activities, from title searches to litigation.

- **INTRINSIC VALUE:** Some documents may have value as artifacts, rather than for their contents. The Declaration of Independence (adopted by the Continental Congress in July 1776) is one of the most significant documents in United States history – but its contents are well known, having been reproduced countless times, printed in books, and made available on-line and in thousands of libraries. All of the information in the Declaration of Independence is readily available elsewhere. But the actual, physical, original document itself retains enormous value as an artifact, and therefore it has Intrinsic Value of the highest order.

Similarly, the information contained in the Constitution of Georgia, or Sakartvelos K'onstitutsia (approved by the Parliament of Georgia in August 1995), and the Decree of State Power (promulgated in November 1992) would be well-known and readily available. But the original, physical documents themselves retain Intrinsic Value as artifacts on a par with that of the Declaration of Independence.

Another example of a document with Intrinsic Value would be the research notebook of a great, internationally-renowned scientist. The data, research findings, formulas, and other information may be widely reproduced, well-known, and possibly even obsolete. But the original notebook, handled personally by the scientist, and written in his or her own hand, would present considerable Intrinsic Value as an artifact.

Entire Record Groups are seldom appraised on the basis of Intrinsic Value. In fact, the concept was introduced mainly to deal with problems arising from the management of Record Groups that had already been accessioned. Specifically, some repositories were destroying badly damaged or unstable documents after they had been copied for preservation and reference purposes. Enunciating the concept of Intrinsic Value provided guidance to repositories on which documents could be destroyed after being copied, and which documents were so important as artifacts that they should be preserved even after preservation and reference copies were made.

Usually, Record Groups will be appraised on a Series-by-Series or Subseries-by-Subseries basis. Simply put, if a Series or Subseries has sufficient significance under any one of the appraisal values, then it should be retained in its entirety. Series or Subseries that do not meet that criterion may be discarded in their entirety (or, at least, they can be excluded from the accession accepted by the repository).

One of the most common examples of a Series or Subseries that has insufficient value for retention would be routine purchase orders for a corporation or a government agency. The larger the corporation or agency, the more voluminous the paperwork for the routine, day-to-day purchasing of pencils, stationary, paper towels, cleaning supplies, and office furniture. The Evidential, Informational, Legal, or Intrinsic Value of routine orders would be minimal to nonexistent, as would researcher interest in such materials. Disposal of such records ordinarily is well justified.

Obviously, records appraisal is an inescapably subjective undertaking. The appraisal values can only provide a framework for conducting a subjective assessment of a Record Group's worth, giving some form of structure to a record appraiser's thinking. But the kind of focus that the appraisal values attempt to impart can help a records appraiser make a rational – albeit subjective – recommendation on whether to accept or decline an accession offer.

Museums and other repositories often maintain in-house acquisitions committees or review committees that make final decision on whether or not to accession a given Record Group. Preparing an appraisal report incorporating whichever values are relevant is a way for the records appraiser to make an argument for or against accessioning – and the appraiser's written report, in turn, will provide the acquisition committee with a substantial basis for making its decision.

There are numerous other guidelines that archivists should follow, of course. There are standards for environmental controls, security considerations, acceptable levels of light exposure, boxing and foldering, labeling, conservation techniques, and so forth. But the seven great pillars cited above – Provenance, Hierarchical Organization, and Original Order (for managing archives), and Evidential Value, Informational Value, Legal Value, and Intrinsic Value (for determining worthiness) – furnish the intellectual basis for all archival work.

V. <u>**CLOSING THOUGHTS**</u>

Context and structure are everything in archives.

While individual documents may not be completely meaningless, it is impossible to discern the full meaning of a single document that has been alienated from the Record Group in which it was created. It can be difficult to validate such a document. And it can be as futile trying to locate an individual, alienated, disaggregated document among countless individual, alienated, disaggregated documents as it is to find the proverbial needle in a haystack.

Any attempt to handle archives by cataloging and classifying them one-by-one, as is the common practice with museum objects, is doomed not simply to failure, but to grossly expensive failure. To be managed and used efficiently, effectively, intelligently, and at an acceptable cost, archives must be handled not as individual documents but as inherent elements of a larger context, that exists within a precise structure.

And that indispensable context and structure are defined though the principles of Provenance, Hierarchical Organization, and Original Order. Without Provenance, Hierarchical Organization, and Original Order, archives would be nothing more than an unintelligible, indistinguishable, random blizzard of paper or kilobytes.

Project Phase 2.3 – Briefing Paper, Natural and Cultural Resource Management
Lead Author: Lawrence Sperling

Climate Change, Natural Protected Areas and Cultural Resources

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I.   Introduction.

The impact of global climate change on almost every aspect of Earth's systems is accelerating in speed and severity. These impacts include increasing weather extremes – storms, floods, droughts, and wildfires, that affect the flora and fauna and cultural resources in national protected areas, as well as gradual changes to ecosystems and the services they provide. The National Park Service (NPS) and other U.S. protected area management agencies are rising to the challenge. NPS has adopted a comprehensive strategy that emphasizes science, facilitates adaptation to the impacts of climate change, seeks to set an example through sustainable operations that mitigate the emissions responsible for climate change, and leverages the unique position of the nation's protected areas to communicate and educate the public about climate change and its impact on our natural and cultural resources.

This briefing paper describes the core elements of NPS's climate response strategy; **Annex I** includes references and links to strategies, policies, guidance materials and tools employed by NPS and other DOI land management bureaus in responding to climate change. **Annex II** includes several case study examples that demonstrate the application of tools, strategies and best practices to understand, engage stakeholders, and develop science-informed responses to climate change impacts in protected areas and the broader landscapes in which they situate.

II.   Overview, Discussion, Demonstration Examples.

Climate change is a significant factor that affects park ecosystems, resources, infrastructure, and visitor experiences. The NPS seeks to understand and manage effects from a changing climate to protect park resources. Accounting for climate change in park management helps ensure wise use of public funds, minimize risks and hazards, and provide enjoyable, safe experiences for visitors.

A. Strategic Approach through Planning, Partnership and Programmatic Expertise

In 2010, NPS adopted a comprehensive Climate Change Response Strategy (2010), which describes four fundamental components to address climate change in the U.S. national park system: Science, Adaptation, Mitigation and Communication.[1] While the understanding of

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[1] In 2023, NPS is working to update the Climate Change Response Strategy.

climate impacts on protected areas and the tools available to respond to those impacts continue to evolve, these four objectives remain integral to NPS's strategic response to climate change.

National Parks sit within broader landscapes and ecosystems, that are shared by and often provide critical ecosystem services for a wide variety of stakeholders – communities, local, state and tribal governments, ranchers, farmers, and others. Conservation efforts often rely on robust partnerships across large spatial scales. The continued protection of national parks in the face of global change will increasingly rely on shared stewardship efforts.

Established in 2010, the NPS [Climate Change Response Program](#) (CCRP or Program) advances the Service's efforts to address the effects of climate change across the breadth of NPS responsibilities. The Program works across directorates and other NPS program areas to support parks through technical expertise and research, guidance and training, project and planning support, and provision of communication products. The Program works with other agencies, organizations, and stakeholder groups—nationally and internationally—to maximize information sharing, support, learning, and project effectiveness. CCRP's program-wide functions position NPS for effective and responsible leadership in climate change, helping parks service-wide as well as NPS partners in managing current and future climate change challenges.

B. <u>Science</u>

Climate change is shifting environmental conditions across vast landscapes, but national parks remain at fixed locations. NPS uses climate science to provide information to help manage resources and advance scientific understanding. Scientists from the NPS, universities, the U.S. Geological Survey (USGS), and other partners conduct and apply research that capitalizes on the unique conditions of U.S. national parks to advance active climate change adaptation, and answer key resource management questions:

- **Climate Trends** – Computational analyses of large datasets provide an ever-expanding understanding of recent past climates and plausible future climates, helping managers understand and prepare for potential impacts.
- **Historical Impacts** – Field research in national parks has detected substantial changes in ecosystem processes and conditions attributable to climate change. Understanding historical impacts, such as melting glaciers, wildfire, tree death, coastal erosion caused by sea level rise, and shifts in vegetation and wildlife, helps managers prepare for future impacts.
- **Vulnerability** – Spatial analyses of species, ecosystems, and other resources identify what is at risk and why. Climate change vulnerability assessments help parks prioritize vulnerable resources and develop adaptation strategies for cultural and natural resources, infrastructure, and visitor experiences. (See **Annex 1** for additional information and resources).
- **Monitoring** – The NPS Inventory and Monitoring Program tracks important climate and ecological indicators over time, including glacier perimeters and flora and fauna ranges.
- **Carbon** – Quantifying local greenhouse gas emissions (e.g., from facilities and vehicle exhaust) helps NPS reduce contributions to climate change. Quantifying ecosystem carbon stocks helps NPS understand how forests, wetlands, and other ecosystems store carbon.

C. <u>Adaptation</u>

Climate change will likely affect all aspects of national park management, including natural and cultural resource protection, operations and infrastructure, and visitor use and experience. The widespread nature of climate change amplifies ongoing resource impacts such as habitat fragmentation, water scarcity, pollution, invasive species, etc. Simultaneously, uncertainties regarding future conditions challenge efforts to determine appropriate adaptation actions.

Applying the best-available science and committing to adaptive management are critical components of an effective response. Adaptation to ongoing climate change often requires revising strategies to meet existing goals and, increasingly, revising goals (and developing new strategies) as conditions shift beyond the historical range of variability. (**Annex 1** includes additional information and resources on adaptive management).

Moreover, the impacts of climate change extend beyond the park's boundaries. Coping with the landscape-scale impacts of climate change requires collaboration across jurisdictions, partnerships, development of new tools, and joint planning for change. (<u>See</u> **Annex 1** for resources on landscape scale conservation, and **Annex 2** for demonstration examples.)

NPS is working to mainstream climate change adaptation across the national park system as a routine part of doing business. CCRP seeks to position park managers to adapt to rapid change and associated climate uncertainties, to support the long-term structure, function, and viability of park resources and infrastructure. CCRP facilitates access by park managers to robust scientific assessments, policy guidance, trained personnel, and strong partnerships. Activities include:

- Providing analysis, synthesis, and translation of management-relevant science to support park planning at all levels.
- Developing guidance for including climate change in planning and decision documents (e.g., Resource Stewardship Strategies).
- Analysis of park resource and facility issues associated with climate change that may require policy guidance and/or new approaches to frame management goals and desired outcomes in the context of a rapidly changing environment.
- Advancing adaptation guidance, decision-support tools, and examples to support the NPS response to climate change.
- Guiding and developing vulnerability assessments for parks, as well as collaborating with other agencies in vulnerability assessments and strategies for adaptation.

<u>Adaptation Decision Tools</u>:
Just as the challenge of climate change requires adaptive approaches, the toolkit available to assist decision-making under conditions of uncertainty has been evolving. **Annex 1** provides information and links to key tools and other resources that assist Park managers in applying the best available science and the input of key stakeholders to inform adaptation strategies and decisions in the face of rapid, uncertain, and sustained change. Building on climate risk and vulnerability assessments and other inputs of scientific data and information, two key tools are the use of Scenario Planning to project alternative future scenarios, and the Resist-Accept-Direct Framework to guide decision-making in the face of uncertainty regarding likely impacts.

Scenario Planning: Parks face a major challenge in anticipating future, often far-reaching impacts of Earth's escalating climate crisis on natural and cultural resources, facilities, operations, and the visitor experience: not knowing their exact timing and nature. Resource managers require forward-looking planning approaches that work with irreducible and consequential uncertainty. A single forecast is likely to be inaccurate, so it is risky to rely on any one prediction of the future to make management decisions. Scenario planning—a longstanding military and private-sector tool adapted by the NPS and partners in recent years, offers a framework for working with uncertainty and preparing for a wide range of plausible future conditions**.**

This structured process identifies a small set of scenarios—descriptions of potential future conditions that characterize a broad range of critical uncertainties—and uses them to inform planning. Scenario planning can ground managers in the range of ways climate and resource responses may plausibly play out, help them examine long-held assumptions, and ultimately develop goals and activities that are robust to an uncertain future. Scenario development can be 1) a highly participatory, workshop-based approach that leverages expertise of resource managers and other subject-matter experts, 2) a technical approach in which scientists link climate projections to quantitative models, or 3) something in between. Regardless of format, however, the fundamental objective of climate change scenario planning is to develop insights that inform decision-making and help managers take strategic action. (See **Annex 1** for links to resources).

Resist-Accept-Direct Decision Framework: Traditionally, natural resource managers have assumed relatively stable ecological conditions, affected by moderate variability and gradual shifts. Climate change's increasingly rapid, unpredictable, and irreversible ecological shifts are challenging those traditional assumptions. The [Resist-Accept-Direct (RAD) decision framework](#) has emerged as a simple tool that captures the entire decision space for responding to ecosystems facing the potential for rapid, irreversible ecological change. It assists managers in making informed, purposeful choices about how to respond to the trajectory of continuous change that is not yet fully understood. Moreover, the RAD framework provides a straightforward approach to support resource managers in collaborating at larger scales across jurisdictions, more urgent today than ever.

The RAD framework posits three possible management responses to transformational change. Managers can actively ***resist change*** by intervening to reduce vulnerability to change and/or restore conditions where change has occurred. Alternatively, they can ***accept change***, allowing ecosystems to drift into new, unprecedented conditions, often with uncertain consequences. The third option is to ***guide, direct, or facilitate change*** by intervening to transform ecosystems into new states more concordant with emerging climates and better able to sustain desired ecosystem services. (**Fig. 1**). (See also: **Annex 1**, Resources, and **Annex 2**, Case Studies).
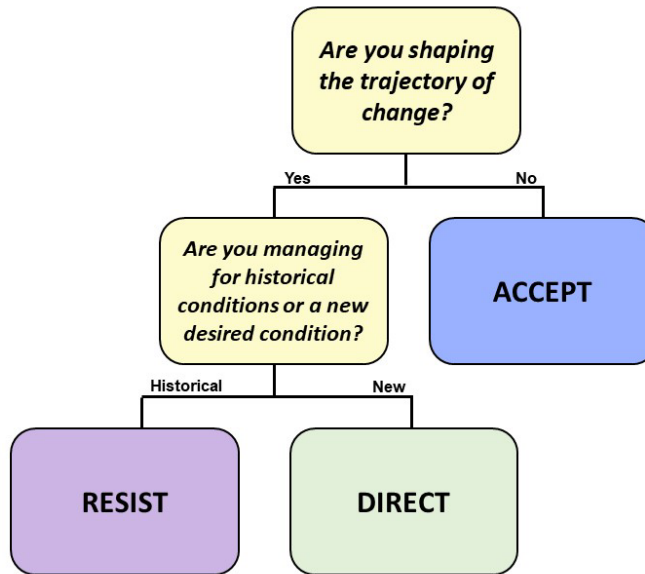
Figure 1. Decision tree depicting the three possible management responses to the trajectory of change under the Resist-Accept-Direct (RAD) framework. From Schurman et al, Resist-Accept-Direct (RAD)—A Framework for the 21st-century Natural Resource Manager, Natural Resource Report NPS/NRSS/CCRP/NRR—2020/ 2213. https://irma.nps.gov/DataStore/DownloadFile/654543

D. <u>Mitigation</u>

Protected areas are important contributors to removing greenhouse gases (GHG) from the atmosphere and storing carbon at some of the highest densities in the world. NPS is committed to conserving carbon stocks and optimizing carbon sequestration in forests and wetlands, through conservation, habitat restoration and fire management. Moreover, as stewards of the nation's natural resources, NPS demonstrates leadership in mitigating greenhouse gas emissions through sustainable and innovative practices to reduce its operational footprint, conserve energy and minimize carbon emissions from facilities, vehicles, and lands.

NPS's recently updated <u>Green Parks Plan (GPP)</u> (3rd edition, January 2023) provides an implementation road map for GHG mitigation and sustainability efforts as a component of the NPS Climate Change Response Strategy. While the Climate Change Response Strategy serves as an in-depth strategic plan for how NPS will mitigate and adapt to climate change, the Green Parks Plan provides direction for how the NPS will advance sustainability in its own operations and facilities, including goals for energy conservation and GHG emission reductions. The 2023 update establishes a goal of achieving net zero greenhouse gas emissions from across NPS's portfolio of buildings, campuses and installations by 2045, while increasing net carbon storage in Parks and resiliency of Park operations and assets. At the core of the GPP is a comprehensive and vigorous Environmental Management System (EMS) framework to guide planning, monitoring, and reporting on goals and objectives.

To implement the Green Parks Plan, many Parks engage in the [Climate Friendly Parks (CFP) Program](). Since 2003, the program has provided parks with the tools and resources to address climate change and ensure the most sustainable operations across the agency. The CFP Program promotes sustainable operations and climate change education in Parks. CFP helps each park establish a GHG emission inventory baseline and set conservation targets with meaningful actions to achieve emission reductions while emphasizing resource conservation, energy improvements, and renewable energy. By conducting GHG emission inventories, the NPS tracks progress in reaching efficiency and reduction goals and shares that progress with visitors and partners to encourage sustainable actions beyond park borders.

E. Cultural Resources and Climate Change

Cultural resources are primary sources of data regarding human interactions with climate change. At the same time, changing climates affect the preservation and maintenance of cultural resources. The NPS Directors' Policy Memorandum 14-02, *Climate Change and Stewardship of Cultural Resources*, recognizes this two-way relationship between cultural resources and climate change, and sets out major directions for adaptation, decision making, and communication for cultural resources. The NPS Cultural Resources Climate Change Strategy (2016) is a companion document to the NPS Climate Change Response Strategy that expands upon the roles of cultural resources in climate change science, adaptation, mitigation, and communication.

NPS's work to preserve cultural heritage provides an important opportunity to educate the public about the impacts of climate change on cultural resources. NPS's *Every Place has a Climate Story* project connects cultural resources and climate change in park-specific stories of experiencing climate change, learning from the past, and understanding how the present came to be. NPS's Climate and Culture Community of Practice is a forum for park, regional, and program staff and partners to share current projects and issues. NPS partners with non-governmental organizations to bring cultural heritage to international climate change meetings.

NPS contributes to scientific knowledge on the impacts of climate change on cultural resources. The NPS Cultural Resources Climate Change Impacts Table details impacts from climate change to cultural resources. Ice Patch Archeology links researchers and Native Americans in inventory and research of artifacts exposed by melting ice patches in mountain parks. Regional and park-based vulnerability assessments are linking climate projections to effects on cultural resources.

Considerations of climate change impacts on cultural resources and adaptation options are included in NPS's climate change scenario and planning frameworks, the Cultural Resources Climate Change Strategy, and the Coastal Adaptation Strategies Handbook. Collaboration and guidance on cultural resources management at landscape and multi-agency scales is ongoing with federal, state, tribal, and other partners. Guidance for climate change and disaster resilience is included in the Secretary of the Interior's Standards for the Treatment of Historic Properties, and the Illustrated Guidelines on Sustainability for Rehabilitating Historic Buildings.

F. Communications

NPS is ideally positioned to advance public dialogue on climate change. Parks serve as living laboratories where the effects of climate change can be readily demonstrated across space and time. NPS is committed to engaging visitors, communities, stakeholders, and partners on this critical issue, and inspiring positive action that secures the best possible future for parks and people. Communication is an essential feature of the 2010 NPS Climate Change Response Strategy. CCRP promotes innovative techniques and engagement practices to connect with audiences, encourage public involvement, and inspire personal action; CCRP also showcases NPS climate change adaptation and mitigation efforts and develops training to provide staff with the most up-to-date knowledge, skills, and tools to address climate change.

In 2016, CCRP released the National Climate Change Interpretation and Education Strategy to guide service-wide efforts. The strategy sets forth a framework by which parks and programs can integrate climate change topics into existing programming. Efforts include development and delivery of interpretive training opportunities, place-based interpretive media, and opportunities for the K-12 education community. To support these efforts, the Climate Change Communication Toolkit (3CT) has been developed as an online companion to the strategy, supporting interpretation and education personnel with resources that facilitate the inclusion of climate change topics in programming. The 3CT is organized across five broad topics that provide resources designed to help communicators make their messages both relevant and local.

CCRP maintains a wide range of formal and informal channels of communication for a variety of audiences. These resources include: 1. an NPS climate change website; 2. a webinar series featuring climate change experts speaking on topics relevant to parks; 3. a monthly newsletter to share climate-related activities from NPS central offices, regions, programs, and parks; 4. online videos, briefing statements, and a self-study training module for interpreting climate change; 5. an online community of practice for park interpreters; 6. trainings for staff and volunteers; 7. media and public information services in support of science communications; and 8. internship opportunities in park interpretation and education operations.

Regional and Park Level Implementation

The impacts of climate change on park resources vary widely, given the range of geomorphic and ecological conditions across the U.S. protected area system, as well as cultural, social, and economic conditions of local stakeholders. While the NPS Climate Change Response Strategy creates a framework for strategic action, and NPS's CCRP provides guidance, tools and technical support to assist national Parks in addressing climate change impacts, individual NPS regional offices and units are by necessity granted wide flexibility to develop their own strategies that address local climate change trends, risks, vulnerabilities, and projected impacts. At the park level, climate impacts are increasingly factored into infrastructure expenditures and planning, as well as Resource Stewardship Strategies for individual parks or protected areas.

Landscape Scale Adaptation to Climate Change

National protected areas often sit within broader ecosystems of landscapes that share common challenges due to climate change, but that reflect multiple land uses and ownership. Collaboration among diverse stakeholders representing multiple jurisdictions and land uses is critical to build resilience to the impacts of climate change and other risks to natural and cultural

resources that are shared across large transboundary landscapes. Beginning in 2009, DOI sponsored and facilitated a network of 22 **Landscape Conservation Cooperatives** (LCCs) covering the United States and adjacent areas in Canada, Mexico, and the Caribbean. The LCCs are autonomous cooperatives that engage federal and state agencies, NGOs, and local stakeholders to develop coordinated conservation and climate change adaptation strategies across large landscape areas. Through the work of these 22 autonomous cooperatives, and DOI's ongoing landscape-scale conservation work, several tools have emerged that guide the process of bringing stakeholders together, establishing a common scientific understanding of risks and challenges, and building consensus around management responses.

The concepts and tools that emerged from these 22 parallel efforts remain valid, are still being applied in several of the LCCs, and can be adapted to transboundary landscape contexts in other parts of the world. The LCC effort in the United States and its neighbors is informing global landscape-scale conservation efforts that connect multiple stakeholders across multiple jurisdictions to build resilience to climate change. Domestically, our focus on landscape-scale conservation is gaining renewed momentum as we implement the "America the Beautiful" initiative, the United States' signature initiative to implement a global challenge for countries to conserve 30% of their lands and waters by 2030. (See **Annex 1** for more information and resources, and **Annex 2** for demonstration examples).

III.   Conclusions on Universal Best Practices.

Climate change is a growing threat to natural and cultural resources, within and beyond national protected areas. Protected areas have a key role to play in harnessing science to understand the impacts of climate change on these resources, developing and implementing adaptation strategies, storing carbon and mitigating emissions, and building public awareness about climate change. Key best practices discussed in this paper include:

- Developing a strategy and institutional expertise to build capacity across the protected area program in understanding, adapting to, mitigating, and educating the public about climate change.
- Using tools such as climate risk and vulnerability assessment, futures scenario planning, and adaptive management approaches to understand and adapt to climate change's impacts
- Developing forward-looking goals that not only consider past experiences of climate-change related impacts, but also take into account uncertain future impacts by considering multiple plausible future scenarios.
- Factoring plausible future impacts of climate change into new facility investments, infrastructure design, and resource stewardship strategies.
- Partnering with neighboring communities, landowners, and other stakeholders to develop landscape scale climate change adaptation and resilience strategies.
- Managing protected areas to optimize carbon storage and mitigate emissions from protected area operations.
- Understanding how climate change impacts cultural resources and protecting them from those impacts.
- Optimizing the potential for protected areas to build public awareness about climate change.

Annex I: Tools and Resources

National Park Service (NPS) Climate Strategy, Policies and Guidance

The National Park Service Climate Change Response Strategy (2010, September), https://www.nps.gov/subjects/climatechange/upload/Climate-Change-Response-Strategy_508.pdf guides all policies related to climate change. It provides direction to the agency and employees for addressing and lessening the effects of climate change. It describes goals and objectives to guide our actions to protect the natural and cultural resources under our care through the four areas of emphasis: science, adaptation, mitigation, and communication. (To be updated 2023).

Planning for a Changing Climate: Climate-Smart Planning and Management in the National Park Service (2021). https://irma.nps.gov/DataStore/DownloadFile/662814. This guide helps NPS planners and managers develop robust climate change adaptation strategies to better protect park resources and assets today and for future generations. The document incorporates scenario planning concepts in the climate-smart framework to advance adaptation planning in the NPS.

Applying National Park Service Management Policies in the Context of Climate Change (2012, March). https://www.nps.gov/subjects/climatechange/upload/PM-12-02-Management-in-Context-Climate-Change-508Compliant.pdf. Addresses emergent questions regarding the influence of climate change on the guiding principles of park natural resource management, and specifically focuses on how climate change relates to (1) "impairment," and (2) NPS Management Policies directive to maintain "natural" conditions and processes within parks.

Climate Change Action Plan (2012, November), https://www.nps.gov/subjects/climatechange/upload/CCActionPlan-508compliant.pdf. Building on the Climate Change Response Strategy, this document lists high-priority actions the National Park Service is committed to undertake to address climate change in national parks. It provides guidance to help NPS staff prioritize decisions so that actions are focused and integrated across the Service.

Climate Change and Stewardship of Cultural Resources, policy memorandum (2014, February). https://www.nps.gov/policy/PolMemos/PM-14-02.htm. Provides guidance and direction to the National Park Service regarding the stewardship of cultural resources in relation to climate change.

Addressing Climate Change and Natural Hazards for Facilities, policy memorandum (2015, January). https://www.nps.gov/policy/PolMemos/PM_15-01.htm. Provides guidance on the design of facilities to incorporate impacts of climate change adaptation and natural hazards when making decisions in national parks.

Addressing Climate Change and Natural Hazards: Facility Planning and Design Considerations, Level 3 Handbook (January 2015; modified 2018, April) https://www.nps.gov/dscw/upload/AddressingClimateChangeAndNaturalHazards-Level3Handbook_Jan2015_041218AF2.docx. Guides national park personnel in planning and designing facilities that accommodate existing and projected climate change and other natural hazards.

The Facts About Resource Stewardship Strategies. https://www.nps.gov/goga/learn/management/upload/RSS-Fact-Sheet.pdf. A Resource Stewardship Strategy (RSS) is a long-range planning document for a national park unit to achieve its desired natural and cultural resource conditions. The RSS serves as a bridge between the park's foundation document and everyday management of its natural and cultural resources.

Climate Change Vulnerability Assessment

Climate change vulnerability assessments in the National Park Service: An integrated review for infrastructure, natural resources, and cultural resources (revised 2022). https://doi.org/10.36967/2293997. Available at: https://irma.nps.gov/DataStore/DownloadFile/675630. An assessment of climate vulnerabilities is important for developing proactive management plans to respond appropriately to climate change. Vulnerability assessments typically evaluate exposure and sensitivity of the assessment targets and evaluate adaptive capacity for living resources. Chapters in this report review and evaluate climate vulnerability assessments of National Park Service units and resources including infrastructure, natural resources, and cultural resources. Striking results were the diversity of approaches to conducting vulnerability assessments, the small number of vulnerability assessments for National Park Service cultural resources, and the large differences in the "state of the science" of conducting assessments among the three resource groups. Vulnerability assessment methodologies are well established for evaluating infrastructure and natural resources, albeit with very different techniques, but far less is known or available for designing and/or conducting cultural resources assessments.

Adaptive Management

Adaptive management: The U.S. Department of the Interior Technical Guide (2009). https://www.doi.gov/sites/doi.gov/files/uploads/TechGuide-WebOptimized-2.pdf; Adaptive Management: The U.S. Department of the Interior Applications Guide (2012). https://www.doi.gov/sites/doi.gov/files/uploads/DOI-Adaptive-Management-Applications-Guide-WebOptimized.pdf Adaptive management is framed within the context of structured decision making, with an emphasis on uncertainty about resource responses to management actions and the value of reducing that uncertainty to improve management. The Technical Guide presents an operational definition of adaptive management, identifies the conditions in which adaptive management should be considered, and describe the process of using adaptive management for managing natural resources. The Applications Guide provides, through examples, a better understanding of how adaptive management can be implemented in the field. The applications guide builds on the Technical Guide, and illustrates the elements of adaptive management with a large number of natural resource examples.

Scenario Planning

Climate Change Scenario Planning Showcase, https://www.nps.gov/subjects/climatechange/scenarioplanning.htm. This NPS web-page includes several examples of climate change scenario planning at National Parks, Monuments, and Historic Sites.

Conservation under uncertainty: Innovations in participatory climate change scenario planning from U.S. national parks, Miller, B., Schuurman, G., Symstad, A., Runyon, A., Robb, B., Conservation Science and Practice, Volume 4, Issue 3, e12633 (2022, February), https://doi.org/10.1111/csp2.12633. Available at https://conbio.onlinelibrary.wiley.com/doi/10.1111/csp2.12633. Scenario planning allows managers to work with uncertainty and prepare for a wide range of changes. It uses a small set of scenarios—descriptions of potential future conditions—to help them make robust decisions. The major challenge in using scenario planning for adapting management to climate change is integrating complex, cutting-edge climate science with manager expertise. This recent paper in the journal Conservation Science and Practice synthesizes current best practices for using climate change scenario planning. It describes a field-tested approach grounded in management priorities.

Supplemental Guidance: Integration of Climate Change Scenario Planning into the Resource Stewardship Strategy Process, National Park Service. (2020, February). https://irma.nps.gov/DataStore/DownloadFile/640179. A companion to the Resource Stewardship Strategy Development Guide, developed in 2019, this document provides a guide to address climate change more thoroughly in resource stewardship strategies through scenario planning. Scenario planning

enables stakeholders to identify key climate sensitivities in resources and management concerns, examine a range of relevant and plausible future conditions, and explore management options that can be appropriate and effective across a range of potential futures. The intent of this guidance is to provide a repeatable methodology that the National Park Service can use to better incorporate scenarios and climate science into resource stewardship strategies.

The Resist-Accept-Direct Decision Framework (RAD)

Climate change presents a complex management problem because it combines a persistent change across landscapes and is very difficult or impossible to address locally. It can bring about either desirable or undesirable new conditions. The RAD framework provides a tool that managers and decision-makers can use to manage wildlife and habitat in response to ecological transformation. The RAD Framework outlines three management responses:

- o Resist the trajectory of change, by working to maintain or restore ecosystem processes, function, structure, or composition based upon historical or acceptable current conditions.
- o Accept the trajectory of change, by allowing ecosystem processes, function, structure, or composition to change, without intervening to alter their trajectory.
- o Direct the trajectory of change, by actively shaping ecosystem processes, function, structure, or composition towards desired new conditions.

https://www.nps.gov/subjects/climatechange/resistacceptdirect.htm

Mitigation

Green Parks Plan: Advancing the National Park Service Mission Through Sustainable Operations (3rd Edition, January 2023), https://www.nps.gov/subjects/sustainability/green-parks.htm provides direction, including goals and measurable objectives, for how to reduce the National Park Service's contributions to the climate crisis

Landscape-Level Conservation and Collaboration

The following tools, used by a variety of DOI agencies, support landscape conservation cooperation:

Recommended Practices for Landscape Conservation Cooperation Design (LCD): A practitioner's guide to strengthening conservation delivery by bringing people together to prioritize and coordinate actions on the ground. LCD is a partner-driven approach to achieve a sustainable, resilient landscape that meets the ecological and social needs of current and future generations. It is an iterative, collaborative, and holistic process resulting in spatially explicit products and adaptation strategies that provide information, analytical tools, maps, and strategies to achieve landscape goals collectively held among partners. It puts stakeholders at the center of conservation efforts, empowers them at all levels of the decision-making process and optimizes operations by aligning partner actions to achieve outcomes at appropriate scales.

Rapid Ecoregional Assessments (REAs): REAs seek to identify important resource values and patterns of environmental change that may not be evident when managing smaller, local land areas. REAs look across all lands in an ecoregion to identify regionally important habitats for fish, wildlife, and species of concern. Then, REAs gauge the potential of these habitats to be affected by four overarching environmental change agents: climate change, wildfires, invasive species, and development (both energy development and urban growth).

The Collaborative Conservation and Adaptation Strategy Toolbox (CCAST): CCAST is a multi-organizational partnership directed by the US Fish and Wildlife Service and Bureau of Reclamation and staffed by a growing network of coordinators. It supports efforts to address non-native aquatic species, drought adaptation, grassland restoration, and pollinator conservation. It provides a platform for syntheses and decision-support tools and provides a central location to share and learn from Case Studies.

This collaboration serves as a community for conservation professionals to highlight their work. Furthermore, it builds on the next generation of practitioners by investing in students and emerging professionals while they develop writing skills and create useful tools for those in the field. The CCAST Team cooperates with over 150 individuals from dozens of organizations to increase and improve communication, develop tools to support landscape conservation and restoration, inform management decision-making, and develop actionable science.

USGS's National and Regional Climate Adaptation Science Centers (CASCs): A partnership-driven program that teams scientific researchers with natural and cultural resource managers and local communities to help fish, wildlife, waters, and lands across the country adapt to changing conditions.

Ecosystem Services Assessment and Valuation: Ecosystem services are the benefits that nature provides to human well-being: clean air and water, protection from natural disasters, fisheries, crop pollination, and control of pests and disease, and outdoor places for recreation, solitude, and renewal. Ecosystem services underlie the functioning of our entire economy and are a primary means through which the impacts of climate change on human lives and livelihoods manifest. By integrating the physical sciences, geography, and economics and other social sciences we can better understand how ecosystems provide value to people, and how to protect and enhance that value.

Annex II: Case Studies

A. Resist-Accept-Direct (RAD) Case Studies

1. Glacier National Park

In Glacier National Park, warming waters due to climate change-driven loss of glaciers and rising air temperatures—in combination with competition with invasive lake trout—threaten native bull trout populations. Without action, managers feared, bull trout within an important park drainage (Logging Creek) faced the prospect of extirpation. Park staff made the decision several years ago to move bull trout upstream above an impassable waterfall into Grace Lake, to conserve the species in cooler waters to which it is adapted without competition from lake trout. This action seeks to *direct* the ecological trajectory of the population (via managed relocation to newly suitable habitat) and also *directs* change in the ecology of upper Logging Creek, an area previously altered by human activity and the introduction of Yellowstone cutthroat trout. The park continues to supplement this action by rearing and introducing additional bull trout into upper Logging Creek and monitoring the introduced population. **For more information click here.**

USGS

2. Rocky Mountain National Park

Rocky Mountain National Park's management actions span the range of the Resist-Accept-Direct framework. Riparian areas in the park are declining due to stressors including increased ungulate herbivory. The resulting biome shift to a grassland state not only provides fewer ecosystem services but will be less able to naturally resist climate change as impacts increase in the future. In the Kawuneeche Valley, actions are being proposed to *resist* the biome shift by restoring streams and wetlands within the valley to retain healthy willow-beaver riparian wetlands. In intensely burned wilderness areas within the park, managers are *accepting* that changing fire regimes may drive burned forest and wetland ecosystems into an entirely different ecosystem post-fire. Lastly, the park is acting to *direct* change in the wildland-urban interface (WUI) in lodgepole pine forests by thinning and burning forest fuels to promote the expansion of aspen forests rather than lodgepole pine predominant forests. **For more information click here.**

Koren Nydick / NPS

3. Indiana Dunes National Park

Historically, Indiana Dunes National Park (INDU) was home to one of the largest populations of the federally endangered Karner blue butterfly (KBB). This area in northern Indiana is the

warmest part of the historical KBB range, and has warmed considerably since the mid-20th century. KBB subpopulations in a constellation of sites in and near the park experienced a broadly synchronous decline starting in the early 2000's, until an extreme heat wave in the summer of 2012 extirpated the remnants (with the last two individuals seen in 2014). In the preceding years, the park and partners attempted to *resist* the loss of the KBB through population augmentation via captive rearing and release, but these attempts were unsuccessful in halting the declines or forestalling extirpation. Park managers have now *accepted* the loss of the KBB and manage formerly KBB-occupied habitat for other savanna specialists.

Gregor Schuurman/Wisconsin Department of Natural Resources

4. Cuyahoga Valley National Park

Cuyahoga Valley National Park, in northeastern Ohio, devotes considerable resources to fighting invasive species, including black locust (*Robinia pseudoacacia*), a species native to southern Ohio and nearby southwestern Pennsylvania, as well as states further south. However, the park is

now rethinking its approach in recognition of ongoing trends and projections of warming temperatures and increasing precipitation. Whereas until recently this new arrival was categorized as an "invasive" (undesirable) species and its establishment strenuously *resisted*, black locust is now viewed as a regionally native species simply shifting its range northward "naturally" as it tracks climate change, and distinguished from "problem" species not native to North America. In this view, *accepting* the black locust represents not only a money-saver but also an articulation that ecosystem stewardship and conservation in an era of sustained, directional climate change increasingly means working with climate change-driven native biodiversity redistribution.

Larry Allain / USGS (WARC)

B. Examples of scenario planning in the NPS

- **Wind Cave National Park**, 2021. Wind Cave National Park participated in a project to apply the lessons from a pilot project at a nearby park (Devils Tower National Monument, below). Wind Cave integrated climate change scenario planning with a Resource Stewardship Strategy—a long-range planning tool that helps identify and achieve desired natural and cultural resource conditions in a park.

- **White Sands National Park**, 2021. A White Sands National Park climate change scenario planning workshop developed and used a set of robust climate-resource scenarios to elucidate key vulnerabilities and critical knowledge gaps that managers and researchers, respectively, can address.

- **Devils Tower National Monument**, 2020. Devils Tower National Monument participated in a first-of-its-kind, pilot project in 2017 and 2018 to dovetail climate change scenario planning with development of a Resource Stewardship Strategy.

- **Big Bend National Park**, 2019. NPS Climate Change Response Program scientists informed a major Big Bend National Park infrastructure investment decision by clarifying the relationship between climate and Oak Spring—the sole water source for visitors in the Chisos Basin—and using a scenario-based approach to characterize long-term reliability of discharge from the groundwater spring.

- **Badlands National Park and partners**, 2016. A southwest-South Dakota climate change scenario planning workshop, focusing on Badlands National Park and nearby tribal lands and the Buffalo Gap National Grassland, identified priority resource management and climate uncertainties, developed relevant and divergent local climate summaries, and then used them to develop climate-resource scenarios and test management options.

    - **This Badlands project brief** summarizes results of a follow-on collaborative effort—involving resource managers, subject-matter experts, and a larger climate change adaptation team—to identify potential climate impacts and management responses in Badlands National Park for priority natural and cultural resources, including bison and black-footed ferrets, the mixed grass prairie in which they live, and historic buildings, trails, and roads.

- **Knife River Indian Villages National Historic Site and partners**, 2016. A central-North Dakota climate change scenario planning workshop, focusing on Knife River Indian Villages National Historic Site and nearby tribal and state lands, identified priority resource management and climate uncertainties, developed relevant and divergent local climate summaries, and then used them to develop climate-resource scenarios and test management options.

- **Acadia National Park**, 2015. An Acadia National Park climate change scenario planning workshop, designed as a training program to increase participants' capabilities to develop and use scenarios, focused on understanding and preparing for climate change impacts on

coastal and inland infrastructure, staffing and park operations, and ecosystem management.

- **Apostle Islands National Park**, 2015. An Apostle Islands climate change scenario planning workshop used regional climate science to craft local scenarios for the park and the surrounding lake (Lake Superior, one of the fastest-warming lakes in the world), to inform both resource management and infrastructure (dock) development.

- **Isle Royale National Park**, 2013. Isle Royale National Park and partners used scenario planning to explore the range of ways in which climate, species interactions, ecosystem processes, and lake conditions might change and ultimately inform a decision to supplement a dwindling population of the island's first known wolf population, which had inhabited the island since the 1940s.

C. **Landscape Conservation Design Case Studies**

Excerpted from: **Recommended Practices for Landscape Conservation Design Version 1.0, September 2018** https://lccnetwork.org/sites/default/files/Resources/LCD-Recommended-Practices-v1-092818_0.pdf

Executive Summary: This is a practitioner's guide to landscape conservation design (LCD). LCD is a partner-driven approach to achieve a sustainable, resilient landscape that meets the ecological and social needs of current and future generations. It is an iterative, collaborative, and holistic process resulting in spatially explicit products and adaptation strategies that provide information, analytical tools, maps, and strategies to achieve landscape goals collectively held among partners (LCC Network 2016a). As public-private partnerships for collaborating on landscape-scale conservation issues, the Landscape Conservation Cooperatives (LCC) have had years of experience with LCD. Staff from across the LCC Network assembled these recommended practices to provide practical guidance for anyone looking to facilitate or participate in an LCD process (design process).

This guide contains five sections covering major themes in LCD. Each section describes vetted practices one or more LCCs have used in their LCD work, provides resources for further information, and presents a real-world example where the practices have been implemented. The practices are arranged in a logical order but they are not necessarily chronological. Successful LCD requires participants to revisit and refine their work; therefore, embracing iteration is an overarching theme of the process.

Section 1: "Initiating Landscape Conservation Design" recommends sound practices to implement from the outset of an LCD, such as seeking leadership support. This section also identifies actions to take at multiple points in the design process, such as evaluating compatibility with neighboring LCDs.

Section 2: "Convene Stakeholders and Frame the Landscape Conservation Design" focuses on people — how to bring people to the table and how to keep them engaged. This section offers advice for establishing a governance structure, building trust, and setting deadlines, among other topics. In addition, it describes essential steps that can harness the power of multidisciplinary participants, such as identifying stressors, agreeing on indicators, and defining objectives.

Section 3: "Assess Current and Future Desired Conditions" addresses how to use best available knowledge to characterize the current conditions of landscape elements that are important to stakeholders and forecast what may happen to them in the future, and understand what partners see as desirable outcomes. It describes techniques for identifying important drivers of change on the landscape, dealing with uncertainty, and developing plausible characterizations of the future.

Section 4: "Spatial Design" describes how to identify where on the landscape desired functions and opportunities exist — or could exist. It provides guidance on assembling a technical team to carry out these tasks and lists actions the team should take to ensure they generate products that are both useful and widely accepted.

Section 5: "Strategy Design" explains how to arrive at a design that stakeholders can use to decide which actions to take and where and when to take them. It describes products that can help partners implement desired actions such as timelines, a list of funding sources, and a monitoring plan.

The remainder of this section includes Case Studies from Section 2 and Section 5 of the guide. The source document, **Recommended Practices for Landscape Conservation Design Version 1.0, September 2018** https://lccnetwork.org/sites/default/files/Resources/LCD-Recommended-Practices-v1-092818_0.pdf, includes a full discussion of each phase of Landscape Conservation Design, including best practices and case studies for each section of the guide.

Section 2 Case study Topic: Convene Stakeholders and Frame the Landscape Conservation Design

In the following section we provide recommendations for recruiting participants and engaging them throughout the design process. We describe key actions that set the stage for LCD, including guidance on defining the strategic, geographic, and temporal boundaries of the design, identifying primary agents of change in the system, deciding what features of the landscape are of interest to stakeholders, and articulating what stakeholders want the LCD to achieve within the context of designing sustainable landscapes.

Case Study: High Divide Collaborative

The Heart of the Rockies Initiative acts as facilitator and convener of the High Divide Collaborative, and is leading a design process that can serve as the framework for conservation planning and delivery in the High Divide landscape.

The High Divide of eastern Idaho and southwestern Montana along the Continental Divide is a landscape of continental significance for wildlife connectivity. The landscape links the Greater Yellowstone Ecosystem to protected core habitats in the Central Idaho Wilderness complex and the Crown of the Continent. Public land represents a significant portion of the High Divide landscape: High Divide counties are 60-90 percent public land.

Even though there are strong economic and cultural ties between those public lands and the region's rural communities and economy, many of the region's residents and community leaders share a general mistrust of outside interests including federal and state government agencies.

This was our context when we initiated the High Divide Collaborative in early 2013 in response to opportunities for enhanced landscape conservation funding through the Land and Water Conservation Fund. Our challenge was to develop a broadly collaborative assessment of conservation priorities, and LCD became our framework.

Reflections on the value of selected recommended practices:

Practice 2.1: Identify and convene an inclusive set of partners with a shared interest in the natural and cultural resources within the defined geography.

The High Divide has a conservative political and social context and working ranchlands are central to the region's rural way of life. It was critical to engage ranchers and other local stakeholders up front in the formation of the High Divide Collaborative (Figure 4).

We invited key thought leaders from the ranching community to speak openly to the entire stakeholder assembly about their perspectives, about what they hoped to gain from the Collaborative, and what their needs were. Number one on their list was trust — trust that their needs would be heard and that the engagement would endure beyond achievement of any immediate goals.

We engaged leaders of watershed groups and conservation districts in a similar manner. The conveners also recognized the need to include local federal and state agency leaders who were viewed as credible community members to put a human face on agency management. This foundation of local stakeholders then allowed greater inclusion of a wide variety of interests including national and regional conservation groups, scientists, and conservation advocates.

Practice 2.5: Build and maintain trust.

From the outset the Collaborative has been careful to listen to all stakeholders and to provide planned, recurring opportunities for all perspectives to be heard by the entire group.

Early on, we agreed to basic standards for stakeholder participation in the High Divide Collaborative. Decisions were to be made by consensus — not everyone has to be enthusiastic about a choice, but everyone has a voice and the group is committed to bringing everyone into the decision-making. At the beginning of each of our meetings, we reiterate the value of our foundation of trust in one another, and our need to respect each other's perspectives and be responsive to each other's needs.

Figure 4. Convening stakeholders in the High Divide. Photo: Joselin Matkins

Practice 2.7: Regularly engage stakeholders for the duration of the design process.

In addition to monthly conference calls among Coordinating Committee members as well as various *ad hoc* subcommittees, the High Divide Collaborative convenes at annual two-day workshops to engage stakeholders in goal-setting, review the state of science for each resource of interest, and initiate strategy development and **scenario planning**.

The Collaborative also holds annual **conservation celebrations** with field tours to recognize progress made and actions taken within the context of our collaborative goals (Figure 5). Our in-person gatherings occur at multiple locations across our broad project area to ensure that local stakeholders can participate; in addition, this provides opportunities to reference local partnerships and their activities.

Practice 2.9: Define the design scope through discussion among the partners.

Figure 5. High Divide stakeholders evaluate and discuss options for enhancing riparian connectivity. Photo: Ilona McCarty/Open Valley Photography

A first step in our collaborative process was to clearly identify the geographic boundaries for our area of interest. The simple process of identifying our geography required considerable discussion among stakeholders over several meetings.

Next, we identified our primary conservation goals — the common ground that we could articulate into shared conservation goals as the basis of our shared vision for the future of the High Divide landscape.

Goal-setting is ongoing and dynamic. We revisit our shared goals to confirm stakeholder engagement at each of our meetings, and have refined these goals through direct stakeholder discussion throughout the life of our collaboration. We use these shared goals to develop science to inform the current status of conservation targets and their expected future status. The science informs decision-making, but it does not govern it.

Successes:

● Our deep and ongoing engagement with stakeholders takes time and yields incremental progress as our planning progresses. Our planning process coupled with stakeholder engagement reveals resource conflicts early on. As a result, our design process is adaptive and dynamic as we collectively develop and implement conservation strategies.

● Our clear demonstration of broad and deep support for our shared conservation goals has yielded strong support from our congressional delegations from both states and has resulted in substantial federal investments in our priority conservation initiatives.

Challenges:

● Many local stakeholders need travel assistance to attend meetings as they are not paid to participate in these processes.

● We have been able to sustain broad stakeholder engagement for the Collaborative's four-year lifespan, but we recognize the need to provide added value to retain this engagement. Our LCD must clearly lead to greater opportunity for effective conservation delivery if we are to sustain the Collaborative.

● Convening and facilitating a collaborative effort of this magnitude requires considerable time and resources, and demands a great deal of communication through multiple channels.

Section 5 Case study Topic: Strategy Design

A strategy design complements the spatial design (Section 4) and describes a cooperative approach toward achieving desired conditions (Practice 3.6). The strategy helps partners answer the question: *Who does what, and where?* (Campellone et al. 2018) and provides a landscape context for partner alignment when each entity plans, implements, and evaluates their conservation investments and actions. An effective design scales down to inform local conservation actions which, collectively, help to move the relevant geography toward the desired condition. Strategies that flesh out a **theory of change** for achieving desired future conditions and describe benefits of mutually reinforcing activities help partners see where their actions contribute to collective impact (Kania and Kramer 2011). Strategy design products likely include a report, communication tools, graphics, diagrams, timelines, funding and budget planning (Practice 1.5), and a plan for monitoring and evaluation (Practice 2.4). Coordinated implementation by partners should be recognized as voluntary unless or until supported by a formal planning process (e.g., the National Environmental Policy Act).

Case Study: Columbia Plateau/Arid Lands Initiative Strategic Design

The Columbia Plateau-Arid Lands Initiative (ALI) LCD complemented their spatial design with a strategy design that incorporates many of the practices described in Section 5, including practices 5.1 (Confirm compatibility with existing plans), 5.2 (Integrate spatial design with partner efforts), 5.4 (Guide implementation within a partner-defined conservation delivery network), 5.6 (Monitor, evaluate, and take action), and 5.7 (Iterate).

Although the ALI partnership initially began with a more traditional strategic conservation planning process, the partners soon adopted those key elements of a structured LCD that served to enrich and inform the links between strategy, priority locations, and the collaboration between partner resource management organizations and agencies.

Partners co-developed sets of results chains (Figure 11) based on priority strategies (protection, restoration, development, energy development, agriculture, grazing) that emerged through their conservation planning process.

Results chains are not tied to a specific place, yet they explicitly consider partner organizational mandates, roles, and strengths by describing enabling conditions and resources. Further, the results chains tie individual partner objectives to a common objective, allowing partners and stakeholders to visualize how their contributions lead to collective impact. In this example, a 'proof of concept' phase allows partners an entryway to test how the strategy design aligns with their capacity and capability and evaluate how they can commit resources (e.g., funding) and scale to a fully implemented design.
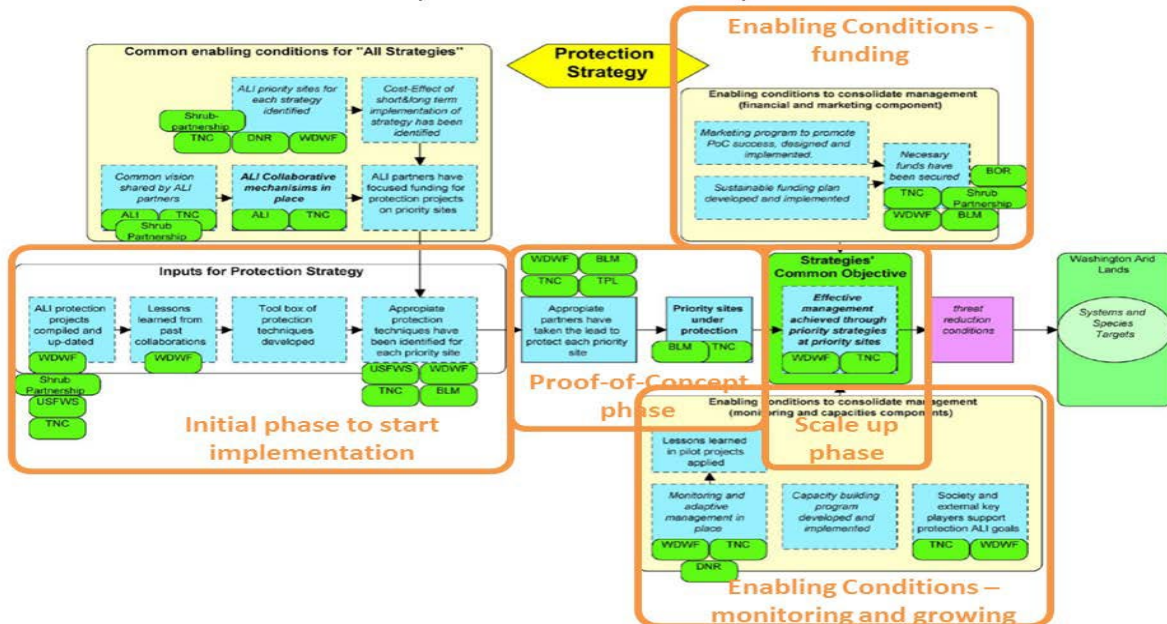

Figure 11. Results chain showing how protection strategies can lead to conservation of priority systems and species on the Columbia Plateau.

The ALI LCD also scales to site-specific considerations and maps strategies to places focused on priority core areas identified by the spatial design, as seen in the ALI Shared Priorities for Conservation at a Landscape Scale Addendum – Mapping Strategies to Places. The ALI also mapped specific strategies to particular places on the landscape by developing a suite of criteria based upon the information in the scorecards. Maps were developed that depict areas that are suited for restoration and protection strategies, as well as evaluating those priorities through the lenses of climate change and fire-risk.

Partners used a scorecard approach (Figure 12), which further integrates spatial and strategy designs and identifies how conservation actions in priority areas contribute to desired conditions for priority conservation features. Scorecards explicitly identify threats and vulnerabilities affecting the core area as well as the land managers and owners (stakeholders) that have authorities and opportunities to direct actions toward shared objectives.
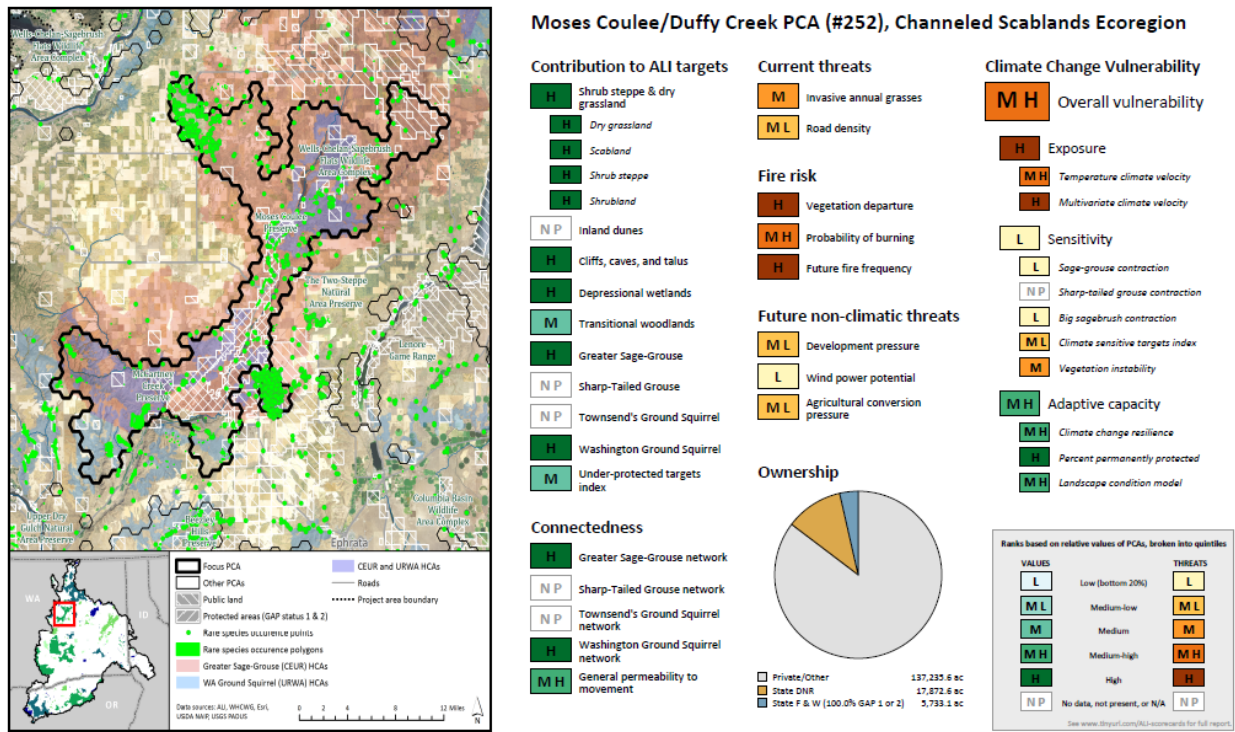

Figure 12. Scorecard for the Moses Coulee/Duffy Creek Priority Core Area relating key elements (targets, threats, vulnerabilities, etc.) evaluated in the Columbia Plateau LCD on a single page. Stakeholders with management responsibility requested this type of synthesis summary.

Scorecards both efficiently inform local managers of site-specific priorities and provide the conduit to scale up toward achieving desired landscape-scale conservation outcomes by highlighting how that priority area ranks — under a range of criteria — relative to all other priority areas in the Columbia Plateau. Not all actions need to be implemented equally across all areas, nor will all partners be involved in all strategic priorities, all phases of implementation, or in all geographies. Partners committing to specific actions in particular places both enable their

on-the-ground implementation in those areas, and help identify any gaps that require the ALI to pursue additional partners working in those areas.

The ALI strategy design anticipates shifting the role, structure, and composition of participants to efficiently engage the right people at the right time in the right place, and to effectively coordinate implementation. For example, ALI partners, led by Audubon Washington, are convening specific stakeholders in the Hanford-Yakima Training Center landscape (a subregion on the Plateau, Figure 13) to identify shared values related to reducing wildfire risk, and consequently advancing habitat connectivity goals through the collective action of multiple partners. These discussions are intended to help identify projects that stakeholders recognize as site-specific actions compatible with their economic well-being, while also contributing to the ALI partners' landscape-scale conservation goals.
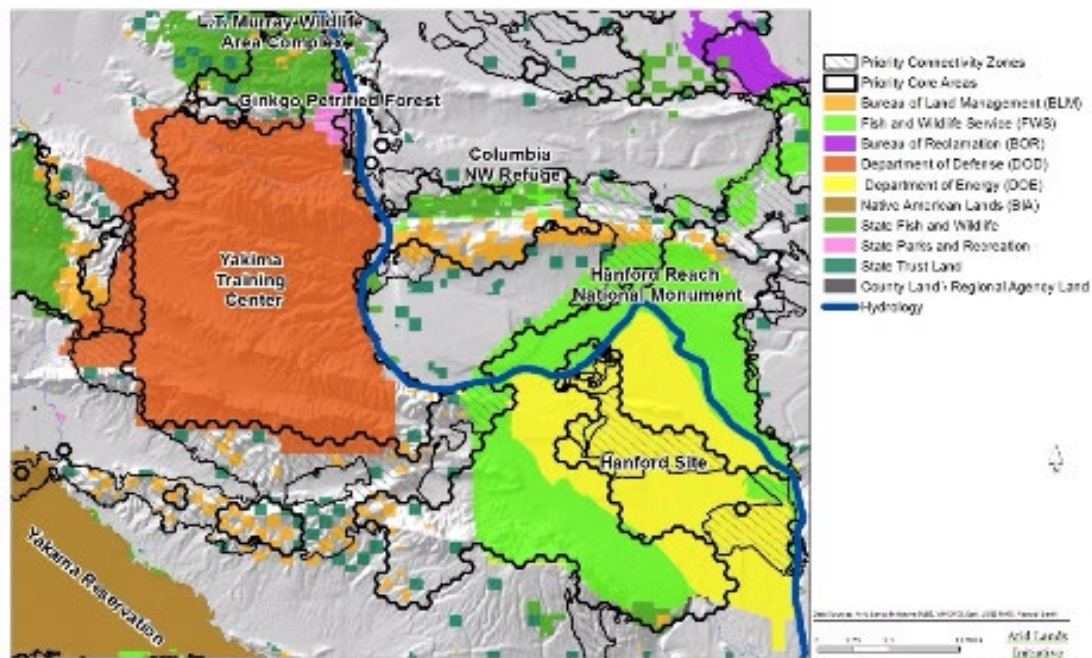

Figure 13. Mapped overlay of Priority Core Areas, Connectivity Zones, and land ownership on the west side of the Columbia Plateau.

Like many conservation projects, this LCD strategy lacks a monitoring plan tied to fundamental objectives and conservation feature indicators. In the strategic planning phase, the ALI partners identified key indicators that would inform their iteration from planning to proof-of-concept implementation, through scaling up. However, partners are currently focused on implementing shared projects or projects that contribute to the ALI's shared goals. Coordinated monitoring across the Columbia Plateau, though critical for showing progress and learning from implemented projects, has not yet risen sufficiently in priority nor obtained funding from partner or external sources to be the focus of implementation. This is not an unusual situation for LCD partners to be in. However, ALI partners fully intend iteration through proof-of-concept testing (Figure 11). Future iterations are expected to incorporate monitoring and evaluation steps to inform and enhance future conservation delivery.

**Project Phase 2.3 – Briefing Paper, Subtopic: Concessions & Commercial Services
Lead Author: Sandy Rabinowitch, Team Members: Andrea Sharon, Corky Hayes, Bob
Danley and Alan Robinson**

I.   Introduction

Concessions and Commercial services are two ways the United States (U.S.) provides visitor activities and uses in protected areas. These services provide financial benefit to the managing agency and provide local income for concessioners. Without concessions and commercial services these uses would generally not be available inside the protected area. For the U.S. National Park Service (NPS) a commercial service is any <u>visitor</u> activity provided in a park unit by a <u>third-party entity</u> that generates revenue from the provision of that service.[1] The same holds generally true for the U.S. Fish & Wildlife Service (FWS). The U.S. Bureau of Land Management (BLM) generally allows more uses of the public land governed by less restrictive regulations and procedures. Each of these major U.S. land management agencies have law, regulation, and policy that guide concessions and commercial activities within their land boundaries.

II.   Overview

This section describes how the NPS, FWS and the BLM manage Concessions and Commercial Services by providing information about how the law, regulation and policy guide agency decision making and day-to-day management.

National Park Service:

Law:
The NPS is guided by the National Parks Omnibus Management Act of 1998 (16 USC 5901). Title IV "National Park Service Concessions Management" lays out sections 401-419 which provide specific and detailed guidance.
See: https://www.congress.gov/105/plaws/publ391/PLAW-105publ391.pdf>

Regulation:
The next level of managerial guidance is found in NPS regulations at 36 Code of Federal Regulations (CFR) 5 where more detailed guidance is provided. See:
https://www.ecfr.gov/current/title-36/chapter-I/part-5>

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[1] This paper is derived from a power-point presentation by Ginger Irvine, NPS Alaska Regional Office.

It is important to note that 36 CFR section 5.3 makes it illegal to engage in or solicit business in NPS areas without a permit from the NPS. The regulation says, "Engaging in or soliciting any business in park areas, except in accordance with the provisions of a permit, contract, or other written agreement with the United States, except as such may be specifically authorized under special regulations applicable to a park area, is prohibited."

The full complement of 36 CFR Section 5 titled *COMMERCIAL AND PRIVATE OPERATIONS* includes:

Sections:
5.1 Advertisements.
5.2 Alcoholic beverages; sale of intoxicants.
5.3 Business operations.
5.4 Commercial passenger-carrying motor vehicles.
5.5 Commercial photography.
5.6 Commercial vehicles.
5.7 Construction of buildings or other facilities.
5.8 Discrimination in employment practices.
5.9 Discrimination in furnishing public accommodations and transportation services.
5.10 Eating, drinking, or lodging establishments.
5.11–5.12 [Reserved]
5.13 Nuisances.
5.14 Prospecting, mining, and mineral leasing."

Primary types of Commercial Service Authorizations (allowed by NPS regulations) include:

1.) Concession Contracts
2.) Commercial Use Authorizations
3.) Leases

Concessions Contracts (typically 10-year term)

- Authorize necessary and appropriate services required for public use and enjoyment of the parks. The 1998 Concessions Management Improvement Act requires that contracts for visitor facilities and services "...be limited to those that are <u>necessary and appropriate</u> for public use and enjoyment..."

- Necessary and appropriate determinations (for example if the protected area is remote is there a need for overnight accommodations?) are made by park staff on a case-by-case basis with considerations unique to each park. These determinations should be consistent with laws directing the purpose and management of the park area, applicable park regulations and must result in minimal impact to park resources. A service is necessary if it is needed to accomplish the park's mission and or the services are needed but unavailable in or around the park area.

- Competitive solicitation is required.

- Operators issued a concessions contract are required to operate based on the terms outlined in their contract. The contract may specify the number of days per week, trips per day, hours of operation, etc.

Examples are lodging, food and beverage facilities, and in park transportation systems like the Denali National Park (Alaska) bus system. Additional and more detailed regulations for Concessions Contracts are found in 36 CFR 51.
See: https://www.ecfr.gov/current/title-36/chapter-I/part-51?toc=1>

Commercial Use Authorizations (CUAs) (2-year maximum term)

- Authorize appropriate commercial services
- Not required services (permit holder are not required to operate).
- Typically, not competitive
- Examples are guided hiking, guided sportfishing, guided photography workshops

Leases

The NPS may issue leases for structures that are not necessary for park operations and are not eligible for authorization through a concession contract or CUA. Leased property must be used for an appropriate activity and used in a manner that is consistent with the purposes established by law for the park.

- Competitive solicitation
- May sole-source to non-profits, other federal agencies, or for short-term leases
- Term (length of time) varies

Policy:
The NPS has several levels of written policy, two of which are explained below. The highest level of policy is found in the 2006 NPS Management Policies, which is also the most current version. It sets the broad framework, provides direction, and prescribes parameters for making management decisions.

The 2006 NPS Management Policies sections 10.1 Leasing; 10.2 Concessions; and 10.3 Commercial Use Operations explain in detail a myriad of topics based on the rapidly expanding level of public use and need for management oversight from the past several decades.
See: https://www.nps.gov/orgs/1548/upload/ManagementPolicies2006.pdf>

The next level down are Director's Orders, which provide more detailed interpretation of Management Policies, delegate specific authorities and responsibilities, and may articulate new or revised policy on an interim basis between publications of *Management Policies*. The main target audience for Director's Orders are superintendents and other managerial staff, for whom they serve as an "executive summary" of important policies and procedures.

Pertinent NPS Director's Orders include #48A Concessions; and #83 Public Health. See: https://www.nps.gov/policy/DOrders.cfm>

Guidance:
Additionally, in 2018, the NPS released the Commercial Services Guide which provides detailed procedures to implement current laws, regulations, Executive Orders, Department of the Interior (DOI) policies and guidance, NPS Management Policies 2006, and other NPS policy and guidance related to commercial services. See: https://home.nps.gov/subjects/concessions/upload/CS-Guide-Final-Ver-3-FINAL-Updated-12162021.pdf> (This replaced NPS Director's Order #48B)

U. S. Fish & Wildlife Service (FWS)

Law:
The Director of the FWS can "enter into contracts with any person or public or private agency through negotiation for the provision of public accommodations when, and in such locations, and to the extent that the Secretary determines will <u>not</u> be inconsistent with the primary purpose for which the affected area was established." (16 USC 668dd (b) (1)) This is normally accomplished by writing a plan for each refuge known as a "Comprehensive Conservation Plan" and accomplishing its approval by the Director. See: https://www.fws.gov/policy/603fw2.html#:~:text=2.3%20What%20is%20the%20compatibility,use%20is%20a%20compatible%20use.>

(National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997). (16 USC 668dd-668ee) See: http://uscode.house.gov/view.xhtml?req=16+USC+668dd&f=treesort&fq=true&num=9&hl=true&edition=prelim&granuleId=USC-prelim-title16-section668dd>

Regulation:
"Public use facilities may be operated by concessionaires or cooperators under appropriate contact or legal agreement on national wildlife refuges where there is a demonstrated justified need for services or facilities including, but not limited to, boat rentals, swimming facilities, conducted tours of special natural attractions, shelters, tables, trailer lots, food, lodging, and related service" (50 CFR 25.61 (Subpart F-Concessions)) See: https://www.ecfr.gov/current/title-50/chapter-I/subchapter-C/part-25/subpart-F/section-25.61>

Policy:
Project Leaders may allow concession contracts to provide or enhance appropriate and compatible wildlife-dependent recreation and other activities detailed in the National Wildlife Refuge System Improvement Act of 1997. (630 FW 6 Overview of Concessions, Authorities, and Responsibilities). See: https://www.fws.gov/policy/630fw6.html>

Bureau of Land Management (BLM)

Law:
"…the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1732, 1733, 1740) authorize the Secretary of the Interior to issue regulations providing for the use, occupancy, and development of the public lands through leases, permits, and easements" See sections 1732, 1733 and 1740. See:
https://uscode.house.gov/view.xhtml?path=/prelim@title43/chapter35&edition=prelim>

Regulation:
"The purpose of the regulations in this part is to establish procedures for the orderly and timely processing of proposals for non-Federal use of the public lands. The procedural and informational requirements set by these regulations vary in relation to the nature of the anticipated use"
In contrast to the NPS and FWS, the BLM regulations have greater allowance for uses of the public land. "Any use not specifically authorized under other laws or regulations and not specifically forbidden by law may be authorized under this part. Uses which may be authorized include residential, agricultural, industrial, and commercial, and uses that cannot be authorized under Title V of the Federal Land Policy and Management Act or section 28 of the Mineral Leasing Act. Land use authorizations shall be granted under the following categories" (43 CFR2920.1) See: https://www.ecfr.gov/current/title-43/subtitle-B/chapter-II/subchapter-B/part-2920>

Policy:
BLM policy is contained in a December, 2015 instructional memorandum. Key points are quoted below.
"This Instruction Memorandum (IM) establishes guidance related to existing 'concession' leases and new commercial leases, for recreation related businesses. These commercial leases on Bureau of Land Management (BLM) administered lands consists of one instrument authorized under the Federal Land Policy and Management Act, 43 U.S.C. 1701, et seq., 43 U.S.C 1732, as codified at 43 CFR 2920. This policy is necessary to ensure that appropriate statutory and regulatory authorities are used for all commercial leases for recreation related businesses."
"In addition, this IM clarifies that a leaseholder's request to provide recreation and recreation related services on public lands and waters located outside the scope of the lease will be processed as a special recreation permit authorized under the Federal Lands Recreation Enhancement Act, PL-579 Sec3.2 (h), as codified at 43 CFR 2930."
See: https://www.blm.gov/policy/im-2016-030>

III.   Conclusions and Universal Best Practices

1. Concessions and commercial services can be a useful addition to protected area management. They can provide otherwise unavailable services which enhance the protected area use, provide some local jobs (helping the local economy) while also providing some revenue back to the government.

2. Concessions and commercial services have become highly regulated (managed) in the U.S. This has evolved to better protect the resources and values of each protected area and to provide fair, open and honest management of the programs and money involved.

3. Implementing a poorly planned and or poorly managed concessions and commercial services program in protected areas can create significant opportunity for corruption, nepotism, and the lack of concern for public health, protected area resources, and general public welfare.

4. Laws, regulations, and policies should be adapted to the needs of each country. Services that are appropriate and necessary should be developed incrementally. Consider offering a temporary service to evaluate impact and demand. End or modify the program based on your analysis of the temporary offering.

5. To ensure compliance with laws, regulations and policies, services provided locally should be reviewed regularly by a compliance team of professional staff not directly associated with operating the program. Financial aspects of the program should be regularly audited to prevent corruption, nepotism, lack of concern for the public welfare, and negative impacts to area resources.

6. Operating a well-run concessions and commercial service program takes planning, dedicated staff, and continued effort. It is not a one-time decision that simply continues. Term-lengths for leases, contracts, concessions, and permits should start with relatively short time-frames to allow more frequent opportunities to modify the service offerings or conditions. Performance should be reviewed frequently. A system to correct or remove poor performing operators should be developed as part of any commercial services program.

7. Written legal guidance (law, regulation and policy) is essential to have a consistent, honest and well-functioning concession and commercial service program that the public has trust and confidence in.

8. Once legal guidance is in place, a number of checklists can be easily developed for those who monitor/audit programs to streamline record-keeping and to increase public transparency.

DEPARTMENT OF THE INTERIOR - INTERNATIONAL TECHNICAL ASSISTANCE PROGRAM
GEORGIA PROTECTED AREAS POLICY REVIEW
JULY 2022

Briefing Paper, Visitor Use Management
Lead Author: Robin Lewis, Team Members: Kerri Cahill, Sandy Rabinowitch,
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I. Introduction.

Several federal agencies in the United States have various responsibilities for managing some of America's most extraordinary landscapes, historical sites, and culture resources, sharing them with millions of visitors each year and protecting them for generations to come. Protecting sensitive natural and cultural resources while providing visitors with meaningful ways to connect to their public lands is a balancing act land managers engage in daily. To ensure these special places and the benefits they generate persist into the future, these federal agencies collectively developed and use a proactive and adaptive process called visitor use management (VUM) [1] to guide planning efforts and inform decisions across public lands and waters nationwide. Using flexible and scalable VUM strategies and tools, the agencies can ensure appropriate and equitable access to iconic landscapes while protecting the nationally significant resources that draw people to these lands and waters in the first place.

II. Overview and Discussion

Land management agencies and academic institutions have used varying methods to assess desired recreational experiences and measure the impacts of visitor use levels, activities, and behaviors, on natural and cultural resources and visitor experiences (e.g. Recreation Opportunity Spectrum, Limits of Acceptable Change). [2, 3] Over the years, these concepts have provided an important foundation for the current approach to visitor use management and the development of the Visitor Use Management Framework (the framework). [4] Today, the agencies apply the framework to recreation and visitor use-related projects and plans. The framework is intentionally scalable and flexible, allowing managers to adjust the level of effort and resource investment to develop long-term strategies more efficiently and effectively for providing access, connecting the public to key visitor experiences, and protecting resources. The framework includes four major elements (see Figure 1) for analyzing and managing visitor use:

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[1] *See* Interagency Visitor Use Management Council website.
[2] *See* The Recreation Opportunity Spectrum: A Framework for Planning, Management, and Research
[3] *See* The Limits of Acceptable Change (LAC) System for Wilderness Planning
[4] *See* Visitor Use Management Framework: A Guide to Providing Sustainable Outdoor Recreation
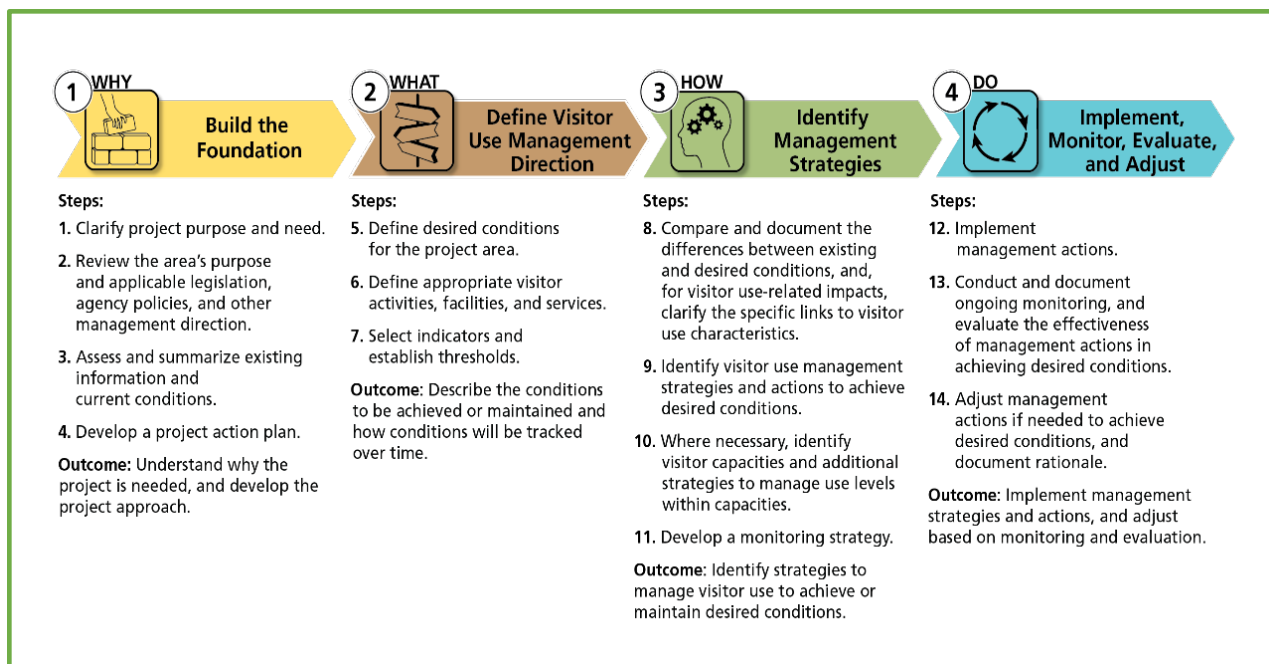
Figure 1.

While the elements are presented in a linear order, they are highly iterative in nature, meaning steps may be revisited and reassessed throughout the planning and decision-making process. Common to all elements is the need to consider applicable laws, agency policy, public engagement, and the "sliding scale of analysis"—ensuring the investment of time, money, and other resources for the planning effort is commensurate with the complexity of the situation and the consequences of the decision.

Lastly, while this briefing paper discusses the framework using an NPS case study, it is shared across six federal agencies, including the Bureau of Land Management, United States Forest Service, United States Fish and Wildlife Service, the United States Army Corps of Engineers, and the National Oceanic and Atmospheric Association. The agencies all have laws, policies, and processes that are distinct from NPS, and the framework's ingrained flexibility and scalability ensures its elements are applicable to the VUM needs of these entities as well. The framework and other related guidance developed by the Interagency Visitor Use Management Council is also being applied in non-federal public lands and waters in the United States, as well as being adapted for use in other countries such as Brazil, Canada, and Palau.

III.   Case Study: The Framework in Action

In 2020, Delaware Water Gap National Recreation Area (DEWA) completed a comprehensive Visitor Use Management Plan using the framework described above.[5] DEWA is a nearly 70,000-acre park along the Middle Delaware National Scenic and Recreational River on the border of Pennsylvania and New Jersey. It is one of the top 20 most-visited national parks, partly because it

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[5] *See* DEWA Visitor Use Management Plan

is within a 2-hour drive of both New York City and Philadelphia. After identifying the need for the plan and determining the level of analysis, the park engaged in extensive stakeholder and public outreach that included listening sessions, focus group meetings, and an online comment period. Information from this preliminary planning stage helped to inform the issues, goals, and actions within the VUM plan. Ultimately, the plan provides a detailed roadmap to maximize NPS's ability to encourage access, improve visitor experiences, and protect the natural and cultural resources of the National Recreation Area. Below are selected aspects of the plan that help to illustrate the use of various steps from the framework:

Element 1: The Why
Step 3: Assess and summarize existing information and current conditions.

Park managers recognized that water-based recreation along the Middle Delaware National Scenic and Recreational River was increasing in popularity, leading to unintended impacts to the park's sensitive riparian vegetation as well as influencing the experiences some visitors were coming to seek, such as solitude. Visitation grew from about 2 million visitors in the 1980s to a peak of 5.2 million in 2010.

Element 2: The What
Step 5: Define desired conditions for the project area.
Step 7: Select indicators and establish thresholds.

Building from the issues identified along the river, the plan established desired conditions for that zone of the park. Desired conditions are statements of aspiration that describe resource conditions, visitor experiences and opportunities, and facilities and services that an agency strives to achieve and maintain in a particular area. For this zone, that included:
- *Visitors experience shorelines that are largely undeveloped with natural processes predominating.*
- *Visitors have a range of high- and low-density experiences.*

The plan also determined indicators—measurable conditions related to visitor use—and thresholds—the minimum acceptable condition for each indicator—to help managers assess, through monitoring, if the desired conditions are being met.

- **Indicator:** Extent of Visitor-Created Trails
  - **Threshold:** No more than 4 miles of visitor-created trails within the riparian area or no more than 5% damage to a specific species of concern.
- **Indicator:** Number of Unauthorized Campsites
  - **Threshold:** No more than 10 unauthorized campsites within 100 feet of a designated recreation site or campsite or within 1 river mile.

If visitor-created trails and campsites begin to proliferate in this zone, affecting the amount and type of vegetation and possibly introducing invasive species, it could potentially impact natural processes, along with the ability for visitors to experience a natural and undeveloped shoreline.

An increase in these types of impacts could also indicate a higher volume of people are using this zone, and opportunities for solitude (low-density experiences) may not be fully achieved.

Monitoring is an essential part of managing visitor use; for this reason, the Interagency Visitor Use Management Council developed a Monitoring Guidebook[6] to complement and expand upon the monitoring elements of the framework by providing more in-depth discussion, examples, and direction on the topic. Information collected about identified indicators helps managers properly assess the status of a resource or visitor experience. Similarly, managers cannot properly evaluate the impact or effectiveness of an action taken to achieve a desired condition without comparative data.

Element 3: The How

Step 9: Identify visitor use management strategies and actions to achieve desired conditions.
Step 10: Where necessary, identify visitor capacities and additional strategies to manage use levels within capacities.

The plan then developed specific strategies and actions to achieve and maintain the desired conditions of the river zone and resolve management issues, summarized below:

Middle Delaware National Scenic and Recreational River Zone. To enhance river camping the park would develop up to three clustered river campsite locations with toilet facilities and continue to maintain existing primitive river campsites. The park will implement a campsite reservation system with a fee for river camping. The reservation system will create the opportunity for visitors to plan for their trip and allow for securing a campsite in advance. In addition the park would dedicate staff to manage, maintain, monitor, educate, and patrol river operations including educating visitors and enforcing regulations as funding allows. Leave No Trace ™ education for proper human waste disposal would be increased. The overall number of river campsites will be increased from 65 to up to 85. Camping, especially the new clustered sites, will be located in areas that allow logistical support from land in addition to the river to improve river operation sustainability. All river campsites will have fire rings. Newly constructed features will be designed to meet ABA accessibility goals (i.e., 20% of campsites and trails will be initially targeted for ABA design) where feasible. River usage will be managed to the capacity defined in chapter 5. (see chapter 5).

Figure 2.

DEWA's plan also established a visitor capacity of 36 boats per river mile for this management zone (see figure 3). Visitor capacity is defined as the maximum amounts and types of visitor use that an area can accommodate while achieving and maintaining the desired resource conditions and visitor experiences. The Interagency Visitor Use Management Council's Visitor Capacity Guidebook[7] provides in-depth information about visitor capacity and how to identify as well as achieve it.

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[6] *See* Monitoring Guidebook: Evaluating Effectiveness of Visitor Use Management
[7] *See* Visitor Capacity Guidebook: Managing the Amounts and Types of Visitor Use to Achieve Desired Conditions

Figure 3.

Step 12: Implement the management action

After the plan was approved in 2020, park managers began implementing its management actions. Below are photos and a screenshot of a recent social media post that highlights the implementation of the campsite reservation system and related fee for camping along the 40-mile Middle Delaware National Scenic and Recreation River:
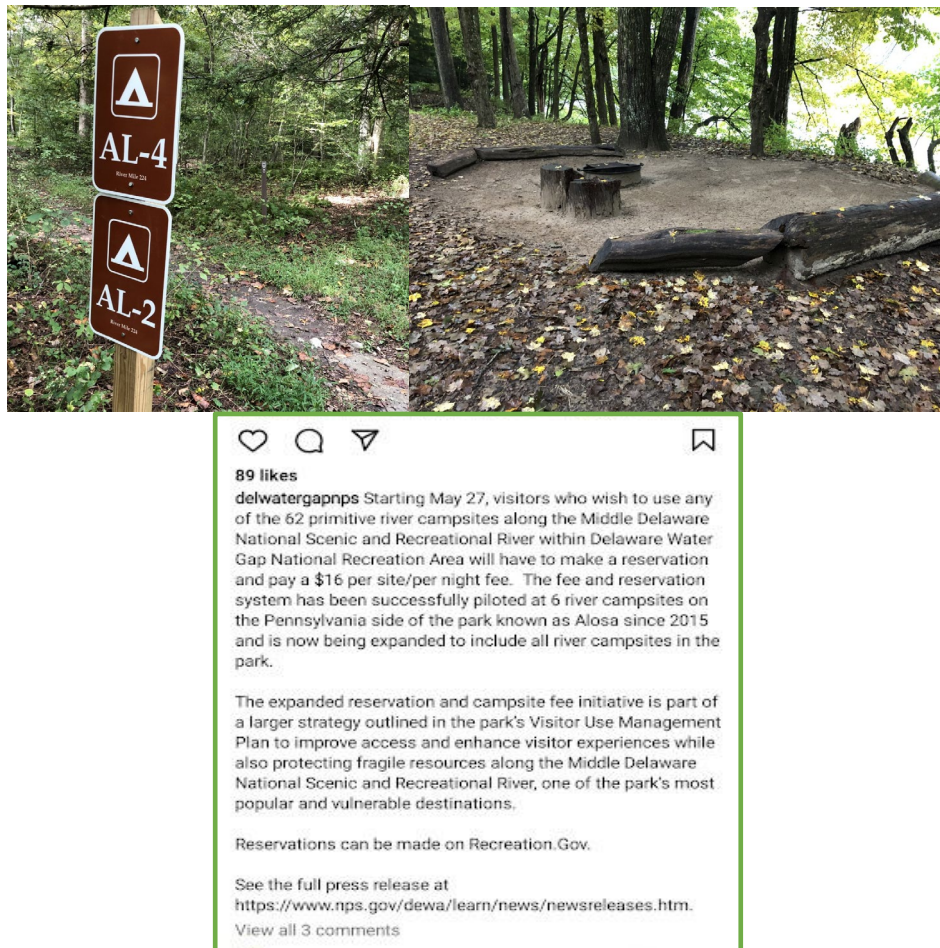

Figure 4. **[8]**

While the case study only provides a brief look inside the DEWA VUM Plan, it serves to illustrate how various steps from the framework can be applied through a real-world example.

IV.   **Conclusion on Universal Best Practices.**

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[8] *See @delwatergapnps Instagram Account and Press Release:* Press Release: Delaware Water Gap NRA makes changes to river camping program

Managing use on public lands and water is always dynamic. The recreation and visitor use trends, opportunities and challenges facing managers vary from unit to unit and will undoubtedly evolve over time—sometimes even overnight as the COVID-19 pandemic demonstrated. While 'one-size-fits-all' or standardized approaches to managing visitor use issues (e.g. permitting all camping, fees in all areas or at all times) can be attractive due to heightened efficiency, they are often not sufficiently effective to address area-specific issues and opportunities. Adopting and applying a strategic framework to guide visitor management planning and decision making on Georgia's public lands as a standard tool and best management practice ensures comprehensive and consistent management while still allowing for adaptability for each area's specific issues, needs, and resources. Now more than ever, it is important to invest in thoughtful processes and creative strategies to attract and welcome new visitors, support meaningful connections to public resources, and sustainably manage use. Successful visitor use management will help ensure equitable and appropriate public access to valued places as well as long-term viability of the natural and cultural resources that make quality visitor experiences possible.

Additional Resources Related to Visitor Use Management:

- [Interagency Visitor Use Management Council](#)

- [Tourism and Visitor Use Management](#)

- [Congestion Management Toolkit](#)

- [Visitor Use Management Framework](#)

- [Monitoring Guidebook](#)

- [Visitor Capacity Guidebook](#)

- [VUM Resources](#)

- [VUM Frequently Asked Questions](#)

- [Council Position Papers and Laws and Agency Policies](#)

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