



WESTERN INTERIOR ALASKA
SUBSISTENCE REGIONAL
ADVISORY COUNCIL
Meeting Materials

*October 13-14, 2021
via teleconference*



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USFWS, Kanuti NWR photo

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WESTERN INTERIOR ALASKA SUBSISTENCE REGIONAL ADVISORY COUNCIL

By Teleconference Only
October 13-14, 2021, 9 a.m. daily

TELECONFERENCE: call the toll free number: **1-866-617-1525**, then when prompted enter the passcode: **54006314**.

PUBLIC COMMENTS: Public comments are welcome for each agenda item and for regional concerns not included on the agenda. The Council appreciates hearing your concerns and knowledge. Time limits may be set to provide opportunity for all to testify and keep the meeting on schedule.

PLEASE NOTE: These are estimated times and the agenda is subject to change. Contact staff for the current schedule. Evening sessions are at the call of the chair.

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14. Adjourn (*Chair*)

To call into the meeting, dial the toll free number: 1-866-617-1525, then when prompted enter the passcode: 54006314.

Reasonable Accommodations

The Federal Subsistence Board is committed to providing access to this meeting for all participants. Please direct all requests for special accommodation needs to Karen Deatherage, 907-474-2203, karen_deatherage@fws.gov, or 800-877-8339 (TTY), by close of business on October 8, 2021.

REGION 6
Western Interior Alaska Regional Advisory Council

Seat	Yr Apptd <i>Term Expires</i>	Member Name & Address	Represents
1	2020 2022	Rebecca C. Wilmarth <i>Red Devil</i>	Subsistence
2	2004 2022	Donald V. Honea Jr. <i>Ruby</i>	Subsistence
3	1993 2022	Pollock Simon Sr. <i>Allakaket</i>	Subsistence
4	2021 2023	Kevin L. Whitworth <i>McGrath</i>	Subsistence
5	1993 2023	Jack L. Reakoff <i>Wiseman</i>	Subsistence
6	2021 2023	Arnold P. Demoski <i>Nulato</i>	Subsistence
7	2008 2023	Timothy P. Gervais <i>Ruby</i>	Commercial/Sport
8	2021	<i>VACANT</i>	
9	2006 2021	Jenny K. Pelkola Acting Chair <i>Galena</i>	Subsistence
10	2018 2021	Goodwin G. Semaken <i>Kaltag</i>	Subsistence

WESTERN INTERIOR ALASKA SUBSISTENCE REGIONAL ADVISORY COUNCIL

Meeting Minutes

Via Teleconference due to Covid-19

February 17-18, 2021

Call to Order, Roll Call and Quorum Establishment

The meeting was called to order on Wednesday, February 17, 2021 at 9:00 a.m. Council members Jenny Pelkola, Donald Honea, Jr., Pollock Simon, Sr., and Goodwin Semaken were on teleconference. A quorum was established with 4 out of 4 seated Council members participating by phone (Council has six vacant seats).

Attendees:

Via teleconference

Karen Deatherage, Fairbanks, Office of Subsistence Management (OSM)
Tom Kron, Pippa Kenner, Robbin LaVine, Cory Graham, Brent Vickers, Anchorage, OSM
Glenn Chen, Anchorage, Bureau of Indian Affairs
Vince Mathews, Interagency Staff Committee, U.S. Fish and Wildlife Service (USFWS)
Gerald Maschmann, Holly Carroll, Randy Brown, Fairbanks, USFWS
Bob Rebarchik, Jeremy Havener, Galena, Innoko/Nowitna/Koyukuk National Wildlife Refuge (NWR)
Tina Moran, Joanna Fox, Chris Harwood, Fairbanks, Kanuti NWR
Boyd Blihovde, Aaron Moses, Bethel, Yukon Delta NWR
Kenton Moos, Dillingham, Togiak NWR
Hans Klausner, Kodiak, USFWS Refuge Subsistence
Frank Harris, Soldotna, Fish and Wildlife Conservation Office
Tom Heinlein, Bonnie Million, Bruce Seppi, Walker Gusse, Anchorage, Bureau of Land Management (BLM)
Tim LaMarr, Erin Julianus, Fairbanks, BLM
Victoria Foley, Anchorage, National Park Service (NPS)
Marcy Okada, Fairbanks, Gates of the Arctic National Park & Preserve (GAAR) and GAAR Subsistence Resource Commission (SRC)
Will Deacy, Matt Cameron, Fairbanks, GAAR
Eric Row, Ben Stevens, Bruce Irvine, Jim Simon, Fairbanks, Tanana Chiefs Conference (TCC)
Mary Peltola, Terese Schomogyi, Bethel, Kuskokwim River Inter-Tribal Fish Commission (KRITFC)

Kevin Whitworth, McGrath, KRITFC

Dr. Daniel Schindler, Seattle, University of Washington Fisheries

Serena Fitka, Catherine Moncrieff, Anchorage, Yukon River Drainage Fisheries Association (YRDFA)

Darrell Vent, Carl Burgett, Huslia Tribe

Mark Burch, Todd Rinaldi, Rick Merizon, Palmer, Alaska Department of Fish and Game (ADF&G)

Deena Jallen, Christy Gleason, Chris McDevitt, Alida Trainor, Glenn Stout, Brooke McDavid, John Chythlook, Klaus Wuttig, Sara Longson, Fairbanks, ADF&G

Joshua Peirce, McGrath, ADF&G

Sabrina Garcia, Charles Brazil, Anchorage, ADF&G

Brian Riley, Dillingham, ADF&G

Danielle Stickman, Anchorage, Interagency Research Policy Committee

Ellen Yasumiishi, Diana Stram, Juneau, National Atmospheric and Oceanic Administration (NOAA)

Jim Murphy, Juneau, National Marine Fisheries Service (NMFS)

Jack Reakoff, Wiseman

Arnold Demoski, Nulato

Tim Gervais, Ruby

Review and Adopt Agenda

Motion by Mr. Simon, seconded by Mr. Honea, to adopt the agenda as read with the following additions/changes:

- Mulchatna Caribou Herd Update, Small Game Regulatory Updates and Kuskokwim River Post Season Survey (ADF&G) (Todd Rinaldi, ADF&G)
- All NOAA presentations from 11:00 – 1:00 p.m. 2/18/2021
- Bering Sea Western Interior Resource Management Plan (BSWI RMP)
- NPS Individual Customary and Traditional Determination Permit Update
- Fisheries Resource Monitoring Program (FRMP) Funding Opportunities

The motion passed unanimously.

Review and Approve Previous Meeting Minutes

Motion by Mr. Honea, seconded by Mr. Simon to approve the fall 2021 meeting minutes.

The motion passed unanimously.

Election of Officers

Motion by Mr. Honea, seconded by Mr. Simon, to delay the Council's election officers until the Fall 2021 meeting. The decision was based on the current high vacancy rate on the Council.

The motion passed unanimously.

Council Member and Chair Reports

Jenny Pelkola of Galena reported that there is a lot of snow in the woods. A few moose are around town, and there are lots of lynx and foxes. Residents have been staying close to home due to COVID-19. Mrs. Pelkola also remarked that she participated in the Federal Subsistence Board meeting in January, and would like to see some Board members attend the Council meeting in the future.

Donald Honea, Jr., of Ruby received information on moose surveys from Koyukuk/Nowitna/Innoko NWR. Wolves are being heard and he was aware of wolves killing moose down by the river. Mr. Honea would like to see a survey on wolves in the area. He mentioned that the deep snow had an impact on the moose population. The snowpack is not as deep this year so hopefully the moose will have an easier time. The Middle Yukon Fish and Game Advisory Committee met last week but he wasn't able to attend.

Goodwin Semakan of Kaltag reported that the snow is pretty deep and there seems to be some wolves around, across the river. They have been getting wolves down below Kaltag. Mr. Semakan is also concerned about the moose because of deep snow. It's been a chilly winter and the moose are thin and just surviving.

Pollock Simon, Sr., of Allakaket reported a mild winter and not too cold. Last year it was -50 for two months. There's about 2-3 feet of snow on the ground and the weather has been pretty good. People are not stressing out over firewood like last year. There were no caribou this winter, and a limited number of moose. However, Mr. Simon said that most people got their moose because of the extended moose season. There wasn't much salmon either, and the wet fall produced high water in the spring, forcing some subsistence users to pull their nets.

Public Comment

Darryl Vent of Huslia testified on behalf of the Huslia Tribe. He stressed the need for the Federal Subsistence Board to increase interior Alaska subsistence council member representation. Mr. Vent re-applied to serve and is hoping to get back on the Council. He believes that the community of Huslia is a critical area in Western Interior Alaska, especially with the threats of the Ambler Road and its impacts on subsistence. Caribou migrations will be affected, and along with the low fish counts, Koyukuk River area subsistence users will have few resources to harvest.

Jack Reakoff of Wiseman testified that he re-applied to serve on the Western Interior Alaska Subsistence Regional Advisory Council, due to the status of his current application which had not yet been reviewed by the Department of Interior. At the time of the Council meeting, the Southeast Alaska, Yukon Kuskokwim Delta and Western Interior Councils had received no appointments for the 2020 RAC appointment cycle. Mr. Reakoff is hoping that out of cycle appointments will be made, and the Council will soon have adequate representation from the region. Mr. Reakoff also shared information on the conditions and wildlife populations in the Brooks Range. He reported that snow depth was about 25% less than last year, with about 14 inches of snow on the ground. The snow is dry, and the wind is blowing it off the mountains, benefitting Dall's sheep populations. The caribou are to the east and north, and the Western Arctic Caribou Herd is around the John River. Wolf populations are high and moving with the caribou. The lynx population is fluid, so everyone is seeing lynx from Kotzebue all the way up in the Brooks Range. Mr. Reakoff stated he will speak to his concerns with the BLM's Central Yukon Resource Management Plan (CYRMP) later in the meeting when the topic arises.

Agency/Tribal/Organization Reports

- Todd Rinaldi, ADF&G and Boyd Blihovde, Yukon Delta NWR, Mulchatna Caribou Herd Update
- Rick Merizon, ADF&G, Small Game Regulatory Updates
- Chris McDevitt, ADF&G, Kuskokwim River Post Season Report

New Business

Call for Federal Wildlife Proposals

Pippa Kenner, OSM, read the Call for Federal Wildlife Proposals. There were no proposals submitted by the Council for this cycle.

Council Charter Review

Motion by Mr. Honea, seconded by Mr. Simon, to accept the Council Charter with modification to include the following new language: “Any member of this Advisory Council may serve after the expiration of the Member’s term until a successor is appointed”.

Motion passes unanimously.

Finalize FY2020 Annual Report

Motion by Mr. Honea, seconded by Mr. Simon, to finalize the Council’s Annual Report as written.

The motion passed unanimously.

Agency/Tribal/Organization Reports Continued:

- Eric Row, TCC 2020 Update including Henshaw Creek Escapement
- Kevin Whitworth, KRITFC Update
- Daniel Schindler, Kuskokwim River Meeting Outreach
- Serena Fitka and Catherine Moncrieff, YRDFA Update
- Gerald Maschmann, Deanna Jallen, 2020 Preliminary Yukon River Summer Season Summary
- Jeremy Havener, Innoko/Nowitna/Koyukuk NWR Update
- Chris Harwood, Kanuti NWR Update
- Aaron Moses, Boyd Blihovde, Yukon Delta NWR Update
- Victoria Foley, NPS Individual C&T Determination Permitting Review
- Tim LaMarr, BLM CYRMP and Dalton Highway Corridor Guided Hunting. Public member Jack Reakoff shared comments regarding the CYRMP and invited the Council to adopt these comments as their own. Mr. Reakoff provided those comments to Ms. Deatherage for reference.

Motion by Mr. Simon, seconded by Mr. Honea, to adopt and submit Mr. Reakoff’s comments on behalf of the Council to the BLM for the CYRMP. The Council also

requests that OSM send a copy of the comments to as many affected tribes in the region as possible.

The motion passed unanimously.

- Marcy Okada, Matt Cameron, Will Deacy, GAAR and SRC Updates
- Tom Kron, OSM Office Update
- Cory Graham, Fisheries Resource Monitoring Program Call for Funding Opportunities
- Darrell Vent, Huslia Tribe Update on Ambler Road and CYRMP
- Tom Heinlein, Bonnie Million, BLM Anchorage Field/District Offices & BSWI RMP Updates
- Ellen Yashamiishi, Eastern Bering Sea Research
- Diana Stram, Salmon Bycatch Update
- Jim Murphy/Sabrina Garcia, Northern Bering Sea Juvenile Salmon Ecology

Motion by Mr. Honea, seconded by Mr. Simon, to adjourn the meeting at 1:50 p.m. on February 18th.

The motion passed unanimously.

Future Meeting Dates:

The Council confirmed its fall 2021 meeting to be held October 13-14, in Fairbanks
The Council selected its winter, 2022 meeting to be held February 16-17, in Galena.

Karen Deatherage, Designated Federal Officer
USFWS Office of Subsistence Management

Jenny Pelkola, Acting Chair
Western Interior Alaska Subsistence Regional Advisory Council

These minutes will be formally considered by the Western Interior Alaska Subsistence Regional Advisory Council at its fall 2021 meeting, and any corrections or notations will be incorporated in the minutes at that meeting.

A more detailed report of this meeting, copies of the transcript, and meeting handouts are available upon request. Call Karen Deatherage at 1-800-478-1456 or 907-474-2203, email karen_deatherage@fws.gov

DRAFT



FISH and WILDLIFE SERVICE
BUREAU of LAND MANAGEMENT
NATIONAL PARK SERVICE
BUREAU of INDIAN AFFAIRS

Federal Subsistence Board

1011 East Tudor Road, MS 121
Anchorage, Alaska 99503 - 6199



FOREST SERVICE

OSM 21053.KD

AUG 26 2021

Jenny Pelkola, Chair
Western Interior Subsistence Regional Advisory Council
c/o Office of Subsistence Management
1011 E. Tudor Road, M/S 121
Anchorage, AK 99503

Dear Chairwoman Pelkola:

The Federal Subsistence Board (Board) met on January 26-29, 2021 via teleconference to consider proposed changes to Federal subsistence management regulations for the harvest of fish and shellfish on Federal Public lands and waters in Alaska, fisheries closure reviews, and a nonrural determination proposal. This letter is to provide a report on the actions taken by the Board on proposals and closure reviews affecting Federally qualified subsistence users.

Section 805(c) of the Alaska National Interest Lands Conservation Act (ANILCA) provides that the Board will accept the recommendations of a Subsistence Regional Advisory Council (Council) regarding take unless, (1) the recommendation is not supported by substantial evidence, (2) the recommendation violates recognized principles of fish and wildlife management, or (3) adopting the recommendation would be detrimental to the satisfaction of subsistence needs. When a Council's recommendation is not adopted, the Board is required by Secretarial regulations to set forth the factual basis and reasons for the decision.

Out of 14 fisheries proposals submitted, one proposal (FP21-04) was withdrawn by the proponent. The Board agreed with the recommendations of the Regional Advisory Councils, in whole or with modifications, on 9 proposals. The Board deferred its decision on Proposal FP21-10 until the next fisheries cycle to allow conflicting user groups to meet and attempt to reach a compromise. The Board reviewed 12 fisheries closure reviews and accepted the recommendations of the Regional Advisory Councils on 10 of 12 fisheries closure reviews. The Board voted to maintain status quo on 2 of them (FCR21-01 and FCR21-22) and to eliminate one of the closures (FCR21-06). The Board deferred 7 of 12 fisheries closure reviews (FCR21-08, -09, -11, -13, -16, -18, and -19) until next fisheries cycle to allow the Council to meet with communities and discuss the closures. The Board deliberated one rural determination proposal RP19-01 and agreed with the Southcentral Alaska Subsistence Regional Advisory Council recommendation with modification.

Details of these actions and the Boards' deliberations are contained in the meeting transcriptions. Copies of the transcripts may be obtained by calling toll free number 1-800-478-1456 and are available online at the Federal Subsistence Management Program website, <https://www.doi.gov/subsistence>.

The Board uses a consensus agenda on those proposals and closure reviews where there is agreement among the affected Regional Advisory Council(s), a majority of the Interagency Staff Committee, and the Alaska Department of Fish and Game concerning a proposed regulatory action. These fisheries proposals and closure reviews were deemed non-controversial and did not require a separate discussion. The consensus agenda contained two proposals and one fisheries closure review affecting the Western Interior Alaska Region, which the Board deferred to the Western Interior Alaska Council's (Council) recommendations as follows: the Board adopted **FP21-01**, which eliminates Federal regulations that describe precisely when and where the subsistence salmon fishery will close around commercial openings on the Kuskokwim River, and **FP21-03**, which clarifies that drift gill nets are legal gear in Kuskokwim River tributaries. The Board also eliminated the fisheries closure under **FCR21-06**, which was had been closed to the harvest of all fish in the Toklat River drainage by Federally qualified subsistence users from August 15 through May 15.

The remaining proposals affecting the Western Interior Alaska Region appeared on the non-consensus agenda. However, for one of the proposals, the Board took action consistent with the Council's recommendations. The Board rejected **FP21-02**, which would have reduced the required distance between set nets in Kuskokwim River tributaries from 150 feet to 75 feet.

The Board's actions on the remaining two closure reviews were inconsistent with the Council's recommendations and are therefore outlined in the attached report.

The Federal Subsistence Board appreciates the Western Interior Alaska Subsistence Regional Advisory Council's active involvement in and diligence with the regulatory process. The ten Regional Advisory Councils continue to be the foundation of the Federal Subsistence Management Program, and the stewardship shown by the Regional Advisory Council chairs and their representatives at the Board meeting was noteworthy.

If you have any questions regarding the summary of the Board's actions, please contact Karen Deatherage, Council Coordinator, at 907-474-2203 or karen_deatherage@fws.gov.

Sincerely,



Anthony Christianson,
Chair

Enclosure

cc: Federal Subsistence Board
Western Interior Alaska Subsistence Regional Advisory Council members
Sue Detwiler, Assistant Regional Director, Office of Subsistence Management
Amee Howard, Deputy Assistant Regional Director and Acting Fisheries Division Supervisor
Office of Subsistence Management
Robbin La Vine, Policy Coordinator, Office of Subsistence Management
George Pappas, State Subsistence Liaison, Office of Subsistence Management
Katerina Wessels, Council Coordination Division Supervisor
Office of Subsistence Management
Karen Deatherage, Subsistence Council Coordinator, Office of Subsistence Management
Interagency Staff Committee
Administrative Record

FEDERAL SUBSISTENCE BOARD 805(c) REPORT

January 26-29, 2021

Anchorage, Alaska

Section 805(c) of the Alaska National Interest Lands Conservation Act provides that the “Secretary ... 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 has delegated authority to issue regulations for the take of fish and wildlife to the Federal Subsistence Board (Board). Pursuant to this language in Section 805(c), the Board defers to the Council’s recommendations. However, Section 805(c) also provides that the Board “may choose not to follow any recommendations which [it] 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.” The purpose of this report is to detail how the Board’s action differed from the Council’s recommendations based on these criteria.

YUKON NORTHERN AREA FISHERIES CLOSURE REVIEWS

Fisheries Closure Review FCR21-04 – Jim River: All Fish

DESCRIPTION: Closure to the harvest of all fish in the Jim River drainage by Federally qualified subsistence users.

COUNCIL RECOMMENDATIONS:

Western Interior Alaska Subsistence Regional Advisory Council (WIRAC) – **Support** eliminating the Jim River subsistence closure and modifying regulations to allow rod and reel only, and an Arctic Grayling harvest and possession limit of 10 per day.

Seward Peninsula Subsistence Regional Advisory Council – In concurrence with the WIRAC, **support** eliminating the Jim River subsistence closure and modifying regulations to allow rod and reel only, and an Arctic Grayling harvest and possession limit of 10 per day.

Eastern Interior Subsistence Regional Advisory Council – **Defer** to WIRAC

North Slope Subsistence Regional Advisory Council – **Defer** to WIRAC

Yukon Kuskokwim Delta Subsistence Regional Advisory Council – **Defer** to WIRAC

BOARD ACTION: Support maintaining closure (status quo).

JUSTIFICATION: During the January 26-29, 2021 Federal Subsistence Board meeting, the Solicitor's office expressed concern that any actions taken by the Board beyond simply eliminating or maintaining the closure would not allow appropriate notice and opportunity for public comment. Further, the Solicitor's Office recommended that changes to the harvest limits and allowable gear types that were recommended by this Council be addressed in the short term by a special action request and in the long term by a proposal that would be submitted during the next regulatory cycle. Based on this advice from the Solicitor's office, the Board voted to maintain the closure in the Jim River drainage with the expectation that a special action request could be submitted by this Council.

The WIRAC can submit a temporary special action requesting that the Board rescind the closure to the harvest of all fish in the Jim Creek drainage by Federally qualified subsistence users and modify regulations to allow rod and reel only, and an Arctic Grayling harvest and possession limit of 10 per day.

Fisheries Closure Review FCR21-07 – Nome Creek: Arctic Grayling

DESCRIPTION: Closure to the harvest of Arctic Grayling in Nome Creek of the Yukon River drainage by Federally qualified subsistence users.

COUNCIL RECOMMENDATIONS:

Eastern Interior Alaska Subsistence Regional Advisory Council (EIRAC) – **Modify the closure** by closing the Nome Creek drainage to the harvest of Grayling by all uses and users.

Western Interior Alaska Subsistence Regional Advisory Council – **Defer** to EIRAC

Seward Peninsula Subsistence Regional Advisory Council – **Defer** to EIRAC

Yukon Kuskokwim Delta Subsistence Regional Advisory Council – **Defer** to EIRAC

North Slope Subsistence Regional Advisory Council – **Defer** to EIRAC

BOARD ACTION: **Support maintaining closure (status quo).**

JUSTIFICATION: During the January 26-29, 2021 Federal Subsistence Board meeting, the Solicitor's office expressed concern that any actions taken by the Board beyond simply eliminating or maintaining the closure would not allow appropriate notice and opportunity for public comment. Further, the Solicitor's Office recommended that changes to the harvest limits and allowable gear types recommended by the EIRAC be addressed in the short term by a special

action request and in the long term by a proposal submitted during the next regulatory cycle. Based on this advice from the Solicitor's office, the Board voted to maintain the closure in the Nome Creek drainage with the expectation that a special action request could be submitted by the EIRAC. The current sport catch and release fishery does not represent a conservation concern and such concern is not supported by substantial evidence.

The EIRAC can submit a temporary special action requesting that the Board rescind the closure to the harvest of all fish in the Nome drainage by Federally qualified subsistence users, and modify regulations as stipulated above to conserve Arctic grayling. This would provide an opportunity for subsistence harvest and a subsistence priority not currently in regulation.



Federal Subsistence Board

1011 East Tudor Road, MS 121
Anchorage, Alaska 99503 - 6199



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AUGUST 04 2021

FOREST SERVICE

IN REPLY REFER TO:
OSM 21031.KW

Jenny Pelkola, Chair
Western Interior Alaska Subsistence
Regional Advisory Council
c/o Office of Subsistence Management
1101 East Tudor Road, MS 121
Anchorage, Alaska 99503-6199

Dear Chairwoman Pelkola:

This letter responds to the Western Interior Alaska Subsistence Regional Advisory Council's (Council) fiscal year 2020 Annual Report. The Secretaries of the Interior and Agriculture have delegated to the Federal Subsistence Board (Board) the responsibility to respond to these reports. The Board appreciates your effort in developing the Annual Report. Annual Reports allow the Board to become aware of the issues outside of the regulatory process that affect subsistence users in your region. We value this opportunity to review the issues concerning your region.

1. Mean High Water Mark Definition

The Council appreciates that the Board responded to this concern in our 2019 Annual Report. As cited in your reply, the Army Corp of Engineers defined the term "ordinary high water mark" for purposes of the Clean Water Act lateral jurisdiction at 33 CFR 328.3(e), which states: "The term ordinary high water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."

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The Council believes this definition is inadequate, particularly for Federally-qualified subsistence users who must hunt during the winter months to feed their families. The characteristics described above delineate the ordinary high water mark for bare ground and are not visible during the winter months. Subsistence hunters are therefore vulnerable to illegally harvesting an animal during the winter months when the boundary is not visible based on the current definition. The regulation is therefore inadequate and needs further clarification to encompass seasonal variability.

Recommendation:

The Council is recommending that during winter months with snow cover, the “ordinary high water mark” be defined as the brush line, where willow and other vegetation occur above the snow column. This will enable a user to have a clear delineation of the brush line, and know whether they are on State or Federal lands for legal subsistence harvest.

Response:

The Federal Subsistence Board does not have the authority to modify the Conservation System Unit boundaries or the jurisdictional definition for “Ordinary High Water Mark” for Federal Public Lands in Alaska. The Council’s concern was heard and understood.

At the March 26, 2019 Council meeting, Brandon Bosch, Federal Wildlife Officer for Kanuti, Yukon Flats, and Arctic National Wildlife Refuges, advised hunters to determine the ordinary high water mark by digging through the snow and checking for the presence of vegetation. Although this may seem to be a burdensome, it is one method to assist hunters with determining the status of land where they are located. Your Council Coordinator can invite a law enforcement officer for a further discussion of this issue during your next Council meeting.

2. Council Membership

The Council continues to be extremely frustrated with the lack of both timely member appointments and fully seated Councils. The Council submitted detailed concerns in a letter to the Board dated December 8, 2020; notably unacceptable delays in appointments for seats expiring each year on December 2, and continued high vacancy rates on all Subsistence Regional Advisory Councils, which greatly diminish the abilities of the Councils to accomplish the statutory requirements under Section 805 of Title VIII in ANILCA. The Councils cannot be expected to meet the statutory requirement for a “meaningful role in fish and wildlife

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management” with decreased memberships and inexcusable delays in member appointments. The Council believes that this “de facto” reduction of Council seats has not been justified, and is in fact a violation of the Council’s charter and ANILCA. The Council has copied all Subsistence Regional Advisory Councils on its December 8, 2020 letter to ensure there is a collective voice with these concerns, as the continued mishandling of member appointments is adversely affecting all ten subsistence regions in Alaska.

Recommendation:

As stated in our letter to the Board, the Council is requesting that the Board contact the Secretary of the Interior’s office and call for immediate relief with timely appointments for both incumbent and new members for Subsistence Regional Advisory Councils in Alaska.

Response:

The Board acknowledges the Council’s continuing concerns regarding the lack of timely appointments and fully seated Councils. A diverse and wide regional representation on all Councils is key to these advisory bodies’ ability to fulfill Section 805 of Title VIII of ANILCA mandates. The Board notes that the current administration already is aware of the significance and magnitude of the appointment issues. When in 2021 the lack of appointments was brought to this administration’s attention, it acted promptly to resolve them by appointing additional members to the Councils out-of-cycle. The Board feels that since the issue was resolved so expeditiously it is not necessary at this point to contact the Secretary of the Interior office regarding the Councils’ appointments concerns.

However, the Board would like to point out that in some situations it is impossible to fill the vacant seats and/or appoint alternates when there is not a sufficient number of applications or nominations from the region. For example, in the 2020 appointment year there were six seats open on the Council for appointments. The Board received only five applications from your region to fill these six vacancies.

In fiscal year 2020, the Office of Subsistence Management (OSM) conducted outreach in the Western Interior Alaska Region and throughout the State during the application period that was open from September 3, 2019 to March 2, 2020. Applications were mailed and emailed to individuals, agencies, and organizations. Extensive outreach was conducted through a variety of media outlets, including, but not limited to, newspaper, radio, internet, Facebook, and public

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conferences. These efforts resulted in 74 applications to fill 62 vacated or expiring seats on all Councils, but unfortunately, not enough for the Western Interior Region.

The Board encourages the Council members to assist OSM with outreach effort in its communities and throughout the Region to attract a wider pool of applicants for the future appointment cycles. Having a wider pool of applicants allows the Board to choose the most qualified individuals for appointment recommendations and ensure that most or all seats are filled and alternates are selected when possible. However, it is important to remind the Council that the Board does not have final authority over which recommended applicants are appointed to the Councils. The final appointment authority rests with the Secretary of the Interior.

The Board wants to assure the Council that OSM will continue working with the Department of the Interior to ensure that the 2021 cycle appointments stay on schedule and that the work is done in the most efficient manner possible. The Board has a high level of confidence that in the future the Councils' appointments will be made in a timely manner.

3. Bureau of Land Management Guide Use Permitting Process

At its meeting held October 14–15 via teleconference, the Council queried representatives from the Bureau of Land Management (BLM) about the number of hunting guides permitted in the Brooks Range, and specifically along the Dalton Highway Corridor. Multiple factors have contributed to low populations of sheep and moose, including increased guiding pressure. These activities are threatening subsistence resources and the subsistence priority for Federally-qualified subsistence users in this region.

Moose and sheep populations have been depleted along the Dalton Highway Corridor due to harsh winters and low recruitment. This past year, only seven rams were observed in the Dalton Highway Corridor, south of Atigun Pass. Most of the rams seen were sub-legal, but will become legal size in two years and likely harvested. This could result in full reproductive failure in a population of sheep that is already suffering. Of the 31 ewes observed in this area, only three had lambs. Large populations of both wolves and lynx exist, both of which prey on sheep.

In addition to this conservation concern, there are increasing numbers of hunting guides and assistant guides in the area, some operating under one permit. The COVID-19 restrictions in Canada have pushed more guiding operations into the Brooks Range of Alaska. These guides are equipped with multiple aircraft, giving them clear advantages over subsistence users who depend on the resources. There appears to be little control of the potential for overharvest, and

possible extirpation of sheep populations in the region. The lack of a guide-use permitting process with clear area delineations and limited harvest allocation exasperates this situation.

Recommendation:

The Council is requesting a guide-use permit program that ensures a priority for subsistence uses in the Brooks Range and along the Dalton Highway Corridor. In 2004, BLM promised a guide-use permitting process to select guides on BLM lands, if the State of Alaska failed to implement a guide use permitting process for these lands. The State has not done this. Therefore, the Council is requesting that BLM develop a guide-use permitting process similar to the National Park Service's preserve guide permitting process, and the National Wildlife Refuge permitting process. Guide use areas would be delineated, guides would compete for those permits, guides would not be permitted to hunt "over" one another, and guides would be held under specific allocation standards for resources in their areas. The Council believes its request is justified, as the State has not fulfilled its duty to subsistence use.

Response:

The Bureau of Land Management (BLM) authorizes recreation use of the public lands and waters through the issuance of special recreation permits (SRPs). The BLM's authority to issue permits is described in the Federal Land Policy and Management Act of 1976 and 43 Code of Federal Regulations (CFR) 2930. SRPs are authorizations that allow for commercial, competitive, and group recreation uses of the public lands and related waters. They are issued as a management tool to control visitor use, protect recreational and natural resources, and provide for the health and safety of visitors.

BLM-Alaska utilizes standard processes and procedures as identified in 43 CFR 2930 and the 2930 Recreation Permit Handbook to process and issue SRPs. That process begins with an application submitted by the applicant who proposes to operate commercially or competitively on BLM-AK administered lands. BLM-AK requires that the applicant describes the type of proposed activity, the season of use, the procedures and methods that will be utilized to protect the natural resources, and the qualifications it meets for recreational use.

Issuing an SRP is a comprehensive process. In BLM-AK, SRPs are issued on a first-come-first-served basis until the affected area desired use level is reached. That desired use level is determined by Resource Management Plans, Recreation Area Management Plans, and ad hoc NEPA analysis. When an area's desired use level is reached, no additional permits are issued.

For outfitter and guides that propose to commercially guide clients for hunting operations, several additional pieces of information are required to process applications. This additional information includes what State of Alaska Guide Use Areas (GUA) the applicants are authorized in, the status of their business and guide license(s), list of sub guides, what species they propose to guide for and in what GUAs, do they propose to have any camps on the land other than spike camps, map(s) of proposed areas of activity, and how they propose to access lands for clients (pack stock, foot, OHV, aircraft).

Once the field office where the activity is proposed has the required information and documentation in place, a determination is made for the type of NEPA analysis required to process the application. Those analyses range from Categorical Exclusions for low impact activities, to Environmental Assessments for something that requires more extensive analysis and determination for an authorization. Per 43 CFR 2932, BLM-AK can deny applications that are submitted less than 180 days in advance of the proposed activity. This provides us adequate time to consider all resources and enough time to provide for public notification and outreach for the proposed activity.

The analysis process begins with an Interdisciplinary Team of program specialists that are convened to review the proposed activity. Those specialists represent the resources that may be affected. A project synopsis is then presented to the Interdisciplinary Team, typically by the SRP permit administrator, and management will then assign the appropriate resource staff to review and analyze the proposed action.

Where there is potential for conflict between commercial and subsistence hunters, in addition to posting the proposed action on the BLM's NEPA E-planning site, the local field office will also notify local residents who have expressed interest in this type of activity. SRPs are approved only where overlapping outfitter and guide operators in a GUA, or any area can be attained. This is a standard practice for areas where there is known density of use, where there is ease of access, or where there is a high demand for SRPs.

Following the opportunity for public review, a decision is made by the Authorized Officer to approve or deny the application. That decision is also posted on the BLM's NEPA E-planning site. If approved, the decision record will include detailed stipulations concerning the total clients that can be commercially guided, as well as authorized species to be hunted, access points or ROWs needed, and the total authorized take of species. Irrespective of an outfitter and guide total number of guides or sub-guides employed by the company, total hunting in an area by

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commercial outfitter and guide is determined by the total number of clients that are authorized to be guided in the SRP. If an outfitter and guide has 5 sub guides but only 3 sheep clients authorized, then the outfitter and guide can only pursue up to 3 clients for potential sheep harvest, and the same system applies to any other game species authorized.

Stipulations such as the following are also utilized to control indirect pressure from associated sub guides or buddy hunts. This stipulation was included in a SRP Central Yukon Field Office authorized in 2020 for commercial hunting in the Dalton Highway Management Corridor: ***Camps are to be used only in support of authorized activities. No more than 6 people per camp inclusive of camp staff are allowed on one site. Support of non-commercial activities at spike camps on BLM lands is not authorized. This includes but is not limited to supporting non-paying hunters in the approved camp(s). Camps will not be used in support of personal, family, or 'buddy' hunts. This permit DOES NOT authorize a base camp on BLM lands***".

Specific to Dall sheep for the Brooks Range hunting guide SRPs (Guide Use Area 24-03), the BLM does issue permits based on discrete non-overlapping geographic areas per guide, does not allow for "buddy" hunts, and does not allow hunting for Dall sheep on the west side of the Dalton Highway in this GUA. In addition, the number of permitted client hunts for Dall sheep has not increased in this GUA in at least the past ten years. The BLM continues to contribute to population assessments of the Brooks Range Dall sheep population to monitor and inform how to manage the SRP guide program.

Following a decision to authorize an SRP, recreation management staff and BLM law enforcement coordinate to monitor and manage use on the land. BLM law enforcement routinely contacts commercial hunters in the Dalton Highway Management Corridor, both via vehicle, and backcountry aircraft flights and monitoring. Annual review of the permit is conducted by recreation staff, and permits are subject to annual authorization, even if authorized for multiple years. Staff complete annual performance evaluations to assess permit holder's compliance with required stipulations and SRP terms.

Issuance of an SRP is a discretionary action. Applications for an SRP may be denied based on many factors, including nonconformance with land use plans or designations; a moratorium on permits issued as part of a planning process; state licensing requirements; the results of an environmental analysis; other resource values; public health and safety concerns; and the applicant's past performance, including previous convictions for violating Federal or State laws or regulations concerning the conservation or protection of natural resources.

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Other factors that may determine whether or not the Authorizing Officer approves an SRP application include recreation conflicts in the proposed area of operations, diversity of services provided to the public, number of similar services already offered, and whether the public land area available is sufficient to accommodate the proposed use.

In closing, I want to thank you and your Council for your continued involvement and diligence in matters regarding the Federal Subsistence Management Program. I speak for the entire Board in expressing our appreciation for your efforts and am confident that the Federally qualified subsistence users of the Western Interior Region are well represented through your work.

Sincerely,



Anthony Christianson
Chair

cc: Western Interior Alaska Subsistence Regional Advisory Council
Federal Subsistence Board
Sue Detwiler, Assistant Regional Director, Office of Subsistence Management
Amee Howard, Deputy Assistant Regional Director, Office of Subsistence Management
Robbin La Vine, Subsistence Policy Coordinator, Office of Subsistence Management
Katerina Wessels, Council Coordination Division Supervisor
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George Pappas, State Subsistence Liaison and Acting Fisheries Division Supervisor
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Jonathan Vickers, Anthropology Division Supervisor, Office of Subsistence Management
Karen Deatherage, Council Coordinator, Office of Subsistence Management
Interagency Staff Committee
Benjamin Mulligan, Deputy Commissioner, Alaska Department of Fish and Game
Mark Burch, Special Project Coordinator, Alaska Department of Fish and Game
Administrative Record

Presentation Procedure for Proposals and Closure Reviews

1. Introduction and Presentation of Draft Staff Analysis

2. Report on Board Consultations:

- a. Tribes
- b. ANCSA Corporations

3. Agency Comments:

- a. ADF&G
- b. Federal
- c. Tribal

4. Advisory Group Comments:

- a. Other Regional Advisory Council(s)
- b. Fish and Game Advisory Committees
- c. Subsistence Resource Commissions

5. Summary of Written Public Comments

6. Public Testimony

7. Regional Council Recommendation (motion to adopt)

8. Discussion/Justification

- Is the recommendation consistent with established fish or wildlife management principles?
- Is the recommendation supported by substantial evidence such as biological and traditional ecological knowledge?
- Will the recommendation be beneficial or detrimental to subsistence needs and uses?
- If a closure is involved, is closure necessary for conservation of healthy fish or wildlife populations, or is closure necessary to ensure continued subsistence uses?
- Discuss what other relevant factors are mentioned in OSM Draft Staff Analysis

9. Restate final motion for the record

10. Council's Vote

**DRAFT STAFF ANALYSIS
WP22-39**

ISSUES

Proposal WP22-39, submitted by Alaska Department of Fish and Game (ADF&G), requests to create specific harvest regulations for Alaska hare (*Lepus othus*) in Units 9 and 17.

DISCUSSION

The proponent states that, the once (as recently as the 1980s) abundant Alaska hare in Units 9 and 17 are now at a very low density and has a patchy distribution throughout Bristol Bay and the Alaska Peninsula. In Alaska, the species ranges throughout the western and southwestern portions of the state. Very little is known about the Alaska hare, the apparent decrease in abundance may have been caused by changes in habitat, predation, human harvest, or other natural cyclical events. There are infrequent observations of Alaska hares near King Salmon, Dillingham, and other communities throughout the Bristol Bay region. Alaska hares are not highly productive; they have only one, relatively small-sized litter of young per year. The proponent believes that the limited-management approach of the last 50 years no longer sufficiently addresses appropriate conservation of this species. This proposal would reduce hunting opportunity for this species both in terms of season duration and harvest limits. The reduction in harvest may assist hare populations to increase throughout Units 9 and 17.

The proponent also requested establishing a human use salvage requirement for hare in Units 9 and 17. However, this provision already exists under Federal regulations (see existing Federal regulations section) and is therefore not considered further in this analysis.

Note: The Alaska hare is sometimes called jack rabbits, tundra hare or arctic hare (e.g. Anderson 1974; Klein 1995; Murray 2003; ADF&G 2019a). Federal subsistence regulation uses the term tundra hare, but Alaska hare appears to be the dominate term in contemporary usage, including in State regulation. This analysis contains the terms Alaska hare and tundra hare, used synonymously. It should also be noted that the Alaska or tundra hare is a distinct species from the snowshoe hare, despite the inclusion of both species in the same Federal regulation.

Existing Federal Regulation

§100.25(j)(2) If you take wildlife for subsistence, you must salvage the following parts for human use:

(iv) The hide or meat of squirrels, hares, marmots, beaver, muskrats, or unclassified wildlife.

Unit 9—Hare

Hare (Snowshoe and Tundra): No limit

July 1-June 30

Unit 17 - Hare

Hare (Snowshoe and Tundra): No limit

July 1-June 30

Proposed Federal Regulation

§100.25(j)(2) If you take wildlife for subsistence, you must salvage the following parts for human use:

(iv) The hide or meat of squirrels, hares, marmots, beaver, muskrats, or unclassified wildlife.

Unit 9—Hare

Snowshoe hare (~~Snowshoe and Tundra~~): No limit

July 1-June 30

Alaska hare: 1 hare per day / 4 per season

Nov. 1 – Jan. 31

Unit 17 - Hare

Snowshoe hare (~~Snowshoe and Tundra~~): No limit

July 1-June 30

Alaska hare: 1 hare per day / 4 per season

Nov. 1 – Jan. 31

Existing State Regulation

Unit 9—Hare

Snowshoe hare: No limit

No closed season

Alaska hare: One per day, four total

Nov. 1 – Jan. 31

Hunters must salvage the hide or meat of Alaska hares taken in Unit 9.

Hunters are also encouraged to report harvest of Alaska hares to

ADF&G in King Salmon at (907) 246-3340

Unit 17 - Hare

Hare: No limit

No closed season

Including Alaska and snowshoe hare.

Relevant Federal Regulation

§100.25(a) Definitions:

Hare or hares collectively refers to all species of hares (commonly called rabbits) in Alaska and includes snowshoe hare and tundra hare.

Extent of Federal Public Lands

Unit 9 is comprised of 52.8% Federal public lands and consist of 28.1% National Park Service (NPS) managed lands, 21.9% U.S. Fish and Wildlife Service (USFWS) managed lands, and 2.8% Bureau of Land Management (BLM) managed lands.

Unit 17 is comprised of 27.8% Federal public lands and consist of 21.0% USFWS managed lands, 3.5% BLM managed lands, and 3.3% NPS managed lands.

Customary and Traditional Use Determinations

The Federal Subsistence Board (Board) has not made a customary and traditional use determination for hare in Units 9 and 17. Therefore, all rural residents of Alaska may harvest this species in these units.

Regulatory History

Federal subsistence regulations for hare in Units 9 and 17 have not been changed since 1990, when the Federal management of subsistence fish and wildlife resources on Federal public lands began. At that time, a year-round season with no harvest limit was adopted from State regulation.

State regulation included a year-round season with no harvest limit for hare in Unit 9 until RY2018/19, when ADF&G submitted Proposal 135 for the BOG's consideration. Noting very low densities and patchy distribution of Alaska hares on the southern Alaska Peninsula, ADF&G originally requested that the season for Alaska hares in a portion of Unit 9 be closed entirely. After discussion with locals and staff, they amended their proposal to reduce the season throughout Unit 9 to Nov. 1 – Jan. 31, with a harvest limit of one per day and four annually, and require that either the hide or the meat be salvaged (RC55). ADF&G noted that Alaska hares are of interest to residents of Unit 9 and that offering a season, even restricted one, allows for opportunistic harvest of Alaska hares. They also noted that it provides an opportunity for biologists to gather information from hunters about Alaska hare locations and relative abundance. To this end, ADF&G recommended inclusion of language encouraging voluntary reporting of Alaska hare harvest. This proposal had the support of both active Fish and Game Advisory Committees in the region. The BOG adopted the amended version of the proposal and supported inclusion of the voluntary reporting language. The BOG also adopted a positive finding for customary and traditional use of Alaska hare in Units 9, 10 and 17 (BOG 2019).

In 2020, Proposal WP20-30, was submitted by the Alaska Peninsula/Becharof National Wildlife Refuges requesting to shorten the year-round season for Alaska hares in Unit 9 to Nov. 1 – Jan. 31, and to reduce the harvest limit from no limit to one per day and four annually, which would have aligned

with the recently adopted State regulations. The proposal was rejected by the Board, stating that harvest and population numbers were unknown, and the season end date appeared to be too restrictive. The Board felt that more research was needed to understand the status of the species and is needed prior to adopting the proposal to set season dates. Traditionally, the winter months are when hares are harvested for winter protein.

Current Events Involving the Species

The ADF&G also submitted Wildlife Proposal WP22-45 to create specific harvest regulations for Alaska hare in Units 18, 22, and 23.

The ADF&G has submitted Proposal 24 to the BOG (January 2022) to include Unit 17 with an identical Alaskan hare management structure as Unit 9. ADF&G states that given the ongoing research, continued low abundance, and public concern about this species, it is important to consider a cohesive and comprehensive management framework for this species across the entire Alaska hare range within Alaska.

Biological Background

Taxonomy of the three species of northern hares remains unresolved, which almost certainly contributes to the confusion around common names. Current taxonomic descriptions rely on geographic distributions, rather than morphologic or molecular distinctions, which remain ambiguous. The arctic hare (*Lepus arcticus*) is widely distributed across tundra habitats of Greenland and northern Canada. The mountain hare (*L. timidus*) occurs in northern Eurasia, from eastern Russia to Scandinavia (Cason 2016). Alaska hares are limited to coastal western and southwestern Alaska, ranging from the Baldwin and Seward Peninsulas in the north, to the Alaska Peninsula in the south (Merizon and Carroll 2019).

Alaska hares are among the largest of the *Lepus* genus, weighing approximately 8.5 – 10.5 pounds (Murray 2003). They occupy coastal lowlands, wet meadows, and willow and alder thickets (Merizon and Carroll 2019), and feed on willow buds, leaves, and crowberries (Murray 2003). They are typically solitary, except during breeding season. Alaska hares reproduce a single litter each year, breeding between April and June and giving birth approximately 6.5 weeks later. Litters contain 6.3 young on average, which are fully weaned within 5 – 9 weeks (Murray 2003). Alaska hares can be identified by the black-tipped ears and are significantly larger than the snowshoe hare (ADG&G 2019).

The Alaska hare is among the most poorly understood wildlife species in Alaska. Hunter questionnaires have been the only source of information about the species and there has been no long-term population monitoring.

Alaska Peninsula/Becharof NWR ranked the Alaska hare as the Refuge's #3 prioritized Resource of Concern as an ecologically significant endemic species vulnerable to the influence of climate change. Resource managers know little about Alaska hare habitat preference (Smith 2021, pers. comm.). Alaska hares occur at low density, and exhibit much lower fecundity than snowshoe hares and are

perhaps decreasing in range and numbers (Best & Henry, 1994). The last known eruptive population on the Peninsula occurred in the winter of 1953-54 (Schiller and Rausch 1956). The pervasive influence of predation on hares implies strong selection on their cryptic coloration (Merilaita 2009) and against sustained seasonal mismatch in coat color (Griffin and Mills 2009, Litvaitis 1991). It is unknown how much plasticity exists in these traits, nor how much seasonal color mismatch is expected in the future with climate change, as snow cover now lasts a shorter time in the fall and spring (Mills et al. 2013).

There is an effort to better understand this species. Beginning in 2017, ADF&G began to evaluate capture techniques. They also embarked on a tour of rural communities throughout the range of the Alaska hare to discuss local observations, historical abundance, and harvest patterns. In 2018, a multi-year study was initiated to evaluate movement and mortality, as well as long-term capture techniques. Anecdotal observations suggest that Alaska hare abundance is well below that observed in the 1950s and 1960s, throughout its range. It is unknown whether the population has been in a long-term decline, or whether it experienced a crash and now exists as a low density but relatively stable population (Merizon and Carroll 2019).

Harvest History

Little is known about the harvest of Alaska hare, which is one of the least accessible small game species. However, it is harvested throughout the communities of western and southwestern Alaska as documented in household harvest surveys (Merizon and Carroll 2019, **Table 1**). Some insights into smaller wildlife species harvest are available in ADF&G's Statewide Small Game Hunter Survey, results for which were compiled for, regulatory year, RY2011/12 and RY2013/14.

The most recent results, from RY2013/14, show that half of the hunters responding to the survey reported hunting small game in Units 13, 14 or 20, while only about 5% of respondents reported hunting small game in Unit 9 and about 4% in Unit 17. Response rates were not similar among geographic areas of the State. The Alaska Peninsula (Unit 9; 24%) and Western Rural (Units 17, 18, 22, and 23; 16%) had much lower survey response rates than compared to the larger urban centers of Alaska, like Anchorage (35%) and the Mat-Su (34%). Therefore, it is difficult to accurately understand the overall harvest pressure on small game in those areas. Most Alaska resident respondents reported hunting within the geographic region where they reside, but only 3% of respondents reported participating in Federal subsistence small game hunts. Respondents reported that they hunt small game opportunistically while engaging in other activities, but also target small game specifically. Statewide, ptarmigan and spruce grouse were targeted most frequently. Within the Alaska Peninsula, respondents reported hunting for Alaska hare for an average of 2.5 days each year (Merizon et al. 2015).

Table 1. Alaska hare harvest by community (Wiita et al. 2018)

Unit 9			Unit 17		
Community	Study Year	Estimated total Harvest	Community	Study Year	Estimated total Harvest
Chignik City	1984	4	Aleknagik	1989	23
	1989	0		2008	0
	1991	0	Clarks Point	1989	26
Chignik Lagoon	1984	0	Dillingham	2008	0
	1989	3		2010	83
Chignik Lake	1984	0	Ekwok	1987	13
	1989	3	Koliganek	1987	13
	1991	0	Manokotak	2008	0
Egehik	1984	3	New Stuyahok	1987	20
Igiugig	1983	0	Togiak	2008	0
	1992	17			
Iliamna	1983	0			
	1991	34			
Ivanof Bay	1984	3			
	1989	0			
King cove	1992	38			
King Salmon	1983	20			
Kokhanok	1983	43			
	1992	293			
Levelock	1988	51			
	1992	9			
Naknek	1983	24			
	2007	3			
Newhalen	1983	0			
	1991	80			
Nondalton	1973	0			
	1980	38			
	1981	18			
	1983	0			
Pedro Bay	1982	1			
	1996	0			
Perryville	1984	7			
	1989	0			
Pilot Point	1987	7			
Port Alsworth	1983	20			
Sand Point	1992	147			

Unit 9		
South Naknek	1983	12
	1992	0

*Note- Some Community/Study years not included in this table only showed harvest for “Hares, Jackrabbits, Unknown.” Actual harvest maybe higher.

Effects of the Proposal

If this proposal is adopted, opportunity to harvest Alaska hares under Federal subsistence regulation will be reduced. Given that the State season has already been reduced for Unit 9, and ADF&G submitted a proposal to the BOG (January 2022) to include Unit 17, this represents an actual reduction of opportunity for Federally qualified subsistence users. This change will result in reduced harvest of Alaska hare, particularly since it includes both a daily and an annual harvest limit. Though neither harvest nor population size are quantified, harvest reduction has the potential to improve the conservation status of the Unit 9 and Unit 17 Alaska hare populations, which is reported to be well below historical size. Adoption of this proposal will also reduce regulatory complexity in Unit 9 by aligning Federal regulation with recently changed State regulation, as well as in Unit 17 if the BOG adopts Proposal 24.

OSM Preliminary Conclusion

Support Proposal WP22-39 with **modification** to modify the definition of hare in Federal regulations.

The modified regulations should read:

§100.25(a) Definitions:

*Hare or hares collectively refers to all species of hares (commonly called rabbits) in Alaska and includes snowshoe hare and tundra **or Alaska** hare.*

Unit 9—Hare

Snowshoe hare (~~Snowshoe and Tundra~~): No limit *July 1-June 30*

Alaska hare: 1 hare per day / 4 per season *Nov. 1 – Jan. 31*

Unit 17 - Hare

Snowshoe hare (~~Snowshoe and Tundra~~): No limit *July 1-June 30*

Alaska hare: 1 hare per day / 4 per season *Nov. 1 – Jan. 31*

Justification

Anecdotal information indicates that Alaska hares in Units 9 and 17 are scarcer than they have been in the past. Local managers concur that Alaska hares in this region exist at a low density and is the #3 prioritized Resource of Concern as an ecologically significant endemic species vulnerable from the influence of climate change. Biologically, it is appropriate to restrict harvest in such a situation. Reducing the season from July 1 – June 30 to Nov. 1 – Jan. 31 reduces the season by 75% yet continues to offer Federally qualified subsistence users the opportunity to harvest Alaska hares during winter when they are engaging in other subsistence activities.

Imposing a harvest limit of 1 per day and 4 annually may have a greater effect on reducing overall harvest and promoting population recovery. Collectively, changes in season and harvest limit offer a balance between imposing conservation measures and allowing for the continuation of subsistence uses in the near term. Any positive effect these changes have on the Alaska hare population will benefit subsistence users in the long term.

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WP22-45 Executive Summary	
General Description	Wildlife Proposal WP22-45 requests to create specific harvest regulations for Alaska hare (<i>Lepus othus</i>) in Units 18, 22, and 23. <i>Submitted by: Alaska Department of Fish and Game.</i>
Proposed Regulation	<p>Unit 18— Hare</p> <p><i>Hare (Snowshoe and Tundra): No limit</i> <i>July 1 – June 30</i></p> <p><i>Alaska Hare: 2 hare per day / 6 per season</i> <i>Sept. 1 – April 15</i></p> <p>Unit 22— Hare</p> <p><i>Hare (Snowshoe and Tundra): No limit</i> <i>Sept. 1 – April 15</i></p> <p><i>Alaska Hare: 2 hare per day / 6 per season</i> <i>Sept. 1 – April 15</i></p> <p>Unit 23— Hare</p> <p><i>Hare (Snowshoe and Tundra): No limit</i> <i>July 1 – June 30</i></p> <p><i>Alaska Hare: 2 hare per day / 6 per season</i> <i>Sept. 1 – April 15</i></p>
OSM Preliminary Conclusion	<p>Support Proposal WP22-45 with modification to shorten the season to Aug. 1 – May 31 and to modify the definition of hare in Federal regulations.</p> <p>The modified regulations should read:</p> <p>§100.25(a) Definitions:</p> <p><i>Hare or hares collectively refers to all species of hares (commonly called rabbits) in Alaska and includes snowshoe hare and tundra or Alaska hare.</i></p> <p>Unit 18— Hare</p> <p><i>Hare (Snowshoe and Tundra): No limit</i> <i>July 1 – June 30</i></p> <p><i>Alaska Hare: 2 hare per day / 6 per season</i> <i>Aug. 1 – May 31</i></p> <p>Unit 22— Hare</p>

	<p><i>Hare (Snowshoe and Tundra): No limit Sept. 1 – April 15</i></p> <p><i>Alaska Hare: 2 hare per day / 6 per season Aug. 1 – May 31</i></p> <p>Unit 23— Hare</p> <p><i>Hare (Snowshoe and Tundra): No limit July 1 – June 30</i></p> <p><i>Alaska Hare: 2 hare per day / 6 per season Aug. 1 – May 31</i></p>
Yukon-Kuskokwim Delta Subsistence Regional Advisory Council	
Seward Peninsula Subsistence Regional Advisory Council	
Northwest Arctic Subsistence Regional Advisory Council	
North Slope Subsistence Regional Advisory Council	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

DRAFT STAFF ANALYSIS WP22-45

ISSUES

Proposal WP22-45, submitted by Alaska Department of Fish and Game (ADF&G), requests to create specific harvest regulations for Alaska hare (*Lepus othus*) in Units 18, 22, and 23.

DISCUSSION

The proponent states that, the once (as recently as the 1980s) abundant Alaska hare in Units 18, 22, and 23 is now at a very low density and has a patchy distribution throughout the Yukon-Kuskokwim Delta (YKD), Seward Peninsula, and Northwestern Alaska region. In Alaska, the species resides only throughout the extreme western and southwestern portions of the state. Very little is known about the Alaska hare, but the apparent decrease in abundance may have been caused by changes in habitat, predation, human harvest, or other natural cyclical events. Although seemingly more abundant in Units 22 and 23, there are infrequent observations of Alaska hare throughout the YKD and Seward Peninsula. Alaska hares are not highly productive; they have only one, relatively small-sized litter of young per year. The proponent believes that the limited-management approach of the last 50 years no longer sufficiently addresses appropriate conservation of this species. This proposal would reduce hunting opportunity for this species both in terms of season duration and harvest limits. The reduction in harvest may assist Alaska hare populations to increase throughout Units 18, 22, and 23.

The proponent also requested establishing a human use salvage requirement for hare in Units 18, 22 and 23. However, this provision already exists under Federal regulations (see existing Federal regulations section) and is therefore not considered further in this analysis.

Note: The Alaska hare is sometimes called jack rabbits, tundra hare, or arctic hare (e.g. Anderson 1978; Klein 1995; Murray 2003; ADF&G 2019). Federal subsistence regulation uses the term tundra hare, but Alaska hare appears to be the dominate term in contemporary usage, including in State regulation. This analysis uses the terms Alaska hare and tundra hare synonymously. It should also be noted that the Alaska or tundra hare is a distinct species from the snowshoe hare, despite the inclusion of both species in the same Federal regulation.

Existing Federal Regulation

§100.25(j)(2) If you take wildlife for subsistence, you must salvage the following parts for human use:

(iv) The hide or meat of squirrels, hares, marmots, beaver, muskrats, or unclassified wildlife.

Unit 18—Hare

Hare (Snowshoe and Tundra): No limit

July 1-June 30

Unit 22—Hare

Hare (Snowshoe and Tundra): No limit

Sept. 1 – April 15

Unit 23—Hare

Hare (Snowshoe and Tundra): No limit

July 1- June 30

Proposed Federal Regulation

§100.25(j)(2) If you take wildlife for subsistence, you must salvage the following parts for human use:

(iv) The hide or meat of squirrels, hares, marmots, beaver, muskrats, or unclassified wildlife.

Unit 18— Hare

Hare (Snowshoe ~~and Tundra~~): No limit

July 1 – June 30

Alaska Hare: 2 hare per day / 6 per season

Sept. 1 – April 15

Unit 22— Hare

Hare (Snowshoe ~~and Tundra~~): No limit

Sept. 1 – April 15

Alaska Hare: 2 hare per day / 6 per season

Sept. 1 – April 15

Unit 23— Hare

Hare (Snowshoe ~~and Tundra~~): No limit

July 1 – June 30

Alaska Hare: 2 hare per day / 6 per season

Sept. 1 – April 15

Existing State Regulation

Unit 18, 22, 23— Hare

Snowshoe hare: no limit

No closed season

Alaska hare: two per day, six total

Aug 1 – May 31

Hunters must salvage the hide or meat of Alaska hares taken 18, 22, and 23

Relevant Federal Regulation

§100.25(a) Definitions:

Hare or hares collectively refers to all species of hares (commonly called rabbits) in Alaska and includes snowshoe hare and tundra hare.

Extent of Federal Public Lands

Unit 18 is comprised of 66.7% Federal public lands and consist of 64.0% U.S. Fish and Wildlife Service (USFWS) managed lands and 2.7% Bureau of Land Management (BLM) managed lands.

Unit 22 is comprised of 43.5% Federal public lands and consist of 28.1% BLM managed lands, 12.4% NPS managed lands, and 3.0% USFWS managed lands.

Unit 23 is comprised of 70.5% Federal public lands and consist of 39.6% NPS managed lands, 21.8% BLM managed lands, and 9.1% USFWS managed lands.

Customary and Traditional Use Determinations

The Federal Subsistence Board (Board) has not made a customary and traditional use determination for hare in Units 18, 22, and 23. Therefore, all rural residents of Alaska may harvest this species in these units.

Regulatory History

Federal subsistence regulations for hare in Units 18 and 23 have not changed since 1990, when the Federal subsistence management program began. At that time, a year-round season with no harvest limit was adopted from State regulation.

Federal subsistence regulations for hare in Unit 22 were established in 1990, when the Federal subsistence management program began. At that time, a year-round season with no harvest limit was adopted from State regulation.

In 1992, Proposal P92-098 was submitted by a member of the public requesting complete closure of muskrat trapping and hare harvest in Unit 23 until the population rebounded. The proposal was rejected by the Board.

In 1995, Proposal P95-46 was submitted by the Seward Peninsula Subsistence Regional Advisory Council to shorten the season for hares in Unit 22 from July 1 – June 30 to Sept. 1 – April 15. The intent of the proposal was to close the season for hares during the mating, breeding and birthing season. The proposal was adopted by the Board.

ADF&G submitted Proposals 15 and 43 for the Alaska Board of Game's (BOG) consideration during the January 2020 meeting in Nome. Both proposals consisted of two parts. The first part of each proposal was for customary and traditional use findings of Alaska hares in Units 18, 22, and 23. The BOG adopted a positive finding for these units. The second part, noting very low densities and patchy distribution of Alaska hares in the units, ADF&G requested the reduction of season and harvest limits in Units 18 and 22. For consistency the BOG adopted an identical management structure in Units 18, 22, and 23 for the Alaska hare. The State adopted a harvest limit of two per day with a total of six per season and an Aug 1 – May 31 season that required hunters to salvage the hide or meat for human usage (BOG 2020).

Current Events Involving the Species

The ADF&G also submitted Wildlife Proposal WP22-39 to create specific harvest regulations for Alaska hare in Units 9 and 17.

Biological Background

Taxonomy of the three species of northern hares remains unresolved, which almost certainly contributes to the confusion around common names. Current taxonomic descriptions rely on geographic distributions, rather than morphologic or molecular distinctions, which remain ambiguous. The arctic hare (*Lepus arcticus*) is widely distributed across tundra habitats of Greenland and northern Canada. The mountain hare (*L. timidus*) occurs in northern Eurasia, from eastern Russia to Scandinavia (Cason 2016). Alaska hares are limited to coastal western and southwestern Alaska, ranging from the Baldwin and Seward Peninsulas in the north, to the Alaska peninsula in the south (Merizon and Carroll 2019).

Alaska hares are among the largest of the *Lepus* genus, weighing approximately 8.5 – 10.5 pounds (Murray 2003). They occupy coastal lowlands, wet meadows, and willow and alder thickets (Merizon and Carroll 2019), and feed on willow buds, leaves, and crowberries (Murray 2003). They are typically solitary, except during breeding season. Alaska hares reproduce a single litter each year, breeding between April and June and giving birth approximately 6.5 weeks later. Litters contain 6.3 young on average, which are fully weaned within 5 – 9 weeks (Murray 2003). Alaska hares can be identified by the black-tipped ears and are significantly larger than the snowshoe hare (ADG&G 2019).

The Alaska hare is among the most poorly understood wildlife species in Alaska. Hunter

questionnaires have been the only source of information about the species and there has been no long-term population monitoring. Beginning in 2017, ADF&G began to evaluate capture techniques to better understand this species. They also embarked on a tour of rural communities throughout the range of the Alaska hare to discuss local observations, historical abundance, and harvest patterns. In 2018, a multi-year study was initiated to evaluate movement and mortality, as well as long-term capture techniques. Anecdotal observations suggest that Alaska hare abundance is well below that observed in the 1950s and 1960s, throughout its range. It is unknown whether the population has been in a long-term decline, or whether it experienced a crash and now exists as a low density but relatively stable population (Merizon and Carroll 2019).

Harvest History

Little is known about the harvest of Alaska hare, which is one of the least accessible small game species. However, it is harvested throughout the communities of western and southwestern Alaska as documented in household harvest surveys (Merizon and Carroll 2019, **Table 1**). Some insights into small game harvest are available in ADF&G's Statewide Small Game Hunter Survey, results for which were compiled for RY2011/12 and RY2013/14.

The most recent results, from RY2013/14, show that half of the hunters responding to the survey reported hunting small game in Units 13, 14 or 20, while only about 6% of respondents reported hunting small game in Unit 18, about 4% in Unit 22 and about 3% in Unit 23. While response rates of those receiving surveys were lower for the Western Rural area, which includes Units 18, 22, and 23 (16%) versus statewide (30%). Most Alaska resident respondents reported hunting within the geographic region where they reside, but only 3% of respondents statewide reported participating in Federal subsistence small game hunts. Respondents reported that they hunt small game opportunistically while engaging in other activities, but also target small game specifically. Statewide, ptarmigan and spruce grouse were targeted most frequently. Within the Western Rural geographical area, respondents reported hunting for Alaska hare for an average of 2.5 days each year (Merizon et al. 2015).

Table 1: Alaska hare harvest by community (Mikow et al. 2020)

Unit 18			Unit 22			Unit 23		
Community	Study Year	Estimated total Harvest	Community	Study Year	Estimated total Harvest	Community	Study Year	Estimated total Harvest
Akiachak	1998	0	Brevig Mission	1989	6	Ambler	2012	0
Akiak	2010	42	Golovin	1989	4	Buckland	2003	16
Alakanuk	1980	669		2012	0	Deering	1994	12
Bethel	2012	173	Shishmaref	1989	112		2013	3
Eek	2013	7		1995	62	Kiana	2006	0
Emmonak	1980	806		2014	16	Kivalina	1964	0
	2008	24	Stebbins	1980	110		1982	0
Kotlik	1980	552		2013	2		1983	0
Kwethluk	2010	52	Wales	1993	1		1992	0
Mountain Village	1980	66				Kobuk	2009	4
	2010	63					2012	0
Napakiak	2011	43				Kotzebue	1986	64
Napaskiak	2011	20					1991	97
Nunam Iqua (Sheldon Point)	1980	92					2014	0
Oscarville	2010	0				Noatak	1994	0
Pilot Station	2013	0				Noorvik	2008	0
							2012	31

Unit 18		
Quinhagak	1982	82
	2013	15
Russian Mission	2011	2
Scammon Bay	2013	165
Tuluksak	2010	20
Tuntutuliak	2013	0

Unit 23		
Selawik	2011	4
Shungnak	2002	0
	2012	0

*Note- Some Community/Study years not included in this table only showed harvest for “Hares, Jackrabbits, Unknown.” Actual harvest maybe higher.

Effects of the Proposal

If this proposal is adopted, opportunity to harvest Alaska hares under Federal subsistence regulation would be reduced. Given that the State season has already been reduced for Units 18, 22, and 23, this represents an actual reduction of opportunity for Federally qualified subsistence users. This change would result in reduced harvest of Alaska hare, particularly since it includes both a daily and an annual harvest limit. Though neither harvest nor population size are quantified, harvest reduction has the potential to improve the conservation status of Alaska hare populations in Units 18, 22, and 23, which are reported to be well below historical size. Adoption of this proposal would also result in Federal regulations becoming more restrictive than State regulations.

OSM PRELIMINARY CONCLUSION

Support Proposal WP22-45 **with modification** to shorten the season to Aug. 1 – May 31 and to modify the definition of hare in Federal regulations.

The modified regulations should read:

§100.25(a) Definitions:

*Hare or hares collectively refers to all species of hares (commonly called rabbits) in Alaska and includes snowshoe hare and tundra **or Alaska hare.***

Unit 18— Hare

Hare (Snowshoe ~~and Tundra~~): No limit *July 1 – June 30*

Alaska Hare: 2 hare per day / 6 per season *Aug. 1 – May 31*

Unit 22— Hare

Hare (Snowshoe ~~and Tundra~~): No limit *Sept. 1 – April 15*

Alaska Hare: 2 hare per day / 6 per season *Aug. 1 – May 31*

Unit 23— Hare

Hare (Snowshoe ~~and Tundra~~): No limit *July 1 – June 30*

Alaska Hare: 2 hare per day / 6 per season *Aug. 1 – May 31*

Justification

Anecdotal information indicates that Alaska hares in Units 18, 22, and 23 are scarcer than they have been in the past. Biologically, it is appropriate to restrict harvest in such a situation. Reducing the season from Jul. 1 – Jun. 30 to Aug. 1 – May 31 reduces the season by approximately 16%, yet continues to offer subsistence users the opportunity to harvest Alaska hares during fall, winter, and spring when they are engaging in other subsistence or recreational activities. The proponent requested a season which would be more restrictive than existing State regulations. Additionally, Federal qualified subsistence users would still be able to harvest Alaska hare in August and May under the more liberal State regulations. This modification would align State and Federal seasons, reducing regulatory complexity and user confusion.

Imposing a harvest limit of 2 per day and 6 annually may have a greater effect on reducing overall harvest and promoting population recovery than shortening the season. Collectively, changes in season and harvest limit offer a balance between imposing conservation measures and allowing for the continuation of subsistence uses in the near term. Any positive effect these changes have on the Alaska hare population will benefit subsistence users in the long term.

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WP22-46 Executive Summary	
General Description	Wildlife Proposal WP22-46 requests that brown bear harvest limit for that portion of Unit 24B within Gates of the Arctic National Park be increased from one to two bears. <i>Submitted by: Gates of the Arctic National Park Subsistence Resource Commission.</i>
Proposed Regulation	<p>Unit 24—Brown Bear</p> <p><i>Unit 24 remainder — 1 bear by State registration Aug. 10 - June 30 permit.</i></p> <p><i>Unit 24B, that portion within Gates of the Arctic National Park — 2 bears by State registration Aug. 10 – June 30 permit</i></p>
OSM Preliminary Conclusion	Support
Western Interior Subsistence Regional Advisory Council	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	3 Oppose

**DRAFT STAFF ANALYSIS
WP22-46**

ISSUES

Proposal WP22-46, submitted by Gates of the Arctic National Park Subsistence Resource Commission (Commission), requests that brown bear harvest limit for that portion of Unit 24B within Gates of the Arctic National Park (GAAR) be increased from one to two bears.

DISCUSSION

The proponent submitted this proposal because residents of Anaktuvuk Pass have observed brown bear populations growing and believe the harvest to be far below sustainable yield. The Commission states that this proposal would afford Anaktuvuk Pass residents hunting brown bears additional harvest opportunity.

In 2020, the Commission submitted Proposal 72 to the Alaska Board of Game (BOG) to increase the brown bear harvest limit to two bears in Unit 24B under State regulations. The BOG adopted Proposal 72 at its March 2020 meeting (ADF&G 2021a).

Existing Federal Regulation

Unit 24—Brown Bear

Unit 24—1 bear by State registration permit.

Aug. 10 - June 30

Proposed Federal Regulation

Unit 24—Brown Bear

Unit 24 remainder — 1 bear by State registration permit.

Aug. 10 - June 30

Unit 24B, that portion within Gates of the Arctic National Park — 2 bears by State registration permit

Aug. 10 – June 30

Existing State Regulation

Unit 24B—Brown Bear

Residents: 2 bears every regulatory year* *Aug. 10 - June 30*

Nonresidents: 1 bear every regulation year *Aug. 10 – June 30*

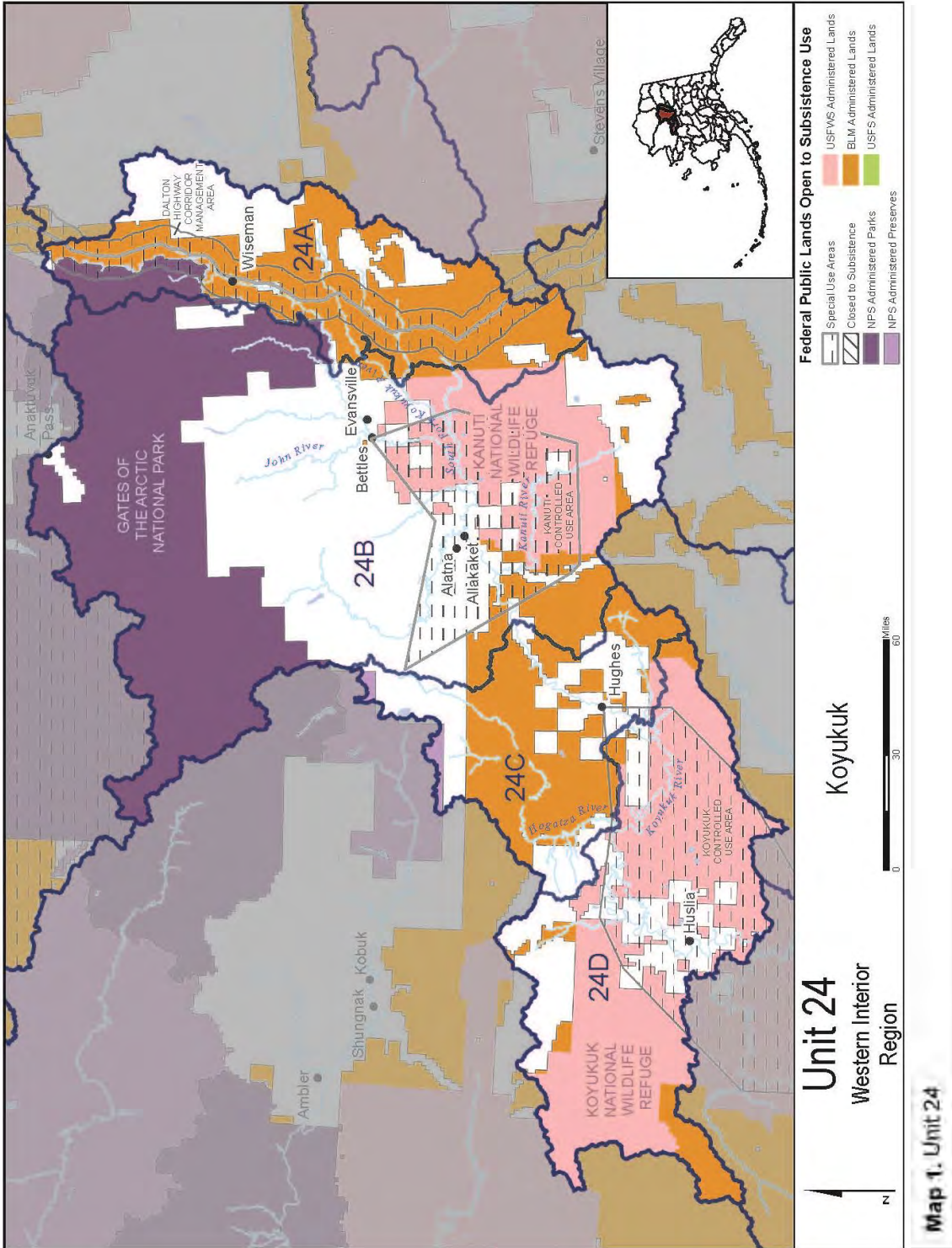
In addition to general regulations, subsistence regulations apply to the following “Resident Only” hunt

Residents: Two bears every regulatory year by permit available in Galena, Fairbanks, and McGrath beginning July 9 (RB601)* *Aug. 10 – June 30*

*Notes: After sealing, hides with claws attached and skulls maybe sold.

Extent of Federal Public Lands

Unit 24B is composed of 58.6% Federal public lands and consists of 38.1% National Park Service (NPS) managed lands, 14.4% U.S. Fish and Wildlife Service (USFWS) managed lands, and 6.1% Bureau of Land Management (BLM) managed lands (**Map 1**).



Customary and Traditional Use Determinations

Rural residents of Unit 24 have a customary and traditional use determination for brown bear in Unit 24.

Only residents of “resident zone communities” may hunt in national parks under Federal subsistence regulations. The resident zone communities of GAAR are the following: Alatna, Allakaket, Ambler, Anaktuvuk Pass, Bettles, Evansville, Hughes, Kobuk, Nuiqsut, Shungnak, and Wiseman.

Regulatory History

Proposal WP01-25 was adopted by the Federal Subsistence Board (Board) in 2001, extending the brown bear season end date from May 31 to June 15. This provided additional harvest opportunity to subsistence users and aligned Federal subsistence regulations with State regulations.

Proposal WP04-77 was adopted by the Board in 2004, extending the brown bear season from Sept. 1 – June 15 to Aug. 10 – June 15. This provided additional harvest opportunity to subsistence users and aligned Federal subsistence regulations with State regulations.

At its March 2020 meeting, the BOG adopted Proposal 72 to increase the resident State brown bear harvest limit in Unit 24B from one bear per year to two bears per year. The BOG concluded that there were no biological concerns. Assessing data from other units that had harvest limit of two bears, the expected increase in total bear harvest in Unit 24B would be 5 bears. This increase in harvest would still be below State management objectives.

Current Events

The Commission also submitted Wildlife Proposal WP22-56 to increase the brown bear harvest limit to two bears in Unit 26A, that portion within GAAR.

Biological Background and Harvest History

State management goals and objectives for brown bears in Unit 24 are as follows (Harper and McCarty 2013):

- Protect, maintain, and enhance the brown bear population and its habitat in concert with other components of the ecosystem.
- Manage a brown population that will sustain a three-year mean annual reported harvest of at least 20 bears in the northern portion of the unit (north of Allakaket) and at least 15 bears in the southern (remaining) portion of the unit, with at least 50% males in the reported harvest.

Unlike populations of brown bears in the contiguous 48 states, brown bears in Alaska are not considered threatened or endangered and continue to inhabit their historic range (BOG 2006).

Using extrapolated data from similar habitats and units, the estimated brown bear population for the northern and southern portions of Unit 24 are 450 bears and 180-320 bears, respectively. GAAR has an estimated density of 33.4 bears/1,000 km²(Schmidt 2021). Reproductive output within GAAR is among the lowest in Alaska. Limited food resources and a short growing season are likely contributing factors to this pattern (Hilderbrand et al. 2019). However, the total estimated harvest has consistently been <2% of the estimated bear population per year (Schmidt 2021) with the sustainable harvest rate estimated at 5-6%. The harvest rate is well below the State’s management objectives. The unit's brown bear population is thought to be stable or slowly increasing (Woolington 1998, BOG 2020).

Habitat

Global warming is occurring in the Arctic at more than twice the global rate. The magnitude and direction of change in temperature, snow-free days and plant productivity vary locally based on elevation, soil chemistry, geological history, hydrology and plant community structure (Hilderbrand et al. 2019). Habitat use by brown bears typically varies seasonally based on food availability (Suring et al. 1998). Brown bears often select for edge habitats that provide a heterogeneous mix of landscapes and food resources (Nielsen et al. 2010).

Cultural Knowledge and Traditional Practices

Federally qualified subsistence users of brown bears in Unit 24B, that portion within GAAR include residents of the resident zone communities of Alatna, Allakaket, Anaktuvuk Pass, Bettles, Evansville, Hughes, and Wiseman, a combined total population estimated at 924 people in 2020 (ADOLWD 2021). Most of these communities are situated in the Koyukuk River drainage and most residents are of the Koyukon Athabascan cultural tradition. The *Nunamiut* of Anaktuvuk Pass, in contrast, are Inupiaq-speaking people whose hunting and fishing patterns differ from coastal-dwelling Inupiat who rely heavily on marine resources. Nunamiut depend more on inland resources, mostly caribou, Dall sheep, and to a lesser extent, nonsalmon fish (Holen et al. 2012).

Residents of Anaktuvuk Pass, which is situated within the boundaries of GAAR, are the primary harvesters of brown bears (*aklak*) within the Park.

Estimated harvests of brown bears by Anaktuvuk Pass residents, based on house-to-house harvest surveys, ranges from 2 brown bears in 1994 to 10 brown bears in 2011 (**Table 1**).

Table 1. The estimated harvest of brown bears by residents of Anaktuvuk Pass, based on household harvest surveys. CI 95%, lower harvest estimate is the lower bound of the estimate or the reported harvest, whichever is larger (ADF&G 2021b).

Community Name	Study Year	Percentage of Households Using Brown Bears	Estimated Brown Bear Harvest	Lower Harvest Estimate	Upper Harvest Estimate
Anaktuvuk Pass	2014	4%	4	2	7
	2011	10%	10	7	16
	1998	Not asked	3	3	3
	1994	Not asked	2	2	2

Harvest History

In Unit 24, the three-year mean reported harvest is 15 bears (RY16-RY18), including 14 bears harvested on average in the northern portion of the unit (north of Allakaket) and one bear in the southern portion. Only 51% of the harvest was by Alaska residents. Using a conservative 5-6% harvest rate, it is estimated that a minimum annual harvest of 39-56 bears can be sustained for all of Unit 24 (BOG 2020).

Other Alternatives Considered

One alternative considered was to increase the brown bear harvest limit to two bears in all of unit 24B, which would include Kanuti National Wildlife Refuge (NWR) and some BLM lands and would align Federal and State regulations. While OSM considers this modification outside the scope of the current proposal, it is an option for the Regional Advisory Councils to consider. No impacts to the brown bear populations are expected from this modification as Federally qualified subsistence users can already harvest two bears on these Federal public lands under State regulations per BOG's adoption of Proposal 72 in 2020.

Effects of the Proposal

Changing Federal regulations within GAAR to coincide with recently adopted State regulations is not expected to have a substantial impact to current harvest levels and should have minimal impact on the brown bear population given the low levels of harvest in the area.

If adopted, this proposal would align Federal regulations within GAAR with State harvest limits which would simplify regulations and lead to less confusion for users in Unit 24B. It would also provide greater hunting opportunity for Federally qualified subsistence users of brown bear in Unit 24 living in the resident zone communities of GAAR. However, adoption of this proposal as submitted would retain the more restrictive harvest limit of one bear per year on other Federal public lands within Unit 24B, specifically Kanuti NWR and BLM lands, although Federally qualified subsistence users can already harvest two bears on these Federal lands under more liberal State regulations.

OSM PRELIMINARY CONCLUSION

Support Proposal WP22-46

Justification

Current harvest rates are well below the State recommended sustainable harvest for Unit 24. Alaska residents can already harvest two bears in Unit 24B under State regulations. Increasing the harvest limit from one bear to two bears in Unit 24B, within GAAR for Federally qualified subsistence users is not expected to increase harvest rates above the minimal sustainable level and would increase harvest opportunity for Federally qualified subsistence users.

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WRITTEN PUBLIC COMMENTS

7/21/2021

Mail - AK Subsistence, FW7 - Outlook

[EXTERNAL] Limit take

Luci Beach <lucibeach@gmail.com >

Mon 7/19/2021 8:49 PM

To: AK Subsistence, FW7 <subsistence@fws.gov>

Cc: lucibeach @ gmail. com <lucibeach@gmail.com>

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There seems to be an unreasonable war on Alaska's predators. We should not be so excessive with bag limits of brown bears.

ie

Given the low brown bear density and productivity in the park/preserve, and possible excessive take, increasing the bag limit to two bears is not a good idea. And if the Board adopts the SRC's proposal, in addition to the adverse effect on park bears the 2018 precedent will be enhanced. We could see future wildlife proposals for two bears in the other parks, monuments, and preserves where subsistence is permitted and where one bear is the rule.

Sincerely,
Luci Beach

<https://outlook.office365.com/mail/subsistence@fws.gov/inbox/id/AAQkADZINDE2M2RhLWVIOTgtNDQ1OS04YjQxLWE0YzY0NWl3MDNjZQAQANH...> 1/1

7/21/2021

Mail - AK Subsistence, FW7 - Outlook

[EXTERNAL] Wp22-46 and wp22-56

james kowalsky <jimkowalsky@yahoo.com>

Mon 7/19/2021 10:39 PM

To: AK Subsistence, FW7 <subsistence@fws.gov>

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Please consider these comments from Alaskans FOR Wildlife on the Resource Council's proposals to increase the killing of grizzly from one to two in Gates of the Arctic National Park and Preserve.

The Alaskans For Wildlife notes the documented low reproductive rates of the grizzly in the arctic as sufficient reason to strongly oppose the proposals for increased killing.

We join the opposition of agencies to ask that these proposals be denied, as unsupported and unsupportable.

We urge that instead a clear measure of stewardship be clearly demonstrated in the results of deliberations over how grizzlies and other resident wildlife are considered and managed to the view of a public who are expected to support subsistence.

Thank you for consideration of these views.

Sincerely,

Jim Kowalsky

Chair

Alaskans FOR Wildlife

Fairbanks, Alaska

907 488 2434

PO Box 81957

Fairbanks, Alaska. 99708

907 488 2434

<alaskansforwildlife.org>

<https://outlook.office365.com/mail/subsistence@fws.gov/inbox/id/AAQkADZiNDE2M2RhLWVlOTgtNDQ1OS04YjQxLWE0YzY0NWl3MDNjZQAQAE5U...> 1/1

7/21/2021

Mail - AK Subsistence, FW7 - Outlook

[EXTERNAL] Comments on proposed changes to Federal Subsistence Hunting Regulations, specifically grizzly bears in GAAR

Bill Sherwonit <akgriz@hotmail.com>

Mon 7/19/2021 8:21 PM

To: AK Subsistence, FW7 <subsistence@fws.gov>

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

To Theo Matuskowitz,

I wish to comment on proposed regulation changes that would increase the harvest/kill of brown/grizzly bears in Gates of the Arctic National Park and Preserve. I believe the proposals are WP22-46 and WP22-56, but I'm not absolutely certain about that.

I wish to express my strong opposition to any increase in the annual take/kill of brown/grizzly bears within Gates of the Arctic National Park and Preserve (GAAR). Based on information given to me, there's already some evidence that overharvesting of grizzly bears is occurring in parts of Gates (along some rivers). Because of the low density of grizzlies in GAAR, even slight overharvest can have significantly harmful impacts. The bears should be managed conservatively and the proposed increase does just the opposite of that.

While I don't live in the region or lead a subsistence lifestyle, I have a long-running relationship with GAAR and surrounding areas that reaches back to the 1970s (yes, even before the park existed). Since the mid-1980s I have made several trips into Gates as an "adventure traveler" and the presence of grizzly bears is among the wild values of the park and preserve that means the most to me. I adamantly oppose any regulation changes that would liberalize the kill of grizzly bears and place that population of bears at risk, however small it may seem.

Thank you for considering my comments and perspectives,
Bill Sherwonit
2441 Tulik Drive
Anchorage, AK 99517

<https://outlook.office365.com/mail/subsistence@fws.gov/inbox/id/AAQkADZINDE2M2RhLWVtOgtNDQ1OS04YjQxLWE0YzY0NWl3MDNjZQAQA6B...> 1/1

WP22-41 Executive Summary

<p>General Description</p>	<p>Wildlife Proposal, WP22-41, requests that the Federal in-season manager be delegated authority to open and close seasons, announce harvest limits, and set sex restrictions for caribou in all or portions of Units 9A, 9B, 9C, 17A, 17B, 17C, 18, 19A, and 19B via delegation of authority letter (Appendix 1). <i>Submitted by: Togiak National Wildlife Refuge (NWR) and Yukon Delta NWR</i></p>
<p>Proposed Regulation</p>	<p>Unit 9–Caribou</p> <p><i>Unit 9A—up to 2 caribou by State registration permit Aug. 1 – Mar. 15. Season may be announced</i></p> <p><i>Unit 9B— up to 2 caribou by State registration permit Aug. 1 – Mar. 31. Season may be announced</i></p> <p><i>Unit 9C, that portion within the Alagnak River drainage— up to 2 caribou by State registration permit Aug. 1 – Mar. 15. Season may be announced</i></p> <p><i>Unit 9C, that portion draining into the Naknek River from the north, and Graveyard Creek and Coffee Creek— up to 2 caribou by State registration permit. Aug. 1 – Mar. 15. Season may be announced</i></p> <p>Unit 17–Caribou</p> <p><i>Unit 17A-all drainages west of Right Hand Point— up to 2 caribou by State registration permit Aug. 1 – Mar. 31. Season may be announced</i></p> <p><i>Units 17B and 17C-that portion of 17C east of the Wood River and Wood River Lakes— up to 2 caribou by State registration permit Aug. 1 – Mar. 31. Season may be announced</i></p> <p>Unit 18–Caribou</p> <p><i>Unit 18-that portion to the east and south of the Kuskokwim River— up to 2 caribou by State registration permit Aug. 1 – Mar. 15. Season may be announced</i></p> <p><i>Unit 18, remainder— up to 2 caribou by State registration permit Aug. 1 – Mar. 15.</i></p>

WP22-41 Executive Summary	
	<p style="text-align: right;"><i>Season may be announced</i></p> <p>Unit 19–Caribou</p> <p><i>Units 19A and 19B (excluding rural Alaska residents of Lime Village)— up to 2 caribou by State registration permit</i></p> <p style="text-align: right;"><i>Aug. 1 – Mar. 15. Season may be announced</i></p>
OSM Preliminary Conclusion	Support
Bristol Bay Subsistence Regional Advisory Council Recommendation	
Yukon-Kuskokwim Delta Subsistence Regional Advisory Council Recommendation	
Western Interior Alaska Subsistence Regional Advisory Council Recommendation	
Seward Peninsula Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

**DRAFT STAFF ANALYSIS
WP22-41**

ISSUES

Wildlife Proposal, WP22-41, submitted by Togiak National Wildlife Refuge (NWR) and Yukon Delta NWR, requests that the Federal in-season manager be delegated authority to open and close seasons, announce harvest limits, and set sex restrictions for caribou in all or portions of Units 9A, 9B, 9C, 17A, 17B, 17C, 18, 19A, and 19B via delegation of authority letter (**Appendix 1**).

DISCUSSION

The proponents state that the summer 2019 and 2020 population estimate for the Mulchatna Caribou Herd (MCH) was 13,500 caribou, which represents a 50% decline from the previous five years and is well below the State's minimum population objective of 30,000 caribou. The proponents note that 2019/20 Federal and State seasons were shortened due to conservation concerns. The 2020/21 season was also shortened, providing for a bulls-only harvest in August and September, while the rest of the season remained closed. The proponents state that this request will help conserve and recover the MCH and provide the flexibility needed to make harvest management decisions in a timely manner. The proponents recognize that this request will reduce harvest opportunity in the short run, but that conserving the MCH now will increase harvest opportunity in the future. The proponents also state that harvest of other resources such as moose may increase in response to this proposal.

Existing Federal Regulation

Unit 9—Caribou

Unit 9A—2 caribou by State registration permit Aug. 1 – Mar. 15.

Unit 9B—2 caribou by State registration permit Aug. 1 – Mar. 31.

Unit 9C, that portion within the Alagnak River drainage—2 caribou by State registration permit Aug. 1 – Mar. 15.

Unit 9C, that portion draining into the Naknek River from the north, and Graveyard Creek and Coffee Creek—2 caribou by State registration permit. Aug. 1 – Mar. 15.

Unit 17—Caribou

Unit 17A—all drainages west of Right Hand Point—2 caribou by State registration permit Aug. 1 – Mar. 31.

Units 17B and 17C—that portion of 17C east of the Wood River and Wood River Lakes—2 caribou by State registration permit Aug. 1 – Mar. 31.

Unit 18—Caribou

Unit 18—that portion to the east and south of the Kuskokwim River—2 caribou by State registration permit Aug. 1 – Mar. 15.

Unit 18, remainder—2 caribou by State registration permit Aug. 1 – Mar. 15.

Unit 19—Caribou

Units 19A and 19B (excluding rural Alaska residents of Lime Village)—2 caribou by State registration permit Aug. 1 – Mar. 15.

Proposed Federal Regulation

Unit 9—Caribou

*Unit 9A—**up to 2** caribou by State registration permit* Aug. 1 – Mar. 15.
Season may be announced

*Unit 9B— **up to 2** caribou by State registration permit* Aug. 1 – Mar. 31.
Season may be announced

*Unit 9C, that portion within the Alagnak River drainage— **up to 2** caribou by State registration permit* Aug. 1 – Mar. 15.
Season may be announced

*Unit 9C, that portion draining into the Naknek River from the north, and Graveyard Creek and Coffee Creek— **up to 2** caribou by State registration permit.* Aug. 1 – Mar. 15.
Season may be announced

Unit 17—Caribou

*Unit 17A—all drainages west of Right Hand Point— **up to 2** caribou by State registration permit* Aug. 1 – Mar. 31.
Season may be announced

*Units 17B and 17C—that portion of 17C east of the Wood River and Wood River Lakes— **up to 2** caribou by State registration permit* Aug. 1 – Mar. 31.
Season may be announced

Unit 18—Caribou

*Unit 18—that portion to the east and south of the Kuskokwim River— **up to 2** caribou by State registration permit* Aug. 1 – Mar. 15.
Season may be announced

*Unit 18, remainder— **up to 2** caribou by State registration permit* Aug. 1 – Mar. 15.

Season may be announced

Unit 19—Caribou

Units 19A and 19B (excluding rural Alaska residents of Lime Village)— up to 2 caribou by State registration permit Aug. 1 – Mar. 15.
Season may be announced

Existing State Regulation

Note: No seasons are open to nonresidents within the range of the MCH.

Unit 9—Caribou

Residents: Units 9A and 9C, that portion within the Alagnak River drainage—one caribou by permit RC503 *Season not announced*

Residents: Unit 9B—two caribou by permit RC503 *Season not announced*

Residents: Unit 9C, that portion north of the north bank of the Naknek River and south of the Alagnak River drainage—two caribou by permit RC503 *Season not announced*

Unit 17—Caribou

Residents: Units 17A remainder, 17B and 17C east of the east banks of the Wood River, Lake Aleknagik, Agulowak River, Lake Nerka and the Agulukpak River—one caribou by permit RC503 *Season not announced*

Unit 18—Caribou

Residents: One caribou by permit RC503 *Season not announced*

Unit 19—Caribou

Residents: Units 19A and 19B—one caribou by permit RC503 *Season not announced*

Extent of Federal Public Lands

Collectively, Units 9A, 9B, 9C, 17A, 17B, 17C, 18, 19A, and 19B are comprised of 48% Federal public lands and consist of 32% U.S. Fish and Wildlife Service (USFWS) managed lands, 11% National Park Service (NPS) managed lands, and 5% Bureau of Land Management (BLM) managed lands (**Figure 1**). Land status by Unit is as follows.

Unit 9A is comprised of 40% Federal public lands and consists of 39% NPS managed lands and less than 1% each USFWS and BLM managed lands.

Unit 9B is comprised of 34% Federal public lands and consists of 26% NPS managed lands and 8% BLM managed lands

Unit 9C is comprised of 86% Federal public lands and consists of 78% NPS managed lands, 4% BLM managed lands and 4% USFWS managed lands.

Unit 17A is comprised of 87% Federal public lands and consists of 87% USFWS managed lands and less than 1% BLM managed lands.

Unit 17B is comprised of 8% Federal public lands and consists of 6% NPS managed lands, 1% BLM managed lands, and 1% USFWS managed lands.

Unit 17C is comprised of 25% Federal public lands and consists of 15% USFWS managed lands and 10% BLM managed lands.

Unit 18 is comprised of 67% Federal public lands and consists of 64% USFWS managed lands and 3% BLM managed lands.

Unit 19A is comprised of 23% Federal public lands and consists of 21% BLM managed lands and 2% USFWS managed lands.

Unit 19B is comprised of 13% Federal public lands and consists of 11% NPS managed lands, 2% BLM managed lands and less than 1% USFWS managed lands.

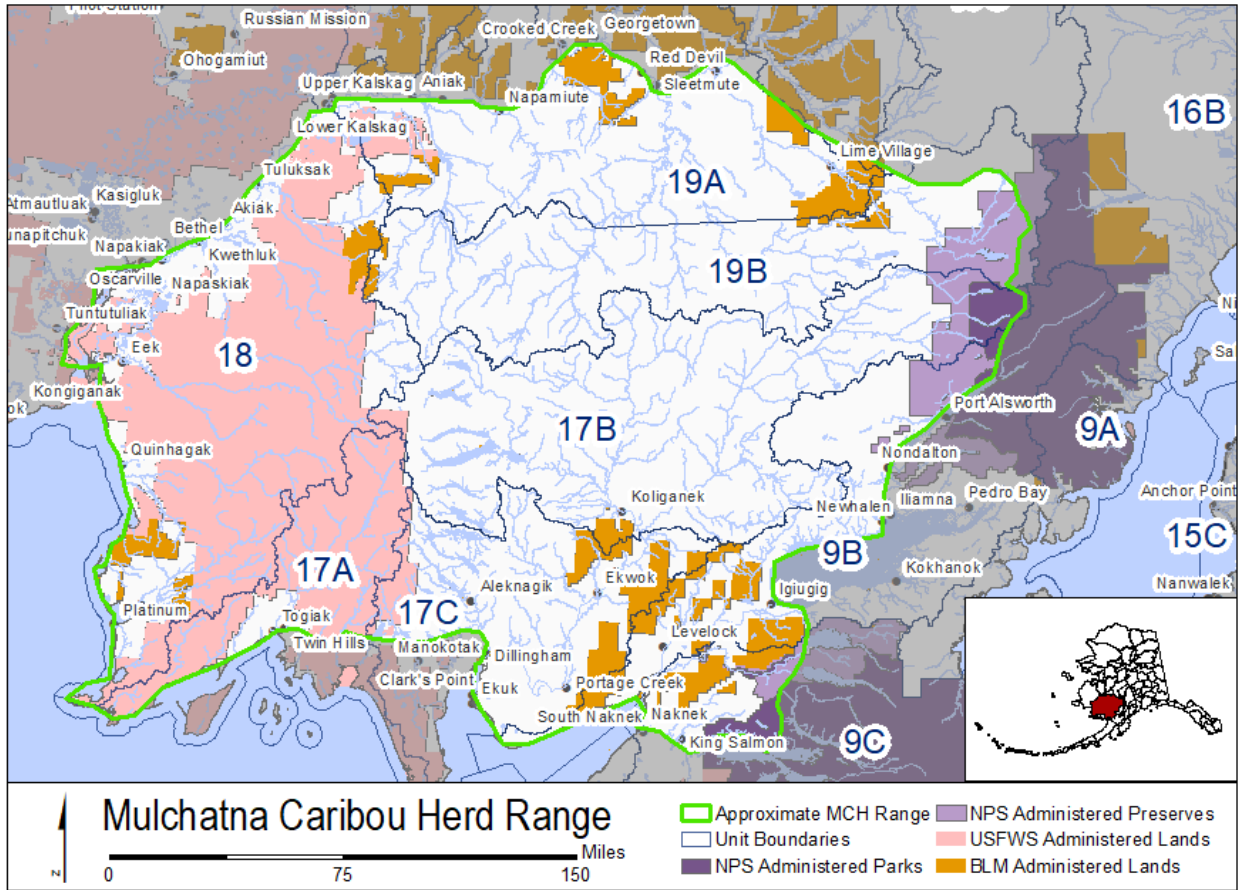


Figure 1. The Mulchatna Caribou Herd range covers ~60,000 square miles, primarily within Units 9B, 9C, 17A, 17B, 17C, 18, 19A and 19B.

Customary and Traditional Use Determinations

Residents of Units 9B, 9C and 17 have a customary and traditional use determination for caribou in Units 9A and Unit 9B.

Residents of Units 9B, 9C, 17, and Egegik have a customary and traditional use determination for caribou in Unit 9C.

Residents of Units 9B, 17, Eek, Goodnews Bay, Lime Village, Napakiak, Platinum, Quinhagak, Stony River, and Tuntutuliak have a customary and traditional use determination for caribou in Unit 17A, that portion west of the Izavieknik River, Upper Togiak Lake, Togiak Lake, and the main course of the Togiak River.

Residents of Units 9B, 17, Akiak, Akiachak, Lime Village, Stony River, and Tuluksak have a customary and traditional use determination for caribou in Unit 17A, that portion north of Togiak Lake that includes Izavieknik River drainages.

Residents of Units 9B, 17, Kwethluk, Lime Village, and Stony River have a customary and traditional use determination for caribou in Units 17A and 17B, those portions north and west of a line beginning from

the Unit 18 boundary at the northwestern end of Nenevok Lake, to the southern point of upper Togiak Lake, and northeast to the northern point of Nuyakuk Lake, northeast to the point where the Unit 17 boundary intersects the Shotgun Hills.

Residents of Units 9B, 17, Akiachak, Akiak, Bethel, Eek, Goodnews Bay, Lime Village, Napakiak, Platinum, Quinhagak, Stony River, Tuluksak, and Tuntutuliak have a customary and traditional use determination for caribou in Unit 17B, that portion of Togiak National Wildlife Refuge within Unit 17B.

Residents of Units 9B, 9C, 9E, 17, Lime Village, and Stony River have a customary and traditional use determination for caribou in Unit 17 remainder.

Residents of Unit 18, Lower Kalskag, Manokotak, Stebbins, St. Michael, Togiak, Twin Hills, and Upper Kalskag have a customary and traditional use determination for caribou in Unit 18.

Residents of Unit 19A and 19B, Unit 18 within the Kuskokwim River drainage upstream from, and including, the Johnson River, and residents of St. Mary's, Marshall, Pilot Station, and Russian Mission have a customary and traditional use determination for caribou in Units 19A and 19B.

Regulatory History

As a result of the dramatic population increase the MCH experienced during the 1990s, harvest regulations were liberalized throughout the range of the herd. By 1997, both State and Federal seasons in portions of Units 9, 17, and 19 extended from fall through spring, with liberal harvest limits and few restrictions. The subsequent population decline, beginning in 2004, resulted in the implementation of more restrictive regulations. Following is a summary of State and Federal regulatory changes since 2006.

At its spring 2006 meeting, the Alaska Board of Game (BOG) implemented more restrictive regulations for both resident and non-resident hunters. For resident hunters, they established an Aug. 1 – Mar. 15 season throughout the range of the herd. Previously, resident seasons ended on March 31 or April 15. The BOG also reduced the harvest limit throughout much of the range to three caribou, with only one caribou allowed Aug. 1 – Sep. 30. Nonresident seasons, which previously extended fall through spring, were reduced to Aug. 1 – Sep. 30.

The BOG further restricted harvest from the MCH in 2007. At that time, they reduced the resident harvest limit to two caribou with the restriction that no more than one bull could be taken and not more than one caribou could be taken Aug. 1 – Jan. 31. In addition, same day airborne harvest was eliminated for Units 9B, 17B, and 17C. The non-resident seasons were reduced to Sep. 1 – 15 at this time.

The Federal Subsistence Board (Board) considered Proposal WP07-23 in 2007, which requested Federal regulations for caribou in Units 9B and 17 be modified to reflect the recent changes in State regulation. Following the recommendation of several Subsistence Regional Advisory Councils (Councils), the Board adopted this proposal with modification to also include Units 18, 19A and 19B. However, this proposal was submitted prior to the BOG's 2007 regulatory changes and the Board's modification did not

accommodate the more recent changes in State regulation. Consequently, Federal regulations were aligned with the State's 2006 regulations rather than the 2007 regulations.

Following continued decline of the MCH, the BOG adopted Proposal 57 in 2009, which eliminated the nonresident caribou season throughout the range of the MCH.

The Board considered three proposals in 2010, all of which proposed further restrictions to harvest of the MCH. Proposal WP10-51 requested that Federal caribou seasons in Units 9A, 9B, 17B, a portion of 17C, 18, 19A, and 19B be changed to Aug. 1–Mar. 31. The Board adopted this proposal with modification to end the seasons on March 15, as recommended by several Councils. Proposal WP10-53 requested that the harvest limit for caribou be set at two caribou throughout the range of the MCH, with the restriction that no more than one bull may be taken and no more than one caribou may be taken Aug. 1 – Jan. 31. The Board adopted this proposal. Proposal WP10-60 requested that the harvest limit for caribou in Unit 18 be reduced from three caribou to two caribou. This proposal was adopted by the Board with modification to include the restriction that no more than one bull may be taken and no more than one caribou may be taken Aug. 1 – Jan. 31, consistent with action taken on WP10-53. The result of the Board's actions in 2010 was that State and Federal regulations for caribou within the range of the MCH were largely aligned.

The BOG initiated intensive management for predator reduction within the range of the MCH in 2011. At their spring 2011 meeting, they established a predation management area in Units 9B, 17B, and 17C. At their spring 2012 meeting, they added Units 19A and 19C to the predation management area.

In 2012, the Board considered Proposal WP12-42, which requested that, in Unit 18, the harvest limit be reduced from two caribou to one caribou and the season be reduced from Aug. 1 – Mar. 15 to Aug. 1 – Sep. 3 and Dec. 20 – last day of February. The Board adopted the proposal with modification, which resulted in the establishment of two separate hunt areas in Unit 18. For the portion of Unit 18 east and south of the Kuskokwim River, the season was reduced as proposed, while the harvest limit remained at two caribou, with the restriction that not more than one caribou may be taken Aug. 1 – Sep. 30 or Dec. 20 – Jan. 31. For the remainder of Unit 18, there were no changes to regulations.

Shortly after the Board's decision on WP12-42, it received two Special Action Requests to make similar changes for the remainder of the 2011/12 regulatory year. WSA11-10 requested that the caribou season in Unit 18 be shortened by 2 weeks, to end on February 29, rather than March 15. WSA11-11 requested that Federal public lands in the portion of Unit 18 south and east of the Kuskokwim River be closed to the harvest of caribou by all users beginning March 1. The Board rejected both requests on the grounds that it would be detrimental to subsistence users and that there was insufficient evidence that the situation required immediate action.

In February 2013, the BOG adopted Proposal 45A, which required use of a registration permit (RC503) in Units 9A, 9B, portions of 9C, 17, 18, 19A, and 19B. Previously, MCH harvest was allowed with just a harvest ticket. These changes were aimed at improving harvest management and assessment of the MCH's response to the ongoing intensive management program.

The Board considered two Special Action Requests in 2013. The first, Temporary Special Action WSA13-02, requested alignment of Federal permit requirements and season dates with the recently modified State regulations. As a result of the Board's approval of this request, Federally qualified subsistence users hunting under Federal regulations were required to obtain a State registration permit in Units 9A, 9B, 9C, 17A, 17B, 17C, 18, 19A, and 19B. The Board's action also shortened the to-be-announced season in Units 17A remainder and 17C remainder from Aug. 1–Mar. 31 to Aug. 1–Mar. 15. These changes were in effect for the remainder of the 2013/14 regulatory year. The second request, Temporary Special Action WSA13-03, requested the closure of Federal public lands in Units 9A, 9B, 9C, 17A, 17B, 17C, 18, 19A, and 19B to the harvest of caribou, except by Federally qualified subsistence users. The Board rejected WSA13-03 on the grounds that the MCH population was within State management objectives, and composition metrics were showing improvement.

In 2014, the Board adopted Proposal WP14-22 with modification, which resulted in the requirement of a State registration permit for Federally qualified subsistence users hunting under Federal regulations in Units 9A, 9B, 9C, 17A, 17B, 17C, 18, 19A, and 19B. It also resulted in a shortening of the to-be-announced season in Units 17A remainder and 17C remainder, from Aug. 1 – Mar. 31 to Aug. 1 – Mar. 15. Finally, it delegated authority to the Togiak National Wildlife Refuge Manager to take specific in-season management actions in portions of Units 17A and 17C. This included the authority to open and close seasons, establish harvest limits and restrictions, and identify hunt areas. These changes were meant to align Federal and State regulations across the range of the MCH, while providing improved harvest reporting.

In February 2015, the BOG adopted Proposal 47 with an amendment to accommodate the request made in Proposal 48. As a result of this action, caribou seasons in Units 9B and 17 were changed from Aug. 1 – Mar. 15 to Aug. 1 – Mar. 31. This change was made to accommodate hunters who reported that travel conditions often prohibited caribou hunting after the last day of March.

In March 2016, BOG adopted Proposal 134, which resulted in liberalization of the harvest restrictions for caribou harvested within the range of the MCH. Specifically, the harvest limit remained at two caribou, but the restrictions that no more than one bull may be taken and no more than one caribou may be taken from Aug. 1 – Jan. 31 were eliminated. By 2016, the bull:cow ratio had reached the management threshold and conservation of bulls had become less critical compared to 2007, when the restrictions were implemented. Fewer restrictions also resulted in a less complicated regulatory structure and were not expected to result in unsustainable levels of harvest.

The same spring, the Board considered Proposal WP16-29/30, which requested that caribou seasons in Unit 9B and portions of Unit 17 be extended from Aug. 1 – Mar. 15 to Aug. 1 – Mar. 31. This proposal was intended to provide additional subsistence opportunity and to align Federal and State regulations for caribou hunting within the range of the MCH. The Board adopted this proposal with modification to move in-season management language from unit-specific regulations to a delegation of authority letter. However, this proposal was submitted prior to the BOG's 2016 regulatory changes and the Board's modification did not accommodate the recent changes to State regulation. Consequently, Federal regulations were aligned with the State's 2016/17 regulations rather than the 2017/18 regulations.

In February 2018, the BOG adopted Proposal 127. As a result, the portion of Unit 9C north of the Naknek River and south of the Alagnak River drainage became part of the MCH RC503 permit area, rather than part of the Northern Alaska Peninsula Caribou Herd (NAPCH) TC505 permit area. The BOG's action also established an Aug. 1 – Mar. 31 resident season in the hunt area north of the Naknek River. This action brought State harvest regulations into line with the current distribution of the MCH and NAPCH caribou herds.

In April 2018, the Board considered Proposal WP18-21, which responded to the 2016 and 2018 changes made in State regulation. Specifically, WP18-21 requested that the harvest limit for the MCH be changed to two caribou with no additional restrictions in portions of Units 9, 17 and 19, and that the caribou season in Unit 9C north of the Naknek River be changed from a may-be-announced season to an Aug. 1 – Mar. 15 season with a harvest limit of two caribou. The Board adopted WP18-21 with modification to create a new hunt area, removing the portion of Unit 9C that drains into the Naknek River from the north and Graveyard Creek and Coffee Creek from Unit 9C remainder. This action brought Federal harvest regulations into line with the current distribution of the MCH and NAPCH caribou herds and also aligned the harvest limit throughout the range of the MCH. However, the Board's action did not address the Federal public lands closure within the new hunt area. Originally implemented for the conservation of the NAPCH, this closure is now the only Federal public lands closure within the range of the MCH.

The Board also considered Proposal WP18-31 in April 2018, which requested that the MCH season in Unit 18 be shortened from Aug. 1 – Mar. 15 to Aug. 1 – Feb. 28, due to an observed scarcity of caribou. The Board rejected this proposal on the grounds that it would have a negligible effect on harvest or on the conservation status of the population, given that the State season would continue to be open until March 15. The Board noted that the regulatory complexity this change would introduce was unnecessary in the absence of a conservation benefit.

In August 2019, the Alaska Department of Fish and Game (ADF&G) issued emergency order 04-16-19, which decreased the harvest limit of the RC503 caribou registration permit hunt from two caribou to one caribou for the 2019/20 regulatory year. The RC503 permit targets the MCH in Units 9A, 9B, 9C, 17A, 17B, 17C, 18, 19A, and 19B (range of the MCH). ADF&G issued this emergency order to conserve the MCH due to recent survey data indicating the MCH population is 13,500 caribou, which is well below the minimum State objective of 30,000 caribou.

In November 2019, the Board approved Special Action Request WSA19-07 with modification to decrease the harvest limit for Mulchatna caribou from two to one caribou across the range of the MCH for the 2019/20 regulatory year. The modification included closing Units 18, 19A and 19B to caribou hunting except by Federally qualified subsistence users, with a harvest limit of one bull caribou and delegating authority to the Togiak NWR Manager to open and close seasons throughout the range of the herd and to set sex restrictions in Units 9A, 9B, 9C, 17A, 17B and 17C for the 2019/20 regulatory year. The Board approved the request due to serious conservation concerns for the MCH and support from the affected Regional Advisory Councils and local users.

The Togiak NWR Manager exercised his delegated authority to close caribou hunting on Federal public lands across the range of the MCH on December 31, 2019 for the remainder of the season. As of December 16, 2019, 79 caribou had been reported harvested, with an additional seven caribou known to be harvested but not reported. Agency staff determined no harvestable surplus existed that would allow for herd growth and closed the season to promote herd recovery.

In January 2020, ADF&G issued emergency order 04-02-20, which closed the RC503 caribou registration permit hunt on January 31, 2020. ADF&G issued this emergency order because of MCH population declines. Both ADF&G and USFWS staff conducted extensive outreach efforts to notify communities of the caribou hunting closure (BBRAC 2020, WIRAC 2020).

In April 2020, the Board considered Wildlife Closure Review WCR20-04/06, which reviewed caribou hunting closures in Units 9C and 9E. The Board voted to modify the closure, rescinding the closure in the portion of Unit 9C that drains into the Naknek River from the north, and Graveyard Creek and Coffee Creek (Unit 9C Naknek), while maintaining the closures in the other hunt areas in concurrence with the Bristol Bay Council's recommendation. The closure in Unit 9C Naknek to caribou hunting except by residents of Unit 9C and Egegik had been the only closure in regulation within the range of the MCH. The closure was a vestige of the Board's action on Proposal WP18-21, which shifted the regulatory emphasis within Unit 9C Naknek from the NAPCH to the MCH, to reflect current distribution patterns of these two herds. However, during its deliberation of Proposal WP18-21, the Board did not address the Federal public lands closure, which had been originally implemented for the conservation of the NAPCH.

In July 2020, the Board approved Special Action Request WSA20-04 with modification to delegate authority to the Togiak NWR manager to open/close seasons, announce harvest limits, and set sex restrictions across the range of the MCH for the 2020-2022 regulatory cycle (similar to this proposal). The Board approved the request because of conservation concerns for the MCH due to substantial population declines, because delegating authority to an in-season manager provided the management flexibility needed to respond quickly to changing conditions, and because of support from the affected Regional Advisory Councils and local users.

In July 2020, ADF&G issued emergency order 04-04-20, announcing a bulls-only hunt across the range of the MCH (RC503) in Units 9A, 9B, 9C, 17A, 17B, 17C, 18, 19A, and 19B from Aug. 1-Sept. 20, 2020. The rest of the 2020/21 season remained closed. Later that month, the Togiak NWR Manager exercised his delegated authority to announce an identical Federal hunt for 2020/21. The Togiak NWR manager and ADF&G determined that a limited bulls-only hunt would provide some harvest opportunity without compromising herd recovery, but that additional harvest, especially of cows, needed to be avoided to allow for herd growth.

Current Events

The BOG received several proposals concerning the MCH during the Central and Southwest Region call for proposals in 2020. They will consider proposed changes in Units 9 and 17 in January of 2022 (re-scheduled meeting from January 2021 due to the COVID-19 pandemic). Proposed changes for Unit 18

and 19 will be addressed at Western Arctic/Western Region and Interior and Eastern Arctic Region meetings, respectively.

Proposal 19, submitted by Togiak NWR requests establishing new population and harvest objectives for the MCH, following completion of a habitat assessment to determine carrying capacity. Proposal 20, submitted by ADF&G, requests establishing a Tier II subsistence hunting season and harvest limit for the MCH due to low population estimates and harvestable surpluses. Proposal 20 would also close the season during rut to mitigate disruptions to breeding and standardize the season across the range of the MCH to reduce hunter confusion and encourage reporting. Proposal 21, submitted by ADF&G, requests establishing a second predation control area for MCH on Federal lands in Units 17 and 18 to reduce wolf predation and promote herd recovery.

Biological Background

The MCH has experienced dramatic changes in population size and distribution in the past 40 years. In the early 1980s, the population was estimated to include approximately 20,000 caribou. Its winter range included the north and west side of Iliamna Lake north of the Kvichak River. By the mid-1990s, the herd had grown to its peak size of approximately 200,000 caribou and absorbed the smaller Kilbuck caribou herd. The MCH increasingly begun wintering in southern Unit 18 and southwestern Unit 19B. Population growth during this time was attributed to mild winters, movement into previously unexploited range, and relatively low predation and harvest rates.

Currently, the MCH range covers ~60,000 square miles, primarily within Units 9B, 9C, 17A, 17B, 17C, 18, 19A and 19B (**Figure 1**). The herd does not move seasonally as a single distinct group. Rather, caribou move from calving areas east of the Tikchik Mountains to either the eastern or western portion of their range for the rut and wintering. In the 2000s, movements of radio-collared caribou indicated that individual caribou had little fidelity to specific calving or wintering areas. Since 2008, however, radio-collared cows that winter in the eastern portion of their range calve in the Tundra Lake or Bonanza Hills areas (western Units 19A, 19B, 17B) while those that winter in the western portion of their range calve in the Kemuk Mountain/Koliganek area (southern Unit 17B, northern Unit 17C) (Barten 2015). ADF&G is hoping to radio-collar additional caribou and conduct more surveys to determine if the MCH is still one herd or if it has separated into two distinct herds (BBRAC 2020). Additionally, the potential for caribou in Katmai National Preserve to be a non-migratory population that is not part of the MCH was voiced during Tribal consultation for WSA19-07 and the Bristol Bay Council's winter 2020 meeting. The NPS expressed their intention to study these caribou in the near future (BBRAC 2020).

Photocensuses conducted during summer post-calving aggregations are used to estimate abundance (Barten 2015). These estimates show that in 2013, the MCH was estimated to be 18,016 caribou, the lowest estimate in over 30 years, and well below the State's population objective of 30,000 – 80,000 caribou (**Table 1**). Estimates over the next three years indicated that the population had grown, nearing the lower bound of this population objective from 2014-2016. However, the most recent estimates, obtained in July 2019 and 2020, shows that the population is less than half of the State's minimum population objective, at 13,448 caribou (ADF&G 2019c, 2020). The western segment of the MCH has declined appreciably since 2012, while the eastern segment's population increased between 2012 and 2015 and then declined back to 2012 levels in 2019 (**Figure 2**; ADF&G 2019e, Rinaldi 2020, pers).

comm.). Therefore, the population increases from 2014-2016 were due to increases in the eastern segment's population, while the 2019 decline are due to declines in both segments.

ADF&G and Togiak NWR plan to reevaluate the population objective range to determine if any adjustments are warranted (BBRAC 2020). In March 2020, ADF&G conducted two flights over the western segment of the herd and one flight over the eastern segment to monitor its status. ADF&G reported observing <2,500 caribou in the western segment, which was less than expected (YKDRAC 2020).

Estimates of composition are made during October aerial surveys. Given that the eastern and western population segments of the MCH have different seasonal ranges and are therefore subject to differing nutrition, predation, and other factors, composition ratios are summarized both collectively and individually by population segment. This allows for comparison between the eastern and western segments. As a whole, the MCH experienced a steady increase in bull:cow ratios between 2010 and 2016 (**Table 1**). In 2016, the ratio was 39 bulls:100 cows, which is the highest estimate since the late 1990s. The most recent estimate, in 2018, showed the bull:cow ratio was 32 bulls:100 cows, which is below the State's minimum bull:cow objective of 35 bulls:100 cows. Bull:cow ratios for the western segment have typically been higher than those for the eastern segment, though the difference has diminished in recent years (**Figure 3**). In 2017, this relationship was reversed. At that time, the eastern population segment had 33 bulls:100 cows while the western population segment had 31 bulls:100 cows (Barten 2017).

Calf:cow ratios have been variable for the MCH, ranging from 16 calves:100 cows in 2007 to 30 calves:100 cows in 2011 and 2014 (**Table 1**). In 2018, the most recent estimate, there were 34 calves:100 cows, which is above the State's minimum objective of 30 calves:100 cows and an improvement from 2017 (ADF&G 2019d). The calf:cow ratio has varied significantly between population segments. Between 2007 and 2013, the western population segment had consistently higher calf:cow ratios than the eastern segment. However, that relationship has been reversed since 2014 (**Figure 4**). In 2017, the eastern segment had 28 calves:100 cows while the western segment had 18 calves:100 cows (Barten 2017). Current calf:cow ratios are within the range of variability typical of herds occupying interior and southwest Alaska.

Habitat was not thought to be limiting the MCH based on nutritional indicators, including high pregnancy rates and calf weights (Barten 2015, ADF&G 2019d). However, now ADF&G and Togiak NWR are considering decreased range quality as a potential cause for the decline and are working together to design and implement a habitat assessment study (BBRAC 2020, WIRAC 2020, Moos 2021). Predation may be contributing to the population decline. ADF&G initiated a wolf predation control program near MCH calving grounds in southwestern Unit 17 in 2012 and expanded the control area in 2017 to include almost all of Unit 17B and portions of Units 9B and 19B (ADF&G 2019d, YKDRAC 2020). However, while wolf densities on the calving grounds are low, brown bear predation of calves on the calving grounds may be contributing to the population decline (WIRAC 2020). Heavy harvest pressure, icing events, deep snows and changing movement patterns may also have contributed to the population decline (YKDRAC 2020). In January 2021, ADF&G announced increased prevalence of *Brucella*, the bacteria responsible for brucellosis disease, in Mulchatna caribou (ADF&G 2021a).

Table 1. Mulchatna Caribou Herd composition counts and population estimates, 1975 – 2020 (Barten 2017, ADF&G 2019c, 2019d, 2020, Reiley 2021, pers. Comm. and Rinaldi 2020, pers. Comm.).

Year	Bulls: 100 cows	Calves: 100 cows	% of Total bulls			Composition sample size	Population Estimate
			Small bulls	Medium bulls	Large bulls		
1975	55	35	-	-	-	1,846	14,000
1978	50	65	-	-	-	758	7,500
1980	31	57	-	-	-	2,250	-
1981	53	45	-	-	-	1,235	20,600
1986	56	37	-	-	-	2,172	-
1987	68	60	-	-	-	1,858	52,500
1988	66	54	-	-	-	536	-
1993	42	44	-	-	-	5,907	150,000 ^a
1996	42	34	49	29	22	1,727	200,000 ^a
1998	41	34	28	43	29	3,086	-
1999	30	14	60	26	14	4,731	175,000 ^b
2000	38	24	47	33	20	3,894	-
2001	25	20	32	50	18	5,728	-
2002	26	28	57	30	13	5,734	147,000 ^b
2003	17	26	36	45	19	7,821	-
2004	21	20	64	29	7	4,608	85,000 ^b
2005	14	18	55	33	12	5,211	-
2006	15	26	57	34	9	2,971	45,000 ^b
2007	23	16	53	36	11	3,943	-
2008	19	23	47	36	17	3,728	30,000 ^b
2009	19	31	40	44	16	4,595	-
2010	17	20	30	44	26	4,592	-
2011	22	19	32	41	27	5,282	-
2012	23	30	38	38	24	4,853	22,930 ^c
2013	27	19	39	36	25	3,222	18,016 ^c
2014	35	30	44	31	25	4,793	27,225 ^c
2015	35	29	35	43	22	5,414	28,662 ^c
2016	39	22	43	29	28	5,195	28,775 ^c
2017	32	23	44	28	28	5,160	-
2018	32	34	-	-	-	-	-
2019	42	25	62	20	18	3,496	13,448 ^c
2020	34	36	59	20	20	5,357	13,500

^aEstimate derived from photo-counts, corrected estimates, subjective estimate of number of caribou in areas not surveyed, and interpolation between years when aerial photo surveys were not conducted.

^bEstimate of minimum population size based on July photo census.

^cEstimate based on Rivest et al. (1998) caribou abundance estimator.

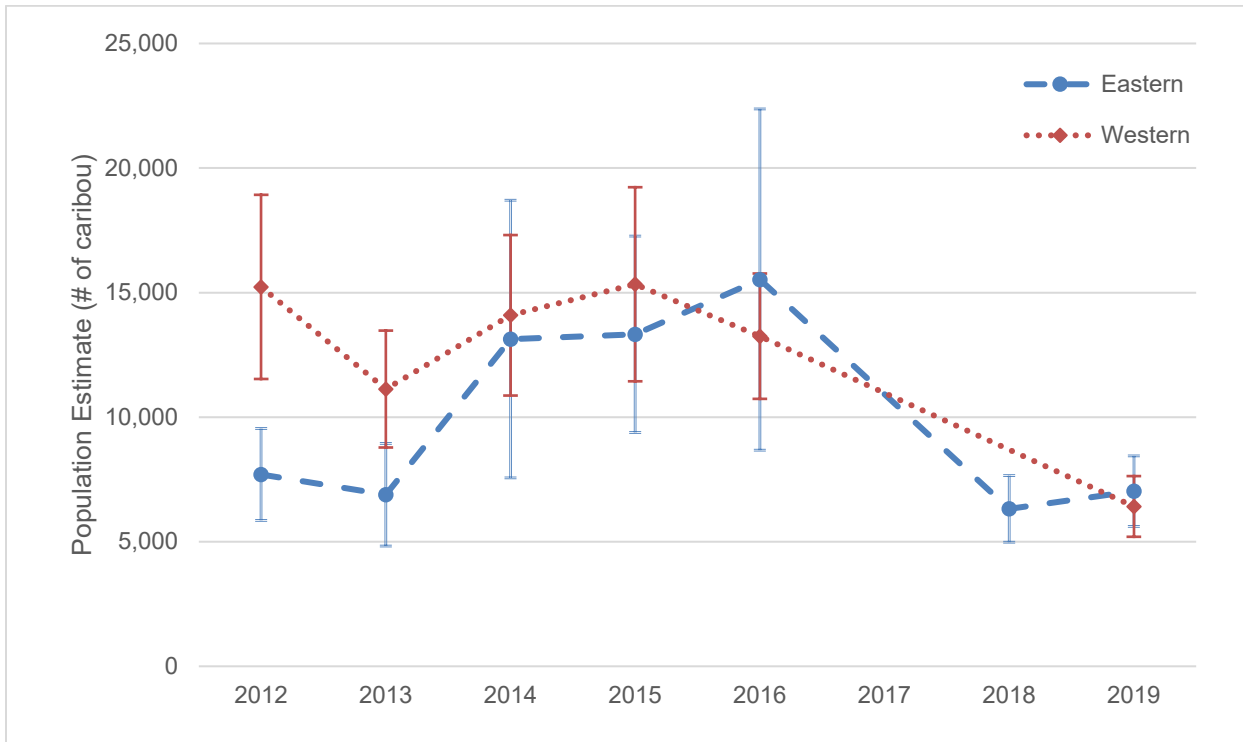


Figure 2. Population estimates of the eastern and western segments of the Mulchatna caribou herd with 95% confidence intervals (Rinaldi 2020, pers. comm.).

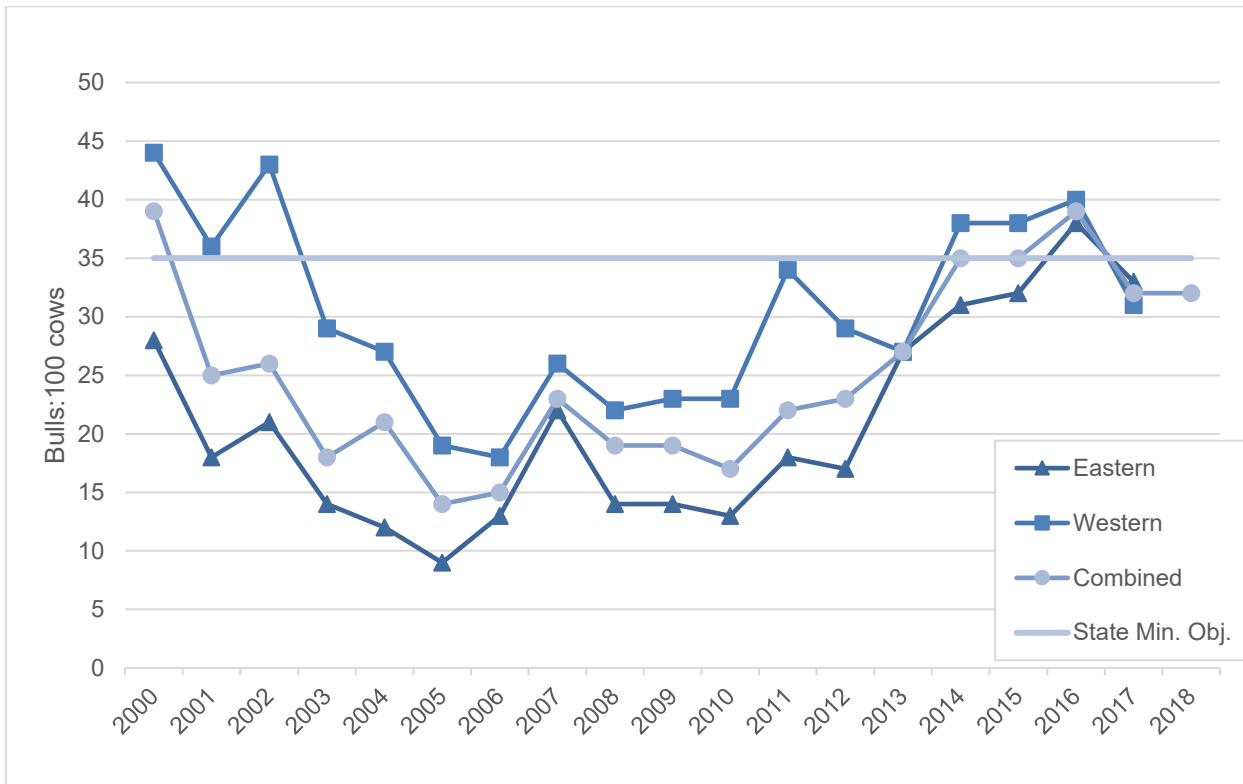


Figure 3. Mulchatna Caribou Herd fall bull:cow ratios, 2000 – 2018. The solid line represents the State’s minimum management objective of 35 bulls:100 cows (Barten 2017, ADF&G 2019d).

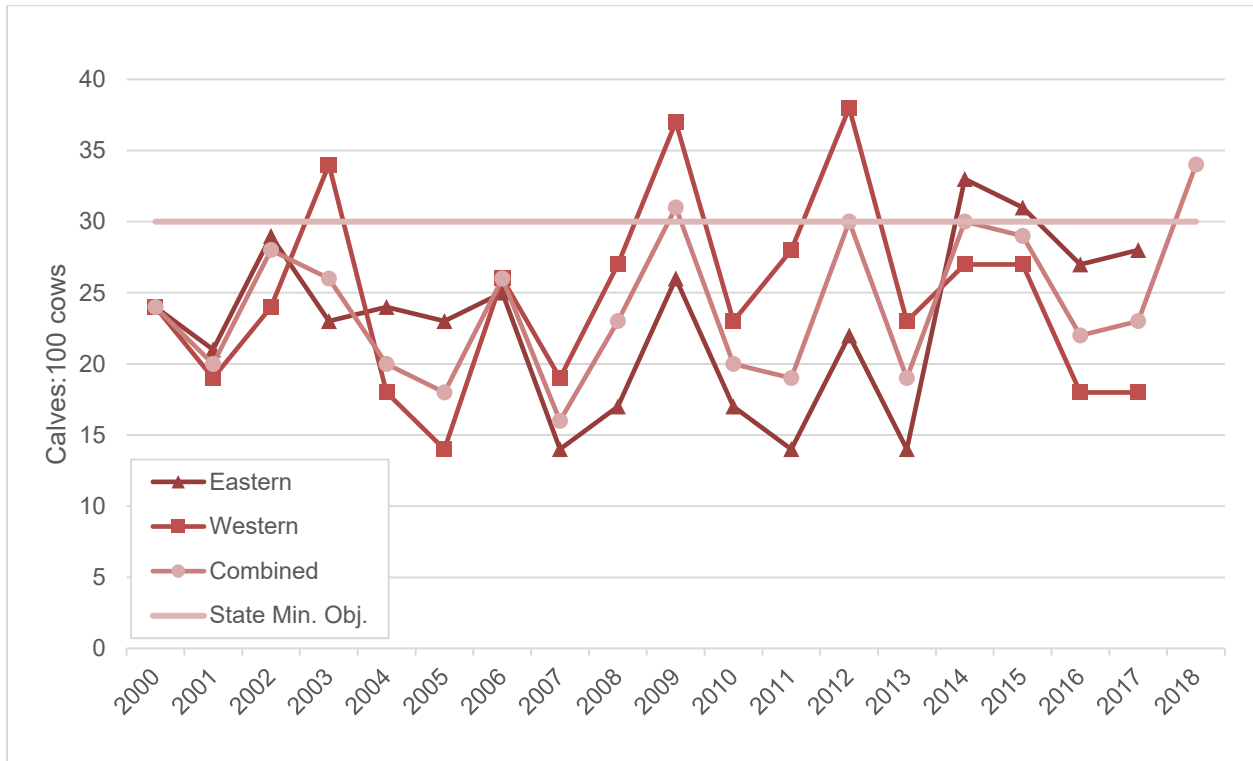


Figure 4. Mulchatna Caribou Herd fall calf:cow ratios, 2000 – 2018. The solid line represents the State’s minimum management objective of 30 calves:100 cows (Barten 2017, ADF&G 2019d).

Cultural Knowledge and Traditional Practices

At least five Alaska Native groups, Alutiiq, Central-Yup’ik, and the Athapaskan subgroups known as the Deg Xinag, Kolchan/Upper Kuskokwim, and Dena’ina, have historically inhabited and hunted in sections of Units 9, 17, and 19. Relationships between these groups varied from intermarriage, trading, and feuding (Snow 1981). All of these groups have a history of hunting caribou in this area and some participated in herding upon the introduction of reindeer in the 1890s (Willis 2006).

Historically, people in Western and Southwestern Alaska hunted caribou in the spring and fall with the occasional summer harvest. Historical accounts suggest that caribou was an important subsistence resource for food and the creation of winter clothing. Caribou were traditionally caught through the use of snares, surrounds, guide fences, bow and arrow, stalking, spears, and the Dena’ina utilized dogs (Clark 1981; Hosley 1981; Snow 1981; Townsend 1981; VanStone 1981). Vanstone mentioned that Central-Yup’ik groups used caribou hides in the creation of winter clothing and Hosley (1981) noted that the Kolchan made a paste out of caribou brains to tan hides for clothing purposes.

Russian fur traders travelled up the Alaskan coast and came into contact with the Alutiiq Koniag after 1760. It was not long after this initial contact that trading posts were established in the area that currently consists of Unit 9 (Clark 1981). As the Russians moved further north along the Alaska coast the fur trade expanded into what is now Units 17 and 19 (Snow 1981; Vanstone 1981). The arrival of the

Russians was followed by the creation of missions, boarding schools, canneries, and the arrival of both Russian and European trappers and prospectors (Hosley 1981; Snow 1981; Townsend 1981).

The most recent comprehensive subsistence surveys conducted by ADF&G have been used to provide examples for each unit in this proposal. ADF&G conducted a survey on the community of Naknek in Unit 9 during 2007, Manokotak in Unit 17 during 2008, and Nikolai in Unit 19 during 2011 (Holen et al. 2011; Holen et al. 2012; Ikuta et al. 2014). Within these communities, large mammal harvest is high and ranged between 12.1% on the low end and 52% on the high end (Holen et al. 2011; Ikuta et al. 2014). The per capita caribou harvest from Naknek, Manokotak, and Nikolai ranged from a low of 2 lbs/person in Nikolai to 21 lbs/person in Naknek (Holen et al. 2011; Ikuta et al. 2014). Even in those communities that reported no harvest for their study year, caribou was widely used, shared, and received. For example, in Manokotak for the 2008 study year, about 50% of the community households used caribou, 44% reported receiving caribou, and about 7% of the households reported sharing caribou with others (Holen et al. 2012).

Harvest History

Reported harvest of the MCH has decreased significantly since the early 2000s, when the herd was very large (**Figure 5**). Total reported harvest declined from 3,949 caribou in 2000 to 238 caribou in 2018. Harvest among all user groups declined during this period, but the decline was especially pronounced among nonlocal residents and nonresidents. Reduction of the State harvest limit in 2006 and elimination of the nonresident season in 2009 were influential in this decline (ADF&G 2017, 2019a).

Currently, harvest is dominated by local users, defined here as those with a customary and traditional use determination for caribou anywhere within the MCH range. Since 2009, the year the nonresident season was eliminated, 84% of reported harvest, or 263 caribou annually, can be attributed to local residents. The remainder, 49 caribou annually, were taken by nonlocal residents of Alaska (ADF&G 2017, 2019a). However, reported harvest may underestimate actual harvest. Though the magnitude of unreported harvest is unknown (Barten 2015, ADF&G 2019d), household survey data obtained by the ADF&G Subsistence Division provides some insights (**Table 2**). These surveys represent only a sampling of communities and years, so they cannot be used to quantify total annual harvest. In addition, they estimate an annual range of harvest for each community and are intended to demonstrate community harvest patterns and resource use, rather than precise numbers. However, they indicate that communities within the MCH range harvest more caribou than harvest reports suggest (**Table 2, Figure 5**). ADF&G suspects actual harvest is substantially higher than reported harvest in some years (ADF&G 2019d).

Acknowledging that reported harvest is not an accurate assessment of total harvest, it may provide insights into temporal and geographic harvest patterns. Among local users for the 2009 – 2018 time period, 81% of reported harvest occurred between December and March. March was the busiest month for harvest, accounting for 40% of the reported harvest by local users since 2009. These patterns are broadly similar to longer term averages (ADF&G 2017, 2019a).

Harvest is not evenly distributed across the range of the MCH. More caribou are harvested from the western segment of the population than from the eastern (BBRAC 2020). Since 2009, among local users,

54% of reported harvest has occurred in Unit 18, and 17% has occurred in Unit 17C. Less than 10% of reported harvest by local users is attributable to any other single unit. Converse trends exist for non-local users. Harvest in Unit 17B accounts for 53% (26 caribou annually), while Unit 18 accounts for 20% (10 caribou annually) of the reported harvest among this user group since 2009. Fewer than five caribou, on average, are reported harvested each year by nonlocal users in any other single unit.

During the 2019/20 season, 2,112 RC503 permits were issued, 1,776 permits were returned, and 446 permit holders hunted. From the returned permits, 127 caribou (84 bulls, 42 cows, 1 unknown) were reported harvested (ADF&G 2021b). Information and observations from law enforcement personnel indicated that actual harvest well exceeded reported harvest (Moos 2020, pers. comm.).

During the 2020/21 season, 28 were harvested. There were 20 harvested by local residents and 8 by non-local residents (Reiley 2021, pers. Comm.).

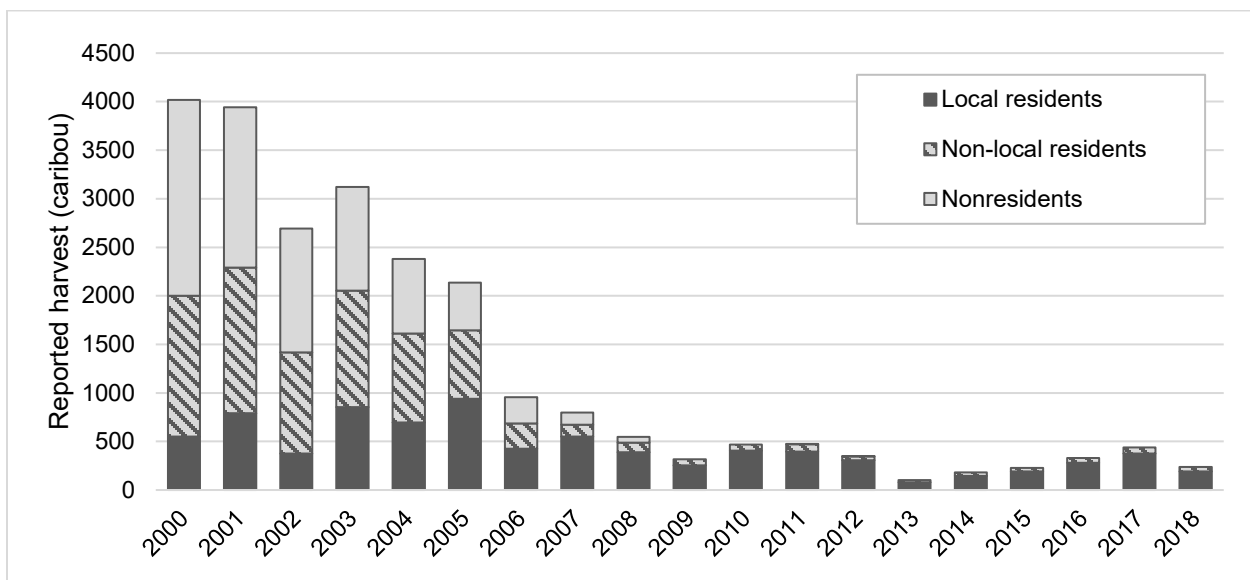


Figure 5. Reported harvest from the Mulchatna Caribou Herd by all users, 2000 – 2018. Nonresident seasons were eliminated in 2009 (ADF&G 2017, 2019a).

Table 2. Use of caribou by communities across the range of the Mulchatna Caribou Herd, 2000 – 2013, based on household surveys (ADF&G 2019b).

Unit	Community	Year	Households using caribou	Households harvesting caribou	Harvest	
					Number of caribou	95% CI
9B	Igiugig	2001	100%	91%	23	0%
		2005	100%	58%	24	22%
	Iliamna	2001	76%	43%	40	34%
		2004	77%	8%	3	62%
	Kokhanok	2001	94%	25%	20	84%
		2005	80%	26%	21	32%
	Levelock	2001	100%	53%	28	37%
		2005	100%	64%	27	33%

Unit	Community	Year	Households using caribou	Households harvesting caribou	Harvest	
					Number of caribou	95% CI
	Newhalen	2001	94%	65%	71	14%
		2004	88%	44%	49	9%
	Nondalton	2001	94%	27%	23	30%
		2004	53%	13%	18	9%
	Pedro Bay	2001	21%	0%	0	0%
		2004	28%	6%	1	0%
	Port Alsworth	2001	90%	10%	4	82%
		2004	86%	9%	6	21%
9C	King Salmon	2007	33%	12%	16	11%
	Naknek	2007	49%	21%	74	12%
	South Naknek	2007	62%	5%	2	6%
17A	Togiak	2001			106	27%
	Twin Hills	2001			8	31%
17B	Koliganek	2001	91%	57%	93	41%
		2005	89%	61%	91	28%
17C	Aleknagik	2001	89%	47%	48	23%
		2008	13%	0%	0	0%
	Clarks Point	2001	86%	57%	28	0%
		2008	36%	9%	2	216%
	Dillingham	2001	14%	6%	344	30%
		2010	36%	5%	63	52%
	Ekwok	2001	97%	31%	28	23%
	Manokotak	2001	88%	42%	68	17%
		2008	49%	8%	20	5%
	New Stuyahok	2001	98%	66%	260	13%
		2005	92%	59%	178	20%
	Portage Creek	2001	71%	29%	10	0%
18	Akiak	2010	78%	37%	55	21%
	Bethel	2011	55%	16%	446	20%
		2012	55%	13%	374	27%
	Eek	2013	61%	27%	47	28%
	Kwethluk	2010	87%	39%	111	21%
	Marshall	2010	7%	2%	6	136%
	Mountain Village	2010	6%	0%	0	
	Napakiak	2011	75%	32%	45	27%
	Napaskiak	2011	86%	41%	60	24%
	Oscarville	2010	92%	50%	10	28%
	Pilot Station	2013	6%	1%	3	102%
	Quinhagak	2013	65%	29%	125	21%
	Russian Mission	2011	11%	4%	5	96%
	Scammon Bay	2013	20%	4%	10	64%

Unit	Community	Year	Households using caribou	Households harvesting caribou	Harvest	
					Number of caribou	95% CI
19A	Tuluksak	2010	68%	22%	29	26%
	Tuntutuliak	2013	19%	8%	12	54%
	Red Devil	2005	0%	0%	0	0%
		2009	36%	18%	1	244%
	Sleetmute	2003	24%	10%	8	41%
		2004	18%	0%	0	0%
		2005	16%	0%	0	0%
		2009	3%	3%	2	75%
	Stony River	2003	53%	29%	14	22%
		2004	60%	20%	6	439%
		2005	33%	0%	0	0%
		2009	42%	8%	2	423%
	Upper Kalskag	2003	53%	35%	42	49%
		2004	30%	6%	4	24%
		2005	26%	15%	16	98%
		2009	15%	2%	1	605%

Effects of the Proposal

If this request is approved, the Federal in-season manager would be delegated authority to open and close seasons, announce harvest limits and set sex restrictions across the range of the MCH. While this change may decrease harvest opportunity for Federally qualified subsistence users in the short-term, it may also help conserve the MCH to ensure future harvest opportunities.

Given the recent, substantial decline in the MCH population, conservation measures are warranted. Low calf:cow ratios in the western segment of the MCH population in 2016 and 2017, where most of the harvest occurs, further contribute to conservation concerns (**Figure 4**). Furthermore, bull:cow ratios, which have been depressed since 2001, are hovering around the State's minimum objective of 35 bulls:100 cows (**Table 1**).

However, the effects of harvest on the population decline are unclear. In 2017 and 2018, reported harvest (440 and 238 caribou, respectively) only accounted for 3.3% and 1.8% of the estimated MCH population (13,500 caribou), respectively, which are very conservative harvest rates. Additionally, the magnitude of unreported harvest is unknown, with unknown effects on the MCH population. Therefore, the conservation benefits of adopting WP22-41 are uncertain.

Delegating authority to an in-season manager provides management flexibility, which is critical in responding to changing herd conditions in a timely manner. For example, an in-season manager could maximize harvest opportunity in the event of herd recovery, close all hunts in the event of further population declines to aid herd recovery, or (as was the case in 2020) balance harvest opportunity with herd recovery.

OSM PRELIMINARY CONCLUSION

Support Wildlife Proposal WP22-41

Justification

Conservation concerns exist for the MCH due to a substantial decline in abundance coupled with poor composition metrics. While the impact of harvest on the MCH is unclear, measures to conserve the herd and aid recovery are warranted. Delegating authority to an in-season manager provides the flexibility needed to make timely decisions and respond to changing conditions (e.g. MCH population decline or recovery).

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Appendix 1

Refuge Manager
Togiak National Wildlife Refuge
P.O. Box 270 MS 569
Dillingham, Alaska 99576

Dear Refuge Manager:

This letter delegates specific regulatory authority from the Federal Subsistence Board (Board) to the manager of the Togiak National Wildlife Refuge to issue emergency or temporary special actions if necessary to ensure the conservation of a healthy wildlife population, to continue subsistence uses of wildlife, for reasons of public safety, or to assure the continued viability of a wildlife population. This delegation only applies to the Federal public lands subject to Alaska National Interest Lands Conservation Act (ANILCA) Title VIII jurisdiction within Units 9A, 9B, 9C (that portion within the Alagnak River drainage), 9C (that portion draining into the Naknek River from the north, and Graveyard Creek and Coffee Creek), 17A (all drainages west of Right Hand Point), 17A remainder, 17B, 17C (that portion of 17C east of the Wood River and Wood River Lakes), 17C remainder, 18 (that portion to the east and south of the Kuskokwim River), 18 remainder, 19A and 19B (excluding rural Alaska residents of Lime Village) for the management of caribou on these lands.

It is the intent of the Board that actions related to management of caribou by Federal officials be coordinated, prior to implementation, with the Alaska Department of Fish and Game (ADF&G), representatives of the Office of Subsistence Management (OSM), the Bureau of Land Management (BLM) Anchorage Field Office manager, the Nushagak Peninsula Caribou Planning Committee, the Yukon Delta National Wildlife Refuge manager, the Superintendent of Katmai National Park and Preserve, the Superintendent of Lake Clark National Park and Preserve, and the Chair of affected Council(s) to the extent possible. The Office of Subsistence Management will be used by managers to facilitate communication of actions and to ensure proposed actions are technically and administratively aligned with legal mandates and policies. Federal managers are expected to work with managers from the State and other Federal agencies, the Council Chair or alternate, local tribes, and Alaska Native Corporations to minimize disruption to subsistence resource users and existing agency programs, consistent with the need for special action.

DELEGATION OF AUTHORITY

1. Delegation: The Togiak National Wildlife Refuge manager is hereby delegated authority to issue emergency or temporary special actions affecting caribou on Federal lands as outlined under the **Scope of Delegation**. Any action greater than 60 days in length (temporary special action) requires a public hearing before implementation. Special actions are governed by Federal regulation at 36 CFR 242.19 and 50 CFR 100.19.

2. Authority: This delegation of authority is established pursuant to 36 CFR 242.10(d)(6) and

50 CFR 100.10(d)(6), which state: “The Board may delegate to agency field officials the authority to set harvest and possession limits, define harvest areas, specify methods or means of harvest, specify permit requirements, and open or close specific fish or wildlife harvest seasons within frameworks established by the Board.”

3. Scope of Delegation: The regulatory authority hereby delegated is limited to the following authorities within the limits set by regulation at 36 CFR 242.26 and 50 CFR 100.26:

- To open and close seasons, announce harvest limits and set sex restrictions for caribou on Federal public lands in Units 9A, 9B, 9C (that portion within the Alagnak River drainage), 9C (that portion draining into the Naknek River from the north, and Graveyard Creek and Coffee Creek), 17A (all drainages west of Right Hand Point), 17B and 17C (that portion of 17C east of the Wood River and Wood River Lakes), 18 (that portion to the east and south of the Kuskokwim River), 18 remainder, 19A and 19B (excluding rural Alaska residents of Lime Village).

This delegation also permits you to close and reopen Federal public lands to nonsubsistence hunting, but does not permit you to specify methods and means, permit requirements, or harvest and possession limits for State-managed hunts.

This delegation may be exercised only when it is necessary to conserve caribou populations, to continue subsistence uses, for reasons of public safety, or to assure the continued viability of the populations. All other proposed changes to codified regulations, such as customary and traditional use determinations or adjustments to methods and means of take, shall be directed to the Board.

The Federal public lands subject to this delegated authority are those within Units 9A, 9B, 9C (that portion within the Alagnak River drainage), 9C (that portion draining into the Naknek River from the north, and Graveyard Creek and Coffee Creek), 17A (all drainages west of Right Hand Point), 17A remainder, 17B, 17C (that portion of 17C east of the Wood River and Wood River Lakes), 17C remainder, 18 (that portion to the east and south of the Kuskokwim River), 18 remainder, 19A and 19B (excluding rural Alaska residents of Lime Village).

4. Effective Period: This delegation of authority is effective from the date of this letter and continues until superseded or rescinded.

5. Guidelines for Delegation: You will become familiar with the management history of the wildlife species relevant to this delegation in the region, with current State and Federal regulations and management plans, and be up-to-date on population and harvest status information. You will provide subsistence users in the region a local point of contact about Federal subsistence issues and regulations and facilitate a local liaison with State managers and other user groups.

You will review special action requests or situations that may require a special action and all supporting information to determine (1) consistency with 50 CFR 100.19 and 36 CFR 242.19,

(2) if the request/situation falls within the scope of authority, (3) if significant conservation problems or subsistence harvest concerns are indicated, and (4) what the consequences of taking an action or no action may be on potentially affected Federally qualified subsistence users and non-Federally qualified users. Requests not within your delegated authority will be forwarded to the Board for consideration. You will maintain a record of all special action requests and rationale for your decision. A copy of this record will be provided to the Administrative Records Specialist in OSM no later than sixty days after development of the document.

For management decisions on special actions, consultation is not always possible, but to the extent practicable, two-way communication will take place before decisions are implemented. You will also establish meaningful and timely opportunities for government-to-government consultation related to pre-season and post-season management actions as established in the Board's Government-to-Government Tribal Consultation Policy (Federal Subsistence Board Government-to-Government Tribal Consultation Policy 2012 and Federal Subsistence Board Policy on Consultation with Alaska Native Claim Settlement Act Corporations 2015).

You will immediately notify the Board through the Assistant Regional Director for OSM, and coordinate with the Chair(s) or alternate of the affected Council(s), local ADF&G managers, and other affected Federal conservation unit managers concerning emergency and temporary special actions being considered. You will ensure that you have communicated with OSM to ensure the special action is aligned with ANILCA Title VIII, Federal Subsistence regulations and policy, and that the perspectives of the Chair(s) or alternate of the affected Council(s), OSM, and affected State and Federal managers have been fully considered in the review of the proposed special action.

If the timing of a regularly scheduled meeting of the affected Council(s) permits without incurring undue delay, you will seek Council recommendations on the proposed temporary special action(s). If the affected Council(s) provided a recommendation, and your action differs from that recommendation, you will provide an explanation in writing in accordance with 50 CFR 100.10(e)(1) and 36 CFR 242.10(e)(1).

You will issue decisions in a timely manner. Before the effective date of any decision, reasonable efforts will be made to notify the public, OSM, affected State and Federal managers, law enforcement personnel, and Council members. If an action is to supersede a State action not yet in effect, the decision will be communicated to the public, OSM, affected State and Federal managers, and the local Council members at least 24 hours before the State action would be effective. If a decision to take no action is made, you will notify the proponent of the request immediately. A summary of special action requests and your resultant actions must be provided to the coordinator of the appropriate Council(s) at the end of each calendar year for presentation to the Council(s).

You may defer a special action request, otherwise covered by this delegation of authority, to the Board in instances when the proposed management action will have a significant impact on a large number of Federal subsistence users or is particularly controversial. This option should be exercised judiciously and may be initiated only when sufficient time allows for it. Such deferrals should not be considered when immediate management actions are necessary for

conservation purposes. The Board may determine that a special action request may best be handled by the Board, subsequently rescinding the delegated regulatory authority for the specific action only.

6. Support Services: Administrative support for regulatory actions will be provided by the Office of Subsistence Management.

Sincerely,

Anthony Christianson
Chair

Enclosures

cc: Federal Subsistence Board
Assistant Regional Director, Office of Subsistence Management
Deputy Assistant Regional Director, Office of Subsistence Management
Subsistence Policy Coordinator, Office of Subsistence Management
Wildlife Division Supervisor, Office of Subsistence Management
Subsistence Council Coordinators, Office of Subsistence Management
Chair, Bristol Bay Subsistence Regional Advisory Council
Chair, Western Interior Alaska Subsistence Regional Advisory Council
Chair, Yukon-Kuskokwim Delta Subsistence Regional Advisory Council
Yukon Delta National Wildlife Refuge Manager
Katmai National Preserve Superintendent
Lake Clark National Preserve Superintendent
Bureau of Land Management, Anchorage Field Office Manager
Deputy Commissioner, Alaska Department of Fish and Game
Special Projects Coordinator, Alaska Department of Fish and Game
Interagency Staff Committee
Administrative Record

WP22-42 Executive Summary	
General Description	Wildlife Proposal WP22-42 requests the Federal Subsistence Board increase the harvest limit of moose from 2 to 3 in Unit 18 remainder. <i>Submitted by: The Yukon Kuskokwim Delta Subsistence Regional Advisory Council.</i>
Proposed Regulation	Unit 18—Moose <i>Unit 18, remainder—2 3 moose, only one of Aug. 1- Apr. 30 which may be antlered. Antlered bulls may not be harvested from Oct. 1 through Nov. 30</i>
OSM Preliminary Conclusion	Support
Yukon Kuskokwim Delta Subsistence Regional Advisory Council	
Western Interior Subsistence Regional Advisory Council	
Seward Peninsula Subsistence Regional Advisory Council	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

**DRAFT STAFF ANALYSIS
WP22-42**

ISSUES

Proposal WP22-42, submitted by the Yukon Kuskokwim Delta Subsistence Regional Advisory Council (Council), requests the Federal Subsistence Board (Board) increase the harvest limit of moose from 2 to 3 in Unit 18 remainder (**Figure 1**).

DISCUSSION

The proponent states this request to increase the harvest limit by one additional moose in Unit 18 remainder is needed to continue subsistence uses and increase opportunity for sharing moose throughout the Yukon-Kuskokwim Delta region. Increasing the harvest limit will help to ensure long-term sustainability of the Lower Yukon River area moose population, which is currently too high to be supported by the local environment. If this moose population is not reduced, it is at risk of crashing due to over browsing of available forage. Additional harvest opportunity of one extra moose in Unit 18 remainder will support the Lower Yukon River communities' ability to provide for their families and community. It will also increase sharing opportunities with subsistence communities in other areas of the Yukon-Kuskokwim Delta that do not have as abundant of a moose population and are in need of subsistence food support. Increased harvest and sharing opportunity is especially needed in these times of low salmon returns on the Yukon and Kuskokwim Rivers and recent closures to the harvest of Mulchatna caribou.

Existing Federal Regulation

Unit 18—Moose

*Unit 18, remainder—2 moose, only one of which may be antlered. Aug. 1- Apr. 30
Antlered bulls may not be harvested from Oct. 1 through Nov. 30*

Proposed Federal Regulation

Unit 18—Moose

*Unit 18, remainder—2 3 moose, only one of which may be antlered. Aug. 1- Apr. 30
Antlered bulls may not be harvested from Oct. 1 through Nov. 30*

Existing State Regulation

Unit 18 - Moose

<i>Resident</i>	<i>Two moose only one of which may be an antlered bull, taking calves or cows accompanied by calves is prohibited</i>	<i>Aug. 1 – Sept. 30</i>
	<i>Or</i>	
	<i>Two antlerless moose</i>	
	<i>Or</i>	
<i>Remainder (includes Lower Yukon hunt area)</i>	<i>Two moose</i>	<i>Oct. 1 – Nov. 30</i>
		<i>Dec. 1 – Apr. 30</i>
<i>Non resident</i>	<i>One antlered bull</i>	<i>Sept. 1 – Sept 30</i>
	<i>Or</i>	
	<i>One antlerless moose</i>	<i>Dec. 1 – Mar. 15</i>

Extent of Federal Public Lands

Federal public lands comprise approximately 66.7% of Unit 18 and consist of 64.0% U.S. Fish and Wildlife Service (USFWS) managed lands and 2.7% Bureau of Land Management (BLM) managed lands.

Customary and Traditional Use Determinations

Residents of Unit 18, Aniak, Chuathbaluk, Kalskag, and Lower Kalskag have a customary and traditional use determination for moose in Unit 18, that portion of the Yukon River drainage upstream of Russian Mission and that portion of the Kuskokwim River drainage upstream of (but excluding) the Tuluksak River drainage.

Residents of Unit 18, St. Michael, Stebbins, Kalskag, and Lower Kalskag have a customary and traditional use determination for moose in Unit 18, that portion north of a line from Cape Romanzof to Kusilvak Mountain to Mountain Village, and all drainages north of the Yukon River downstream from Marshall.

Residents of Unit 18, Lower Kalskag, and Kalskag have a customary and traditional use determination for moose in the Unit 18 remainder area of this customary and traditional use determination.

Regulatory History

In November 2005, the Alaska Board of Game (BOG) adopted Proposal 4 in response to the rapid growth of the lower Yukon moose population. Action taken on the proposal modified the State harvest limit by allowing the harvest of antlered bulls only and established a winter season for antlered bulls and calves. During its November 2007 meeting, the BOG adopted Proposal 6, which lengthened the fall moose season for the lower Yukon and remainder areas of Unit 18 by 21 days and lengthened the winter season in the lower Yukon by 10 days.

At its March 2009 meeting, the BOG adopted Proposal 228, which liberalized the State harvest limit from antlered bulls to any moose for the Dec. 20–Jan. 20 season in the lower Yukon area of Unit 18. The BOG stated that the affected moose population increased to a size that could support the harvest of cows.

At its November 12, 2009 work session, the Board approved Special Action WSA08-13, which requested the harvest limit in the lower Yukon area of Unit 18 be increased to two moose per regulatory year, with one allowed in the fall and one in the winter.

At its November 13–16, 2009 meeting, the BOG adopted new regulations to extend the winter season from Jan. 20 to Feb. 28 and move the boundary between the lower Yukon and the remainder areas south, to a more discernible geographic landmark.

In 2010, the Yukon Delta National Wildlife Refuge (NWR) submitted Proposal WP10-56, which requested that the harvest limit in the lower Yukon area of Unit 18 (that portion north and west of a line from Cape Romanzof to Kusilvak Mountain to Mountain Village, excluding all Yukon River drainages upriver from Mountain Village) be changed to two moose per regulatory year. Hunters were allowed to harvest one antlered bull in the fall season and one moose in the winter season. Hunters that did not harvest a moose in the fall would be allowed to harvest two moose during the winter season. The proposal also requested that the Yukon Delta NWR manager be delegated the authority to restrict the harvest in the winter season to one antlered bull or one moose per regulatory year, after consultation with the Alaska Department of Fish and Game (ADF&G). The proposal was adopted by the Board with modification to extend the winter season to February 28.

Also in 2010, the Yukon Delta NWR submitted Proposal WP10-57, which requested a change in a portion of the regulatory boundary description for Unit 18, north and west of a line from Cape Romanzof to Kusilvak Mountain to Mountain Village, excluding all Yukon River drainages upriver from Mountain Village. This area was referred to as the lower Yukon hunt area. The proposal was adopted by the Board with modification to remove the Cape Romanzof to Kusilvak Mountain section and replace it with a descriptor for the Kashunuk River drainage.

In 2012, the Yukon Delta NWR submitted Proposal WP12-49, requesting the moose season in Unit 18, that portion north and west of the Kashunuk River including the north bank from the mouth of the river upstream to the old village of Chakaktolik, and west of a line from Chakaktolik to Mountain Village excluding all Yukon River drainages upriver from Mountain Village, be revised from the fall and winter dates (Aug. 10 - Sept. 30 and Dec. 20 - Feb. 28) to Aug. 1 through the last day of February. The harvest limit was two moose, only one of which may be antlered. The harvest of an antlered bull would be limited to the dates of Aug. 1 – Sept. 30. The proposal was adopted with modification by the Board at its January 2012 meeting to allow for the harvest of an antlered bull starting on Aug. 1 instead of Sept. 1.

In 2014, the Council submitted Proposal WP14-23, which requested an extension of the moose season in Unit 18, that portion north and west of the Kashunuk River including the north bank from the mouth of the river upstream to the old village of Chakaktolik to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village, from August to the last day of February, to Aug. 1 – Mar. 31. It also requested removal of the bull-only restriction from Aug. 1 – Sept. 30. The proposal was adopted with modification by the Board, which resulted in combining the lower Yukon portion of Unit 18 with Unit 18 remainder, establishing a single Yukon drainage hunt area. The modification also stipulated that antlered bulls may not be harvested Oct. 1 – Nov. 30. The harvest limit in Unit 18 remainder was also increased to two moose.

In 2018, the Board adopted Proposal WP18-29, submitted by the Orutsararmiut Native Council, which requested the moose season in Unit 18 remainder be lengthened from Aug. 1- Mar. 31 to Aug. 1- Apr. 30. The Council concurred with the analysis and agency reports that the moose population seemed to be doing very well in the area and supported providing additional subsistence opportunity through an extended season.

At its January 17–20, 2020 meeting, the BOG adopted Proposal 8 regulations to extend the winter season from Mar. 15 to Apr. 30. The BOG stated that the moose population was continuing to increase and suspected that the Paimiut area had surpassed carrying capacity. Extending the season to Apr. 30 would help manage the growing population (BOG 2020).

In 2021, the Board approved emergency special action WSA21-02, submitted by the Council, requesting the Board increase the harvest limit for moose in Unit 18 remainder from 2 moose to 3 moose for the rest of the 2020/21 hunting season, which ended on April 30, 2021. The Board approved this request as the moose population in the Unit 18 remainder hunt area exceeded management objectives and habitat carrying capacity. While increasing the harvest limit may not have been enough to slow the growth of the population, it increased opportunity for harvest by Federally qualified subsistence users and helped support sharing in an area that has had a decline in salmon and caribou harvest.

Biological Background

Moose began to migrate into the Yukon-Kuskokwim Delta during the mid- to late-1940s and have become an important subsistence resource for locals (Perry 2014). Moose rely on willow and shrub

habitats for browsing and for cover from predators (Tape et al. 2016). The taller vegetation heights estimated in the northern and western portions of the state provide more suitable cover and increased forage availability above the snowpack for moose populations than was present in the past (Tape et al. 2016), yet most of the Yukon-Kuskokwim Delta is lowland treeless tundra and is not suitable as winter moose habitat. Consequently, much of the region supports only low to very low density moose populations. However, productive habitat does exist along river corridors, with approximately 4,500 mi² and 3,500 mi² of suitable moose habitat occurring along the Yukon and Kuskokwim Rivers, respectively (Perry 2014). The Yukon River moose population currently occupies most of the available riparian habitat, is at moderate to high density, is growing, and has high calf production and yearling recruitment (Perry 2014).

ADF&G management goals for moose in Unit 18 include: allowing populations to increase to levels sustainable by the current habitat; maintaining healthy age and bull:cow structures; monitoring the population size, trend, and composition; maintaining a continual and sustainable bull harvest; improving harvest reporting; and minimizing user group conflicts related to moose (Perry 2014). Specific objectives for the unit are to allow the lower Yukon River moose populations to increase above 2,500 – 3,500 moose, maintaining a minimum of 30 bulls:100 cows, conduct seasonal composition surveys, and conduct winter censuses and recruitment surveys (Perry 2014).

Population and composition surveys are conducted in five survey areas in Unit 18 (**Figure 2**; Perry 2014, OSM 2021). The Lowest Yukon, Andreafsky, and Paimiut survey areas are located within the Unit 18 remainder hunt area. These survey areas were purposely kept small to allow for multiple areas to be surveyed annually.

Between 1988 and 2008, surveys to estimate population size were conducted in the Lowest Yukon survey area of Unit 18 (**Table 1**; OSM 2021). At that time, the survey area encompassed the riparian corridor along the main stem of the Yukon River downstream of Mountain Village (Perry 2014). In February 2017, the survey area was expanded to accommodate the widening distribution of moose. The results of the 2017 survey estimated the population to be 8,226 moose in the expanded survey area, or 4.7 moose/mi² (OSM 2021). By comparison, the moose population and density within the original survey area in 2017 was estimated to be 5,719 with 4.8 moose/mi², compared to 2.4 moose/mi² in 2008 (**Figure 3**; OSM 2021). The most recent survey was done in Feb./March 2021. The results of this survey estimated the current population to be 12,031 moose in the expanded survey area, at 6.89 moose/mi². This implies that the Lowest Yukon moose population in Unit 18 has grown at an annual rate of 10% per year from 2017 to 2021 (ADF&G 2021a). This is well above the States management objective of 2,500 – 3,500 moose for this area (Perry 2014).

In the adjacent Andreafsky survey area, which includes the Yukon River from Pilot Station downstream to Mountain Village (Perry 2014), surveys were most recently conducted in 2021. The population was estimated at 6852 moose. The density was estimated in combination with the Paimiut survey area at 3.68 moose/mi² (ADF&G 2021b). Like the moose population in the Lowest Yukon survey area, the population in the Andreafsky area has grown substantially since the early 2000s (**Figure 3**), but it remains at lower density compared to the Lowest Yukon population (OSM 2021).

Population estimates were conducted in the Paimiut survey area in February 2013 and was estimated 6,031 moose with a density of 3.84 moose/mi², which was an increase from the population estimate of 3,614 moose and density of 2.3 moose/mi² calculated in 2006 (**Table 1, Figure 3**; OSM 2021, Perry 2014). In 2021, the moose population within the Paimiut survey area was estimated at 4,786 moose (ADF&G 2021b).

Adequate survey conditions for fall composition surveys are only present every three or four years. Consequently, composition surveys are completed as conditions allow (Perry 2014). The most recent Lowest Yukon survey area composition data was collected in November 2016. The bull:cow and calf:cow ratios were calculated at 25 bulls:100 cows and 81 calves:100 cows, respectively. While the bull:cow ratio is below the management objectives for the unit, the cow:calf ratio is high and indicates a growing population. Bull:cow ratios in the Andreafsky (63 bulls:100 cows in 2020) and Paimiut (57 bulls:100 cows in 2019) areas were more than double of those in the Lowest Yukon area and well above State management objectives (**Table 2**; ADF&G 2020).



Figure 1 Unit 18 remainder hunt area.

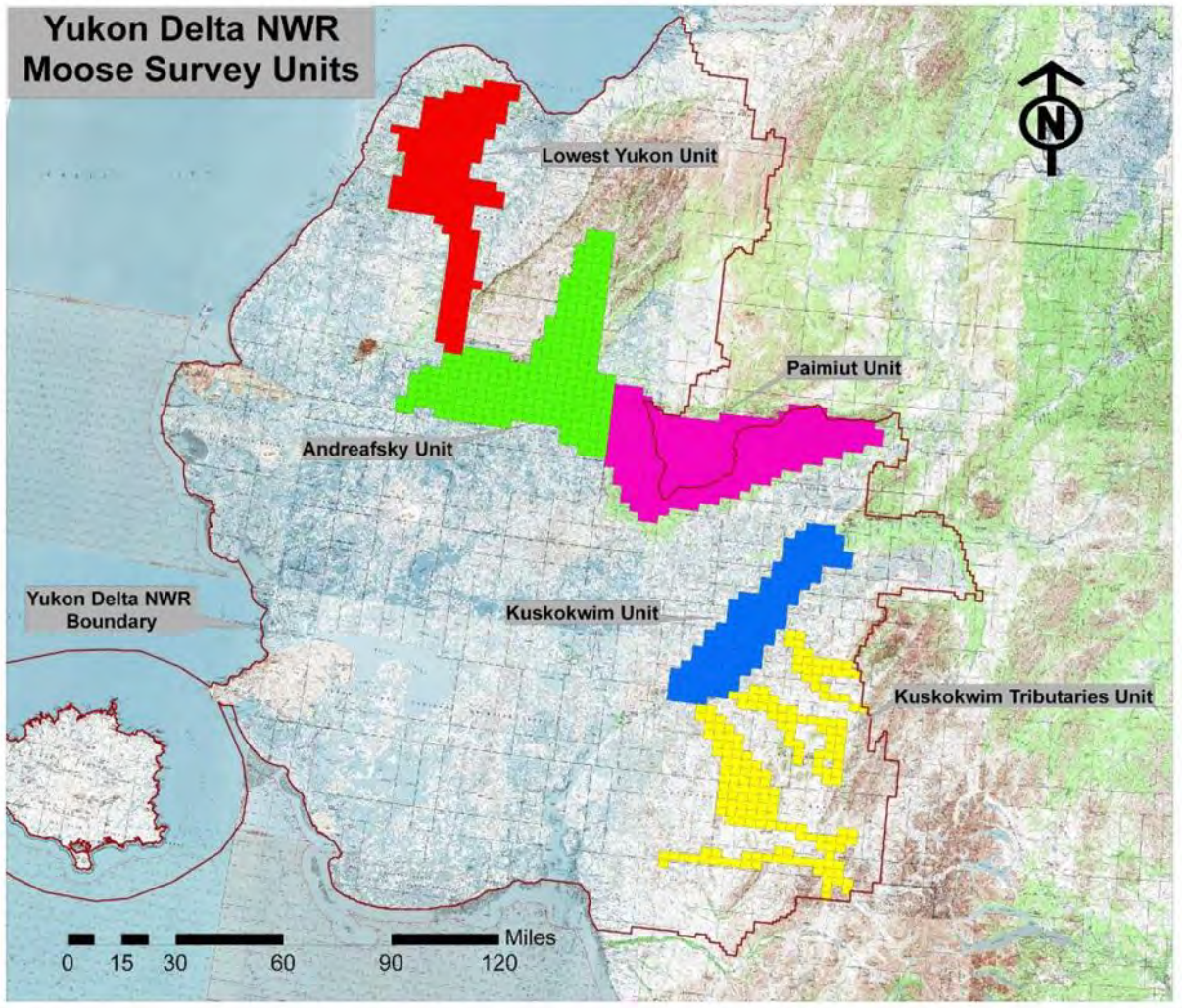


Figure 2. Yukon Delta National Wildlife Refuge Moose Survey Units (Rearden 2015 as cited in OSM 2021).

Table 1. Moose population estimates from spring census surveys in the survey areas located within Unit 18 remainder (OSM 2021, ADF&G 2021a, ADF&G 2021b).

Census Area	Year	Estimate at 95%CI	Density (mi ²)	Census Technique
Lowest Yukon	1988	0	NA	Minimum count
	1992	28	0.02	Minimum count
	1994	65	0.04	Minimum count
	2002	674 ± 21.9%	0.59	Spatial method
	2005	1342 ± 21.0%	1.12	Spatial method
	2008	2,827 ± 11.98%	2.37	Spatial method
	2008	3,319 ± 16.08%	2.78	Spatial method w/ SCF
	2017	5,719± 12%	4.79	Geospatial
	2017*	8,226 ± 11%	4.71	Geospatial
	2021	12,031 ± 33%	6.89	Geospatial
Andreafsky	1995	52 ± 74.0%	0.04	Gassaway method
	1999	524 ± 29.8%	0.23	Spatial method
	2002	418 ± 22.4%	0.26	Spatial method
	2012	2,748 ± 19.8%	1.72	Spatial method
	2012	3,170 ± 24.3%	1.99	Spatial method w/ SCF
	2021	6,852 ± 20.2%	3.68**	Geospatial
Paimiut	1992	994 ± 19.7%	0.64	Gassaway method
	1998	2,024 ± 12.93%	1.3	Gassaway method
	2002	2,382 ± 16.1%	1.52	Spatial method
	2006	3,614 ± 18.1%	2.3	Spatial method
	2013	5,598 ± 17.8%	3.56	Spatial method
	2013	6,031 ± 20.0%	3.84	Spatial method w/ SCF
	2021	4,786 ± 14.5%	3.68**	Geospatial
*Census area was increased in 2017 in the Lowest Yukon area.				
** Andreafsky and Paimiut density estimates done as one combined unit.				

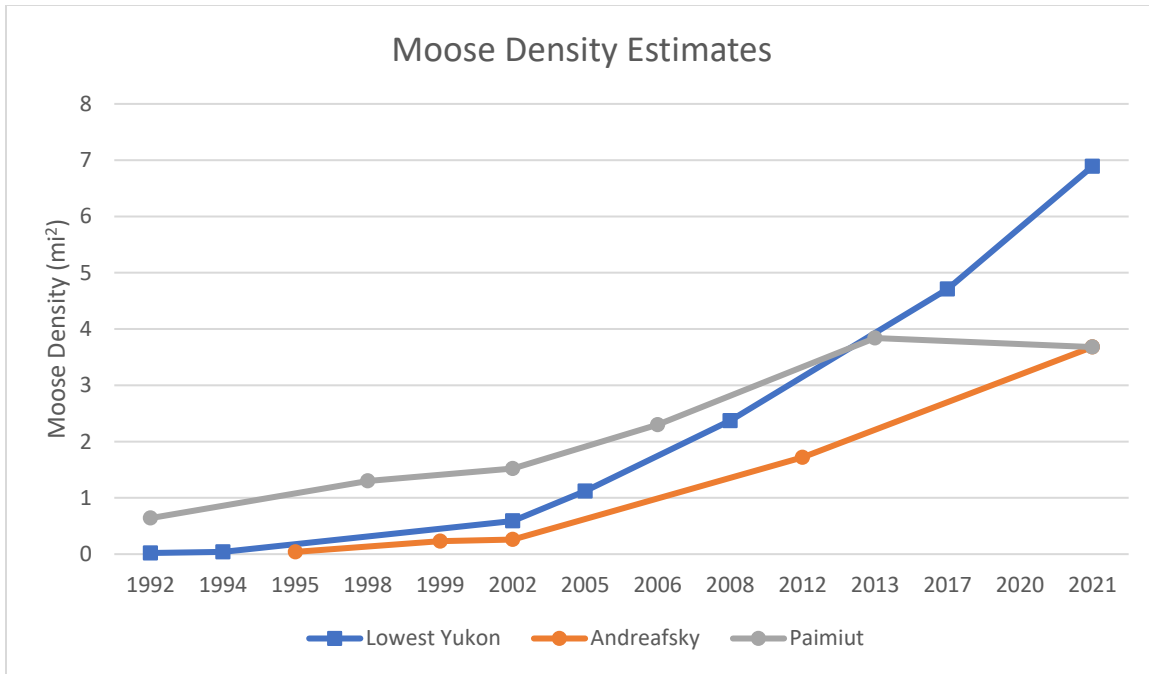


Figure 3 Moose density trend for Lowest Yukon, Andreafsky, and Paimiut survey areas. Note: Andreafsky and Paimiut density estimates were combined in 2021.

Table 2. Composition survey data from the moose survey areas located within Unit 18 remainder (ADF&G 2020).

Area	Year	Bull: 100 Cows	Calf: 100 Cows
Lowest Yukon Survey Area	2010	30	69
	2013	40	48
	2016	25	81
Andreafsky Survey Area	2010	42	61
	2019	57	41
	2020	63	35
Paimut Survey Area	2013	40	48
	2016	58	54
	2019	57	40

Harvest History

ADF&G’s harvest records for the general moose hunt in Unit 18 only includes Unit 18 remainder as moose harvest in the other hunt areas of Unit 18 are by registration permit. Over the past 10 years, the largest portion of the harvest has been by Alaska residents. Total reported harvest has increased roughly 26% from 587 moose in 2010 to 795 moose in 2019. While the number of hunters has stayed

relatively the same in the past 10 years, the success rate for those hunters has increased from 52% to 73% (Figure 4, ADF&G 2021c).

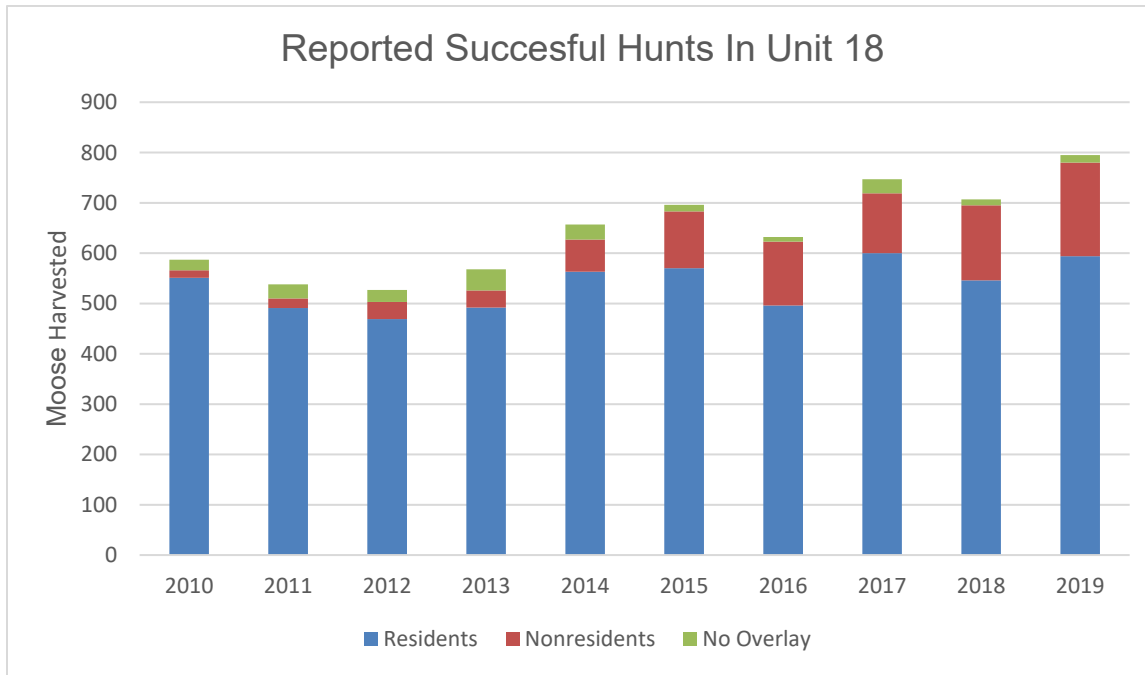


Figure 4. Reported general season moose harvested in Unit 18 (ADF&G 2021c).

Effects of the Proposal

If this proposal is adopted by the Board, the harvest limit for moose in the Unit 18 remainder hunt area will increase from two to three moose for Federally qualified subsistence users. No impacts are expected on non-Federally qualified users or the moose population, which exceeds management population objectives and is believed to exceed habitat carrying capacity. The requested increased harvest limit may slow the continued growth of this moose population, which would be a positive effect. In addition, the expanded harvest limit would increase opportunity for Federally qualified subsistence users and might promote further sharing of moose throughout the Yukon-Kuskokwim region and support subsistence families in need.

OSM PRELIMINARY CONCLUSION

Support Proposal WP22-42.

Justification

The moose population in the Unit 18 remainder hunt area far exceeds management objectives and is believed to exceed the habitat carrying capacity. Increasing the harvest limit from 2 to 3 moose may help limit the growth of this moose population and will provide additional opportunity for Federally qualified subsistence users.

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WP22-43/44 Executive Summary	
General Description	<p>Wildlife Proposal WP22-43 requests delegating authority to the Federal in-season manager to increase the moose harvest quota in Zone 1 of the Kuskokwim hunt area of Unit 18 if the water levels are too low to access Zone 2. <i>Submitted by: The Yukon-Kuskokwim Delta Subsistence Regional Advisory Council.</i></p> <p>Wildlife Proposal WP22-44 requests that the fall moose season in the Kuskokwim hunt area of Unit 18 be extended from Sept. 1 – 30 to Sept. 1 – Oct. 15 and that a may-be-announced season be established from Dec. 1-Jan. 31 with a harvest limit of one antlered bull by Federal registration permit. <i>Submitted by: Yukon Delta National Wildlife Refuge.</i></p>
Proposed Regulation	<p><u>WP22-43</u></p> <p style="text-align: center;">Unit 18—Moose</p> <p><i>Unit 18 – that portion east of a line running from the mouth of the Ishkowik River to the closest point of Dall Lake, then to the east bank of the Johnson River at its entrance into Nunavakanukakslak Lake (N 60°59.41' Latitude; W162°22.14' Longitude), continuing upriver along a line 1/2 mile south and east of, and paralleling a line along the southerly bank of the Johnson River to the confluence of the east bank of Crooked Creek, then continuing upriver to the outlet at Arhymot Lake, then following the south bank east of the Unit 18 border and then north of and including the Eek River drainage¹—1 antlered bull by State registration permit; quotas will be announced annually by the Yukon Delta National Wildlife Refuge Manager. If river water levels are too low to access the Zone 2 moose hunt area, then the Refuge Manager may expand the moose harvest quota for Zone 1.</i></p> <p><i>Federal public lands are closed to the taking of moose except by residents of Tuntutuliak, Eek, Napakiak, Napaskiak, Kasigluk, Nunapitchuk, Atmautlauk, Oscarville, Bethel, Kwethluk,</i></p>

	<p><i>Akiachak, Akiak, Tuluksak, Lower Kalskag, and Kalskag</i></p> <p><u>WP22-44</u></p> <p>Unit 18—Moose</p> <p><i>Unit 18 – that portion east of a line running from the mouth of the Ishkowik River to the closest point of Dall Lake, then to the east bank of the Johnson River at its entrance into Nunavakanukakslak Lake (N 60°59.41' Latitude; W162°22.14' Longitude), continuing upriver along a line 1/2 mile south and east of, and paralleling a line along the southerly bank of the Johnson River to the confluence of the east bank of Crooked Creek, then continuing upriver to the outlet at Arhymot Lake, then following the south bank east of the Unit 18 border and then north of and including the Eek River drainage¹—1 antlered bull by State registration permit; quotas will be announced annually by the Yukon Delta National Wildlife Refuge Manager. Up to one antlered bull by Federal registration permit may be announced.</i></p> <p><i>Federal public lands are closed to the taking of moose except by residents of Tuntutuliak, Eek, Napakiak, Napaskiak, Kasigluk, Nunapitchuk, Atmautlauk, Oscarville, Bethel, Kwethluk, Akiachak, Akiak, Tuluksak, Lower Kalskag, and Kalskag</i></p>
<p>OSM Preliminary Conclusion</p>	<p>Oppose Proposal WP22-43 and Support Proposal WP22-44 with modification to clarify the regulatory language and to delegate authority to the Yukon Delta NWR manager to announce the winter season and set harvest quotas via delegation of authority letter only</p> <p>The modified regulation should read:</p>

	<p>Unit 18—Moose</p> <p><i>Unit 18 – that portion east of a line running from the mouth of the Ishkowiik River to the closest point of Dall Lake, then to the east bank of the Johnson River at its entrance into Nunavakanukakslak Lake (N 60°59.41' Latitude; W162°22.14' Longitude), continuing upriver along a line 1/2 mile south and east of, and paralleling a line along the southerly bank of the Johnson River to the confluence of the east bank of Crooked Creek, then continuing upriver to the outlet at Arhymot Lake, then following the south bank east of the Unit 18 border and then north of and including the Eek River drainage—1 antlered bull by State registration permit during the fall season;</i></p> <p>OR</p> <p><i>1 antlered bull by Federal registration permit during a winter season.</i></p> <p><i>Federal public lands are closed to the taking of moose except by residents of Tuntutuliak, Eek, Napakiak, Napaskiak, Kasigluk, Nunapitchuk, Atmautlauk, Oscarville, Bethel, Kwethluk, Akiachak, Akiak, Tuluksak, Lower Kalskag, and Kalskag</i></p>
<p>Yukon Kuskokwim Delta Subsistence Regional Advisory Council</p>	
<p>Western Interior Subsistence Regional Advisory Council</p>	
<p>Interagency Staff Committee Comments</p>	
<p>ADF&G Comments</p>	
<p>Written Public Comments</p>	<p>None</p>

DRAFT STAFF ANALYSIS
WP22-43/44

ISSUES

Wildlife Proposal WP22-43, submitted by the Yukon-Kuskokwim Delta Subsistence Regional Advisory Council (Council) requests delegating authority to the Federal in-season manager to increase the moose harvest quota in Zone 1 of the Kuskokwim hunt area of Unit 18 if the water levels are too low to access Zone 2.

Wildlife Proposal WP22-44, submitted by the Yukon Delta National Wildlife Refuge (NWR), requests that the fall moose season in the Kuskokwim hunt area of Unit 18 be extended from Sept. 1 – 30 to Sept. 1 – Oct. 15 and that a may-be-announced season be established from Dec. 1-Jan. 31 with a harvest limit of one antlered bull by Federal registration permit.

DISCUSSION

WP22-43

The Council voted to submit this proposal after discussion with Kwethluk residents who stated that water levels in the Kuskokwim River tributaries have been too low in recent years to successfully access Zone 2 and hunt moose. Low winter snowpack and hot, dry summers in recent years have increasingly made access to Zone 2 by prop boat more challenging. When access to Zone 2 is prohibited due to low water levels, providing for other subsistence opportunity, such as increasing the quota in the more accessible Zone 1 located along the main stem of the Kuskokwim River, is imperative.

WP22-44

The Refuge states that the average moose harvest since 2017 for the RM615 hunt within Zone 2 has been 78 moose, which is below the quota of 110 moose. Adoption of this proposal will increase harvest within sustainable levels and will not result in population declines because of the limited bulls-only harvest. The proponent further states that extending the fall season in Zone 2, which is predominantly Federal public lands, will allow for additional hunting opportunity for Federally qualified subsistence users, while also allowing the Federal manager to assess how much harvest increases during the requested two week long extension. The proponent states that announcement of a “may be announced” winter season would allow harvest of the remaining fall quota. While not explicit in their proposal, the proponent clarified that use of the Federal registration permit was only intended for the may-be-announced winter season.

Existing Federal Regulation

Unit 18—Moose

Unit 18 – that portion east of a line running from the mouth of the Ishkowiik River to the closest point of Dall Lake, then to the east bank of the Johnson

River at its entrance into Nunavakanukakslak Lake (N 60°59.41' Latitude; W162°22.14' Longitude), continuing upriver along a line 1/2 mile south and east of, and paralleling a line along the southerly bank of the Johnson River to the confluence of the east bank of Crooked Creek, then continuing upriver to the outlet at Arhymot Lake, then following the south bank east of the Unit 18 border and then north of and including the Eek River drainage¹—1 antlered bull by State registration permit; quotas will be announced annually by the Yukon Delta National Wildlife Refuge Manager

Federal public lands are closed to the taking of moose except by residents of Tuntutuliak, Eek, Napakiak, Napaskiak, Kasigluk, Nunapitchuk, Atmanutlauk, Oscarville, Bethel, Kwethluk, Akiachak, Akiak, Tuluksak, Lower Kalskag, and Kalskag

¹Referred to as the Kuskokwim hunt area throughout the analysis.

Proposed Federal Regulation

WP22-43

Unit 18—Moose

*Unit 18 – that portion east of a line running from the mouth of the Ishkowik River to the closest point of Dall Lake, then to the east bank of the Johnson River at its entrance into Nunavakanukakslak Lake (N 60°59.41' Latitude; W162°22.14' Longitude), continuing upriver along a line 1/2 mile south and east of, and paralleling a line along the southerly bank of the Johnson River to the confluence of the east bank of Crooked Creek, then continuing upriver to the outlet at Arhymot Lake, then following the south bank east of the Unit 18 border and then north of and including the Eek River drainage¹—1 antlered bull by State registration permit; quotas will be announced annually by the Yukon Delta National Wildlife Refuge Manager. **If river water levels are too low to access the Zone 2 moose hunt area, then the Refuge Manager may expand the moose harvest quota for Zone 1.*** Sept. 1 – 30

Federal public lands are closed to the taking of moose except by residents of Tuntutuliak, Eek, Napakiak, Napaskiak, Kasigluk, Nunapitchuk, Atmanutlauk, Oscarville, Bethel, Kwethluk, Akiachak, Akiak, Tuluksak, Lower Kalskag, and Kalskag

¹Referred to as the Kuskokwim hunt area throughout the analysis.

WP22-44

Unit 18—Moose

*Unit 18 – that portion east of a line running from the mouth of the Ishkowik River to the closest point of Dall Lake, then to the east bank of the Johnson River at its entrance into Nunavakanukakslak Lake (N 60°59.41' Latitude; W 162°22.14' Longitude), continuing upriver along a line 1/2 mile south and east of, and paralleling a line along the southerly bank of the Johnson River to the confluence of the east bank of Crooked Creek, then continuing upriver to the outlet at Arhymot Lake, then following the south bank east of the Unit 18 border and then north of and including the Eek River drainage¹—1 antlered bull by State registration permit; quotas will be announced annually by the Yukon Delta National Wildlife Refuge Manager. **Up to one antlered bull by Federal registration permit may be announced during a winter season.***

*Sept. 1 – ~~30~~
Oct. 15*

Season may be announced between Dec. 1-Jan. 31

Federal public lands are closed to the taking of moose except by residents of Tuntutuliak, Eek, Napakiak, Napaskiak, Kasigluk, Nunapitchuk, Atmanutlauk, Oscarville, Bethel, Kwethluk, Akiachak, Akiak, Tuluksak, Lower Kalskag, and Kalskag

¹Referred to as the Kuskokwim hunt area throughout the analysis.

Existing State Regulation

Unit 18—Moose

Zone 1: Unit 18 – all Kuskokwim River drainages north and west of a line beginning at the confluence of Whitefish Lake and Ophir Creek at the Unit 18 boundary and continuing south west to the confluence of Tuluksak and Fog Rivers, then southerly to the lower Kisaralik River-Kasigluk River cutoff of the Kisaralik River, then south westerly to the lower Kisaralik River-Kasigluk River cutoff of the Kasigluk River, then south westerly to the Akulikutak River where the snowmachine trail crosses the river from the east side of Three Step Mountain, then westerly to the confluence of Kwethluk River and Magic Creek, then southwesterly to the confluence of Eek River and Middle Fork Eek River, then southwesterly to the Unit 18 boundary at 60° 4.983' N, 161° 37.140' W; and all drainages easterly of a line from the mouth of the Ishkowik River to the closest point of Dall Lake, then to the east bank of the Johnson River at its entrance

1 bull RM615 Sept. 1-Sept. 9¹ excluding male calves by permit available in person in Bethel and villages within the hunt area Aug. 1-25 and online at <http://hunt.alaska.gov> Aug. 1-Oct. 7

into Nunavakanukakslak Lake at 60° 59.41' N, 162° 22.14' W, continuing upriver along a line ½ mile south and east of, and paralleling a line along the southerly bank of the Johnson River to the confluence of the east bank of Crooked Creek, then continuing upriver along the east bank of Crooked Creek to the outlet at Arhymot Lake, then following the south bank of Arhymot Lake easterly to the Unit 18 boundary.

Zone 2: Unit 18 – all Kuskokwim River drainages south and east of a line beginning at the confluence of Whitefish Lake and Ophir Creek at the Unit 18 boundary and continuing southwest to the confluence of Tuluksak and Fog Rivers, then southerly to the lower Kisaralik River-Kasigluk River cutoff of the Kasigluk River, then southwesterly to the lower Kisaralik River-Kasigluk River cutoff of the Kasigluk River, then southwesterly to the Akulikutak River where the snowmachine trail crosses the river from the east side of Three Step Mountain, then westerly to the confluence of Kwethluk River and Magic Creek, then southwesterly to the confluence of Eek River and Middle Fork Eek River, then southwesterly to the Unit 18 boundary at 60° 4.983' N, 161° 37.140'.

1 bull RM615 Sept. 1 –
 excluding Oct. 15
 male calves
 by permit
 available in
 person in
 Bethel and
 villages
 within the
 hunt area
 Aug. 1-25
 and online at
<http://hunt.alaska.gov>
 Aug. 1-Oct.
 7

Nonresidents:

No open
 season

¹full season is Sept. 1-Oct. 15, but ADF&G uses discretionary authority to set dates in Zone 1 each year

Extent of Federal Public Lands

Unit 18 is comprised of 67% Federal public lands and consists of 64% U.S. Fish and Wildlife Service (USFWS) managed lands and 3% Bureau of Land Management (BLM) managed lands

The Unit 18 Kuskokwim moose hunt area is comprised of 57% Federal public lands and consists of 56% USFWS managed lands and 1% BLM managed lands (**Figure 1**).

Zone two within the Kuskokwim moose hunt area is comprised of 82% Federal public lands and consists of 79% USFWS managed lands and 3% BLM managed lands (**Figure 1**).

Customary and Traditional Use Determinations

Residents of Unit 18, Upper Kalskag, Aniak, and Chuathbaluk have a customary and traditional use determination for moose in Unit 18, that portion of the Yukon River drainage upstream of Russian

Mission and that portion of the Kuskokwim River drainage upstream of, but not including, the Tuluksak River drainage.

Residents of Unit 18, Lower Kalskag, and Upper Kalskag have a customary and traditional use determination for moose in Unit 18 remainder

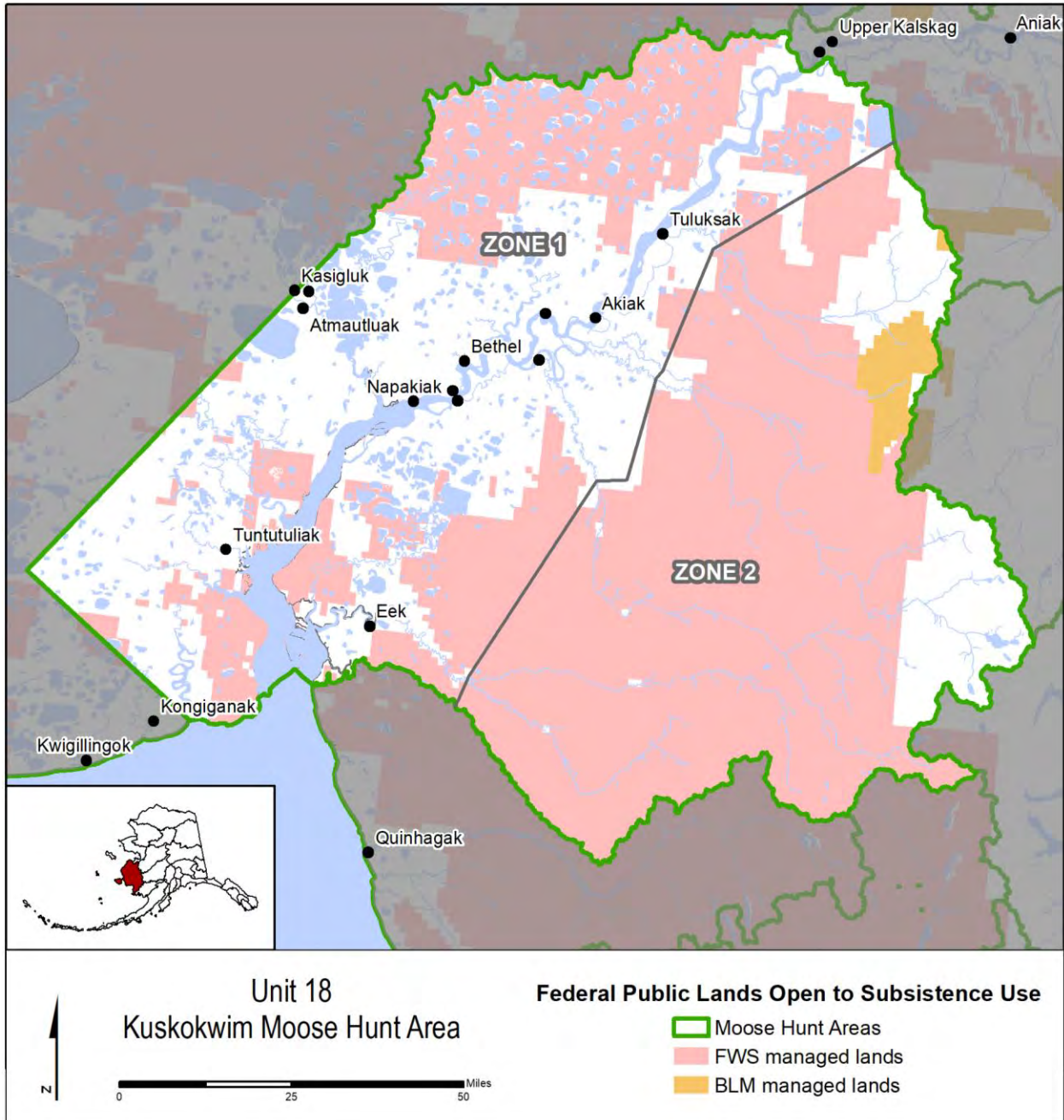


Figure 1. Federal public lands and hunt zones within the Kuskokwim moose hunt area, Unit 18.

Regulatory History

Federal public lands in the Kuskokwim area were closed to non-Federally qualified users in 1991, when the Federal Subsistence Board (Board) acted on Proposal P91-124. Submitted by the Togiak NWR, Proposal P91-124 requested that the moose season in the southern portion of Unit 18, including the Kanektok and Goodnews River drainages, be closed to allow establishment of a harvestable moose population. The Board adopted this proposal with modification to close Federal public lands throughout Unit 18 to moose harvest, except by Federally qualified subsistence users, given low moose densities throughout Unit 18.

Until 2004, Federal and State moose harvest limits for the lower Kuskokwim River area were one bull or one antlered bull, and the fall seasons lasted approximately one month. The State winter season varied widely from a continuous fall/winter season (Sept. 1–Dec. 31) to a 10-day December season and a winter “to be announced” season. The Federal winter season varied from a 10-day season to a “to be announced” season.

Both the Federal and State seasons were closed in the fall of 2004 as part of a coordinated effort to build the Kuskokwim moose population. In 2003, at the request of local residents, the Alaska Board of Game (BOG) established a five-year moratorium on moose hunting under State regulations. The Board adopted Proposal WP04-51 in April 2004 that established a five-year moratorium on Federal public lands. The intent of the moratorium was to promote colonization of underutilized moose habitat. The moratorium was largely instigated by the Lower Kuskokwim Fish and Game Advisory Committee, which worked with the Alaska Department of Fish and Game (ADF&G), USFWS, and area residents to close the moose season for five years or when a population of 1,000 moose was counted in the lower Kuskokwim survey unit. Considerable outreach efforts were made to communicate the impact of the moratorium on the growth potential of the affected moose population to local communities.

In March 2009, the BOG established a registration hunt (RM615), in preparation for ending the moratorium on June 30, 2009. A Sept. 1 – 10 season was established, with a harvest limit of one antlered bull by registration permit. In November 2009, the BOG adopted a proposal that changed the boundary separating the Unit 18 lower Kuskokwim area from the Unit 18 remainder area.

In May 2010, the Board adopted Proposals WP10-58 and WP10-62, with modification to make boundary changes similar to the BOG actions. Adoption of these proposals helped clarify the boundary for moose hunters and law enforcement. At the same meeting, the Board adopted Proposal WP10-54 with modification to reduce the pool of Federally qualified subsistence users eligible to hunt moose on Federal public lands within the lower Kuskokwim hunt area. This was necessary because of the small number of moose available to harvest relative to the large number of subsistence users with a customary and traditional use determination for moose (42 communities including Bethel).

Special action requests were approved to establish Federal moose seasons in the lower Kuskokwim hunt area in 2010 and 2012. In 2010, Emergency Wildlife Special Action WSA10-02 was approved to establish a Sept. 1 – 5 moose season. In 2012, Emergency Wildlife Special Action WSA12-06 was

approved to establish a Sept. 1 – 30 moose season. The harvest quota was set prior to the start of the season and the harvest limit was one antlered bull by State registration permit.

In April 2014, the Board adopted Proposal WP14-27 with modification, establishing a Federal moose season in the Kuskokwim hunt area. The Sept. 1 – 30 season had a harvest limit of one antlered bull by State registration permit. The Yukon Delta NWR manager was delegated the authority to establish an annual quota and close the season once the quota was met.

In August 2018, the Tuluksak Native Community submitted Emergency Special Action Request WSA18-02, requesting that the Board open the moose season early in the Kuskokwim hunt area to accommodate a food shortage emergency. The Board approved this request with modification to open an Aug. 18 – 31 emergency season only to residents of Tuluksak, with a quota of seven antlered bulls by Federal registration permit.

In 2020, the BOG adopted Proposal 7 as amended to change the State season dates for the RM615 moose hunt to Sept. 1-Oct.15 with a harvest limit of one bull, excluding the take of male calves. The first amendment to Proposal 7 was to extend the season from Sept. 1 – Sept. 30 to Sept. 1 – Oct. 15. Consideration was made to accommodate the holiday and teacher in-service days by keeping the season open date the same to allow continued opportunity for youth hunts. The second amendment to Proposal 7 changed the harvest limit from one antlered bull to one bull excluding the take of male calves. This was done to allow for proxy hunt but continue to prohibit the potential harvest of calves or incidental harvest of cows (ADF&G. 2020).

In April 2020, the Board considered Closure Review WCR20-38 and Proposal WP20-35 concerning moose in the Kuskokwim hunt area. The Board voted to maintain status quo on the Federal lands closure reviewed by WCR20-38 because demand for moose by Federally qualified subsistence user exceeds sustainable harvest levels. Proposal WP20-35 requested the addition of a may-be-announced season between Dec. 1 – Jan. 31. The Board rejected this proposal as part of the consensus agenda because of conservation concerns. While the Council had submitted the proposal, they opposed it to allow more time for the moose population to fully recover following the harvest moratorium. Additionally, the Council noted that snowmachine access during a winter season could dramatically increase harvest pressure in the area, including accidental harvest of cows, further hampering recovery of the population.

In July 2020, the Board approved Wildlife Special Action WSA20-05, which requested extending the fall moose season in the Kuskokwim hunt area of Unit 18 from Sept. 1 – 30 to Sept. 1 – Oct. 7 for the 2020/21 regulatory year. Yukon Delta NWR submitted, and the Board approved the proposal to provide more subsistence hunting opportunity since moose harvest quotas were not being met.

ADF&G and the Yukon Delta NWR cooperatively manage the Kuskokwim hunt area in two zones (**Figure 1**). Zone 1 is primarily non-Federal lands, and quotas are set by ADF&G. Local subsistence users can easily access Zone 1 by boat along the Kuskokwim River. Therefore, quotas are quickly met, and seasons are fixed dates calculated by ADF&G to determine what date harvest objectives are

expected to be met before each season. Zone 2 is primarily Federal public lands, and the Yukon Delta NWR sets quotas. Zone 2 is much more difficult to access, and quotas are not usually met.

Current Events

The Yukon Delta NWR submitted Wildlife Special Action WSA21-03, which requests the same extension to the fall moose season as Proposal WP22-44, but does not propose to establish a winter season. The Board will act on this request during their August 2021 work session.

Biological Background

Moose are believed to have begun colonization of the Yukon-Kuskokwim Delta in the 1940s (Perry 2014). By the 1990s, when the Federal public lands closure was initiated, moose densities throughout much of Unit 18 were very low. Though established populations existed in the far eastern portions of Unit 18, moose were only sparsely distributed throughout much of the unit. Harvested moose were likely immigrants from other areas, rather than part of a local breeding population (FSB 1991), and hunting pressure was effective in limiting growth of the moose population along the Kuskokwim River corridor (Perry 2014). The 2004 – 2008 hunting moratorium was effective in establishing a harvestable population, and the most recent indicators suggest that the population along the Kuskokwim River main stem and in its tributaries continues to grow.

Prior to 2020, the most recent population survey of the lower Kuskokwim survey area, which includes the main stem riparian corridor between Kalskag and Kwethluk, occurred in 2015. At that time, the population was estimated to be 1,378 moose, or 1.6 moose/mile² in Zone 1 (**Figure 2**). This represents an annual growth rate of 20% between 2011 and 2015. The population estimate for Zone 2 was 508 moose (YKDRAC 2019). At that time, the Kuskokwim moose population remained below the State's population objective of at least 2,000 moose in this area (Perry 2014).

Lack of snow cover in recent years precluded additional population surveys between 2015 and 2020. The survey completed in 2020 shows an increase of the moose populations in both zones. The estimated mid-point population in Zone 1 was 3,220 moose, and the minimum count in Zone 2 was 789 moose, which exceeds State population objectives (**Figure 2**) (Jones 2021, pers. comm., YKDRAC 2019). Browse surveys indicate that the population in Zone 1 is potentially reaching a point that will limit or stop growth, and Zone 2 is about one-half of what it could be (Jones 2021, pers. comm.).

Composition estimates for the main stem were obtained in 2020, when there were 25 bulls:100 cows (ADF&G 2020). Bull:cow ratios, which were quite high during the harvest moratorium, declined when harvest resumed in 2009, but remained consistently above the minimum objective of 30 bulls:100 cows until 2020 (**Table 1**). The recent decline in the bull:cow ratio follows an increase in reported harvest and a liberal hunting season in 2019. Unreported harvest, increased winter mortality, and misclassification of young bulls with small antlers during surveys may also have contributed to the lower ratio in 2020. Bull:cow ratios in the Kuskokwim tributaries (Zone 2) are very high, although surveys have occurred infrequently. In 2015 and 2020, ratios were 83 and 42 bulls:100 cows, respectively (Oster 2020, Jones 2021, pers. comm.).

Fall calf:cow ratios of < 20 calves:100 cows, 20-30 calves:100 cows, and > 30-40 calves:100 cows may indicate declining, stable, and growing moose populations, respectively (Stout 2010). Between 2007 and 2020, calf:cow ratios in the main stem survey area (Zone 1) ranged from 45-73 calves:100 cows (**Table 1**; Jones 2018, pers. comm., ADF&G 2020, Oster 2020). In 2015 and 2020, calf:cow ratios in the Kuskokwim tributaries (Zone 2) were 62 and 40 calves:100 cows, respectively (Oster 2020). High calf:cow ratios indicate a growing moose population. Twinning rates, which provide an index of nutrition, are also high, averaging 43% between 2015 and 2019 (YKDRAC 2019, ADF&G 2020).

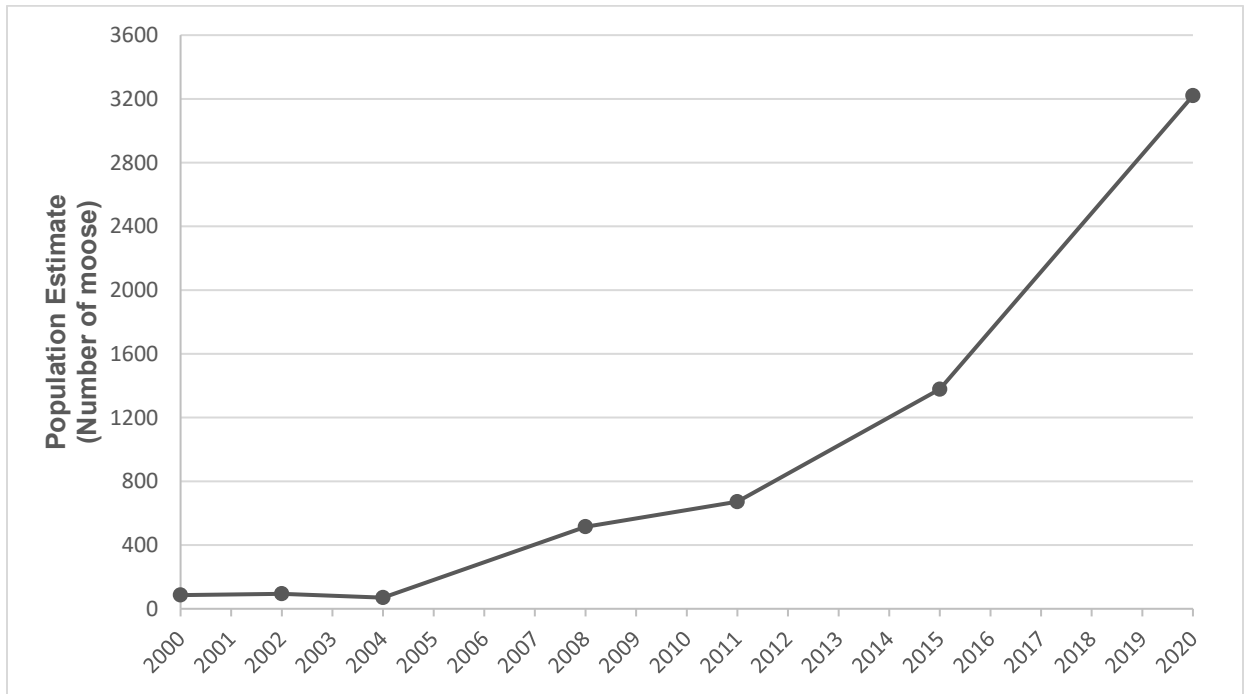


Figure 2. Estimated moose population size along the main stem of the Kuskokwim River, 2000 – 2020 (Perry 2014; Jones 2018, pers. comm.; Jones 2021, pers. comm.)

Table 1. Composition estimates for moose along the main stem of the Kuskokwim River, 2007 – 2020 (YDNWR 2015; Jones 2018, pers. comm.; ADF&G 2020; Oster 2020).

Year	Bulls:100 cows	Calves:100 cows
2007	98	73
2009	52	49
2010	51	49
2011	50	49
2013	41	72
2015	73	53
2016	70	56
2019	43	49
2020	25	45

Harvest History

Following the harvest moratorium, moose harvest on non-Federal lands was allowed under State regulation, beginning in 2009. In 2010, harvest on Federal public lands was opened to a subset of Federally qualified subsistence users, including residents of Tuntutuliak, Eek, Napakiak, Napaskiak, Kasigluk, Nunapitchuk, Atmautluak, Oscarville, Bethel, Kwethluk, Akiachak, Akiak, Tuluksak, Lower Kalskag, and Kalskag. In this analysis, this user group will be referred to as local users.

Since 2009, reported harvest has averaged 159 moose annually (ADF&G 2019a). Notably, reported harvest has increased, doubling between 2014 and 2017 (**Figure 3**). Local users have taken 95% of the reported moose harvest in the Kuskokwim hunt area since 2009, with 30% of the harvest attributable to residents of Bethel. However, non-local use is increasing, from two harvest reports in 2013 to 16 in 2017 (**Figure 3**). Non-local users that report harvesting moose are primarily Federally qualified subsistence users from coastal communities of Unit 18, but also include a few users from southcentral Alaska (ADF&G 2019a). About 30 moose, including around 20 cows are harvested each year for funerals and potlatches in Zone 1 (YKDRAC 2019; Moses 2020, pers. comm.).

Despite increases in quotas and harvest, demand still outweighs moose availability. Since 2009, an average of approximately 1,450 hunters have obtained permits to harvest moose in the Kuskokwim hunt area each year, but only 10% of permit holders successfully harvested moose (ADF&G 2019a). The disparity between demand and the relatively small quotas has routinely resulted in emergency closure of the State season within days of its opening (**Table 2**). This has resulted in some frustration among locals, who note that short unpredictable seasons make planning difficult. In response to this, ADF&G no longer uses quotas or closes Zone 1 with emergency closures. Fixed dates determined by estimated time needed to reach the set harvest objective is released prior to the start of each season (Jones 2021, pers. comm.). Local residents have also commented on the challenges of hunting in early September in recent years, given warm conditions that make proper meat care difficult. To this end, many subsistence users have advocated for a later moose season (YKDRAC 2017b).

In an effort to better serve users in an area of checkerboard land status, State and Federal managers adjusted the structure of the hunt in 2017, introducing a zone-based hunt (**Figure 1**). An important feature of the zones is that, while they correspond roughly to State and Federal lands, they are delineated by easily identifiable geographical features (e.g. river confluences). Each of the two zones is managed with its own harvest objective. Zone 1, which is comprised primarily of State managed lands, is located along the main stem of the Kuskokwim River. The season and harvest objective for the main stem hunt are managed by ADF&G. Zone 2 is comprised primarily of Federal public lands, including those in the Tuluksak, Kisaralik, Kasigluk and Eek river drainages (“tributaries”). The season and harvest quota in the tributary hunt is managed by the Yukon Delta NWR (Rearden 2018, pers. comm.; YKDRAC 2017a).

There is more demand for moose in Zone 1, along the main stem, compared to Zone 2, in the tributaries. This is evidenced by the rate at which the quota is met within each zone, and the corresponding season length. On average, the main stem hunt has been open fewer than six days annually from 2011 through 2018, and the quota has been met or exceeded most years. Since ADF&G

has changed to the fixed season using the harvest objective method, Zone 1 hunt was open for 11 days in 2020 and will be open 9 days in 2021 (Jones 2021, pers. comm.). For the hunt in the tributaries, the quota has only been met one time, in 2014, despite increasing season lengths (**Tables 2 and 3**). Local managers report that hunting in the tributaries is difficult, requiring specialized boats, longer travel times, and more fuel. Heavy vegetation along the banks contributes to the difficulty. It is believed that the unmet quota is a function of these difficulties, rather than lack of need for moose meat (YKDRAC 2017a, YKDRAC 2017b, Rearden 2018, pers. comm.).

ADF&G is currently managing the Kuskokwim moose population for continued growth and advises maintaining harvests within quotas and for bulls-only. However, ADF&G expects regulations in the Kuskokwim hunt area will be liberalized over the next five years if the moose population approaches carrying capacity as indicated by browse removal surveys (YKDRAC 2019).

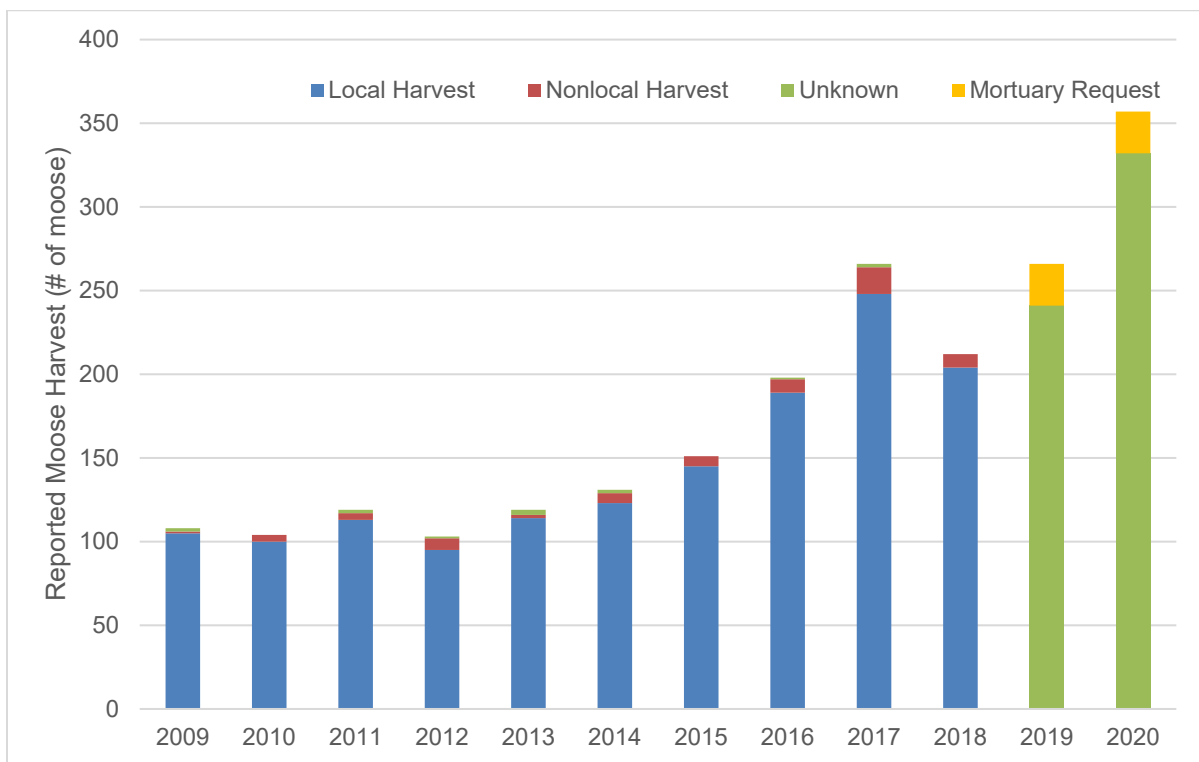


Figure 3. Reported moose harvest by RM615 in the Kuskokwim hunt area, 2009 – 2020 (ADF&G 2019a, Oster 2020, Jones 2021, pers. comm.). Note: 2019 and 2020 data does not distinguish between local and nonlocal harvest.

Table 2. State and Federal moose seasons, 2011 – 2021 (Rearden 2020, pers. comm.; ADF&G 2019b; Jones 2019, pers. comm. Jones 2021, pers. comm.; YKDRAC 2019).

Year	Scheduled season dates		Actual season dates		Actual season length (number of days)	
	State	Federal	State	Federal	State	Federal
2011	Sept. 1 - 10	Sept. 1 - 5	Sep 1 - 6	Sep 1 - 6	6	6
2012	Sept. 1 - 10	Sept. 1 - 10	Sept. 1 - 8	Sept. 1 - 8	8	8
2013	Sept. 1 - 10	Sept. 1 - 10	Sept. 1 - 6	Sept. 1 - 6	6	6
2014	Sept. 1 - 10	Sept. 1 - 10	Sept. 1 - 4	Sept. 1 - 4	4	4
2015	Sept. 1 - 10	Sept. 1 - 8	Sept. 1 - 4	Sept. 1 - 8	4	8
2016	Sept. 1 - 10	Sept. 1 - 15	Sept. 1 - 5	Sept. 1 - 15	5	15
2017 ^a	Sept. 1 - 10	Sept. 1 - 25	Sept. 1 - 5	Sept. 1 - 25	5	25
2018 ^a	Sept. 1 - 10	Sept. 1 - 30	Sept. 1 - 7	Sept. 1 - 30	7	30
2019 ^a	Sept. 1 - 7	Sept. 1 - 30	Sept. 1 - 7	Sept. 1 - 30	7	30
2020 ^a	Sept. 1 - 11	Sept. 1-Oct. 7	Sept. 1 - 11	Sept. 1-Oct. 7	11	37
2021 ^a	Sept. 1 - 9	Sept. 1 - 30	Sept. 1 - 9		9	

^a The State season corresponds to Zone 1 and the Federal season corresponds to Zone 2.

Table 3. State and Federal moose quotas and harvest, 2011 – 2018 (Rearden 2018, pers. comm.; ADF&G 2019b; Jones 2019, pers. comm.; Moses 2020, pers. comm.; ADF&G 2020; Oster 2020).

Year	Quota (number of moose)			Harvest (number of moose)			
	State	Federal	Total	State	Federal	Unknown	Total
2011	81	19	100	93	11	15	119
2012	81	19	100	82	17	4	103
2013	81	19	100	89	21	9	119
2014	81	19	100	93	15	23	131
2015	110	45	155	105	31	15	151
2016	150	90	240	136	44	14	194
2017 ^a	170	110	280	186	80	0	266
2018 ^a	170	110	280	142	70	0	212
2019 ^a	180-200	110	290-310	160	72	-	232
2020 ^a	170	110	280	215	90		305

^a The State quota corresponds to Zone 1 and the Federal quota corresponds to Zone 2.

Other Alternatives Considered

One alternative considered was to create two separate hunt areas corresponding to Zones 1 and 2, similar to State regulations. This could reduce user confusion and regulatory complexity as the zones are managed by different harvest quotas and usually have different seasons. The Council may want to further consider this alternative.

Another alternative considered was to delegate authority to the Yukon Delta NWR manager to decide the number of Federal permits to issue each year during the winter season. This would limit harvest pressure in Zone 2 during the winter when access via snowmachine can be relatively easy and would help ensure sustainable harvest levels and that the harvest quota is not exceeded. This alternative would require modification of the delegation of authority letter (**Appendix 1**).

Effects of the Proposal

If WP22-43 is adopted, the Yukon Delta NWR manager would be delegated authority to expand the moose harvest quota in Zone 1 if the water levels are too low during the fall to access Zone 2. As the Zone 1 harvest is usually met in less than a week, there is high potential for overharvest of moose in Zone 1 if the harvest objective is increased. Additionally, the 2020 bull:cow ratios in Zone 1 were low and below State management objectives, indicating no surplus bulls for harvest. However, if the Federal manager did increase the harvest quota in Zone 1, it would only apply to Federal public lands, which are very limited in Zone 1.

If WP22-44 is adopted, the moose season in the Kuskokwim hunt area of Unit 18 would be extended 15 days, closing October 15 instead of September 30 and a winter season would be announced if the fall harvest quota was not met. This would increase hunting opportunity for Federally qualified subsistence users and could increase total moose harvest in this area. If water levels are too low in the fall to access Zone 2, a winter season could be announced, providing easier access via snowmachine, which would also address the concerns expressed in WP22-43. Alternatively, if the harvest quota is met in the fall, then the Yukon Delta NWR manager would not announce a winter season.

While the Federal season applies to the entire Kuskokwim hunt area, the Federal hunt requires use of a State registration permit, which divides the area into Zones 1 and 2. Harvest quotas in Zone 1 are generally met in less than one week, and seasons are closed. Therefore, the season extension proposed by WP22-44 functionally only applies to Zone 2, where harvest quotas are not being met due to difficulty in accessing the area. Since 2017, the Federal in-season manager has announced Zone 2 harvest quotas of 110 moose; however, an annual average of 78 moose have been reported harvested. Extending the season by two weeks could help meet harvest quotas. In 2020, the Board extended the fall season by one week to October 7 via special action, resulting in an increased harvest of 90 moose (**Table 3**). Extending the season by two weeks could help achieve harvest quotas and provide additional harvest opportunity.

State seasons in Zone 2 are now Sept. 1-Oct. 15. Adoption of this proposal would align State and Federal seasons, reducing regulatory complexity and user confusion. Adoption of this proposal would

require the creation and issuance of an additional Federal registration permit during the winter season, if announced. Timely reporting of successful harvest would be important to maintain harvest objectives.

During the Council’s deliberation of Proposal WP20-35 at their Fall 2019 meeting, ADF&G suggested increasing harvest opportunity by extending the fall season into mid-October instead of establishing a winter to-be-announced season, which could result in quotas quickly being exceeded due to easy access by snowmachine. ADF&G stated that extending the season into October would likely achieve harvest quotas at a manageable pace. Concerns expressed during the meeting also included inadvertent cow harvest during a winter season, hampering recovery of the moose population, and difficulty in managing a winter hunt and harvest quota when as many as 50 moose have been reported harvested in a single day during the fall season. The ADF&G area biologist also noted that the population is not so large that it is a biological necessity to meet the quota each year, and that the Kuskokwim drainage can likely support two- to three-times the number of moose currently observed. (YKDRAC 2019).

OSM PRELIMINARY CONCLUSION

Oppose Proposal WP22-43 and **Support** Proposal WP22-44 **with modification** to clarify the regulatory language and to delegate authority to the Yukon Delta NWR manager to announce the winter season via delegation of authority letter only (**Appendix 1**).

The modified regulation should read:

Unit 18—Moose

*Unit 18 – that portion east of a line running from the mouth of the Ishkowitz River to the closest point of Dall Lake, then to the east bank of the Johnson River at its entrance into Nunavakanukakslak Lake (N 60°59.41' Latitude; W162°22.14' Longitude), continuing upriver along a line 1/2 mile south and east of, and paralleling a line along the southerly bank of the Johnson River to the confluence of the east bank of Crooked Creek, then continuing upriver to the outlet at Arhymot Lake, then following the south bank east of the Unit 18 border and then north of and including the Eek River drainage—I antlered bull by State registration permit **during the fall season**;*

*Sept. 1 – ~~30~~
Oct. 15*

***Season may be announced
Dec. 1-Jan. 31***

OR

***I antlered bull by Federal registration permit during a winter season.**
~~quotas will be announced annually by the Yukon Delta National Wildlife Refuge Manager.~~*

Federal public lands are closed to the taking of moose except by residents

of Tuntutuliak, Eek, Napakiak, Napaskiak, Kasigluk, Nunapitchuk, Atmanutlauk, Oscarville, Bethel, Kwethluk, Akiachak, Akiak, Tuluksak, Lower Kalskag, and Kalskag

Justification

Conservation concerns exist for Proposal WP22-43. Harvest quotas in Zone 1 are quickly met and low bull:cow ratios in Zone 1 indicate no surplus bulls are available for harvest. The may-be-announced winter season proposed by WP22-44 provides an alternative approach to increasing subsistence harvest opportunity if water levels are too low to access Zone 2 during the fall hunt, while not creating conservation concerns.

Proposal WP22-44 provides additional opportunity for Federally qualified subsistence users. Minimal conservation concerns exist as harvest is managed through quotas, which are not being met. The in-season manager would close the season if quotas are met. The harvest limit of one antlered bull helps ensure that cows will not be taken inadvertently. Delegating additional authority to the in-season manager via a delegation of authority letter provides management flexibility and simplifies unit specific regulations.

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APPENDIX 1

Refuge Manager
 Yukon Delta National Wildlife Refuge
 P.O. Box 346
 Bethel, Alaska 99559

Dear Refuge Manager:

This letter delegates specific regulatory authority from the Federal Subsistence Board (Board) to the manager of the Yukon Delta National Wildlife Refuge to issue emergency or temporary special actions if necessary to ensure the conservation of a healthy wildlife population, to continue subsistence uses of wildlife, for reasons of public safety, or to assure the continued viability of a wildlife population. This delegation only applies to the Federal public lands subject to Alaska National Interest Lands Conservation Act (ANILCA) Title VIII jurisdiction within Unit 18, that portion east of a line running from the mouth of the Ishkowiik River to the closest point of Dall Lake, then to the east bank of the Johnson River at its entrance into Nunavakankakslak Lake (N 60° 59.412 Latitude; W 162° 22.142 Longitude), continuing upriver along a line ½ mile south and east of, and paralleling a line along the southerly bank of the Johnson River to the confluence of the east bank of Crooked Creek, then continuing upriver to the outlet of Arhymot Lake, then following the south bank east of the Unit 18 border and then north of and including the Eek River drainage for the management of moose on these lands.

It is the intent of the Board that actions related to management of moose by Federal officials be coordinated, prior to implementation, with the Alaska Department of Fish and Game (ADF&G), representatives of the Office of Subsistence Management (OSM), and the Chair of the affected Council(s) to the extent possible. The Office of Subsistence Management will be used by managers to facilitate communication of actions and to ensure proposed actions are technically and administratively aligned with legal mandates and policies. Federal managers are expected to work with managers from the State and other Federal agencies, the Council Chair or alternate, local tribes, and Alaska Native Corporations to minimize disruption to subsistence resource users and existing agency programs, consistent with the need for special action.

DELEGATION OF AUTHORITY

1. Delegation: The manager of the Yukon Delta National Wildlife Refuge is hereby delegated authority to issue emergency or temporary special actions affecting moose on Federal lands as outlined under the Scope of Delegation. Any action greater than 60 days in length (temporary special action) requires a public hearing before implementation. Special actions are governed by Federal regulation at 36 CFR 242.19 and 50 CFR 100.19.

2. Authority: This delegation of authority is established pursuant to 36 CFR 242.10(d)(6) and

50 CFR 100.10(d)(6), which state: “The Board may delegate to agency field officials the authority to set harvest and possession limits, define harvest areas, specify methods or means of harvest, specify permit requirements, and open or close specific fish or wildlife harvest seasons within frameworks established by the Board.”

3. Scope of Delegation: The regulatory authority hereby delegated is limited to the following authorities within the limits set by regulation at 36 CFR 242.26 and 50 CFR 100.26:

- To close the **fall** season, **open and close a season between December 1 and January 31**, and determine annual quotas for moose on Federal public lands ~~in Unit 18, that portion east of a line running from the mouth of the Ishkowiik River to the closest point of Dall Lake, then to the east bank of the Johnson River at its entrance into Nunavakankakslak Lake (N 60° 59.412 Latitude; W 162° 22.142 Longitude), continuing upriver along a line ½ mile south and east of, and paralleling a line along the southerly bank of the Johnson River to the confluence of the east bank of Crooked Creek, then continuing upriver to the outlet of Arhymot Lake, then following the south bank east of the Unit 18 border and then north of and including the Eek River drainage.~~

This delegation also permits you to close and reopen Federal public lands to nonsubsistence hunting, but does not permit you to specify methods and means, permit requirements, or harvest and possession limits for State-managed hunts.

This delegation may be exercised only when it is necessary to conserve moose populations, to continue subsistence uses, for reasons of public safety, or to assure the continued viability of the populations. All other proposed changes to codified regulations, such as customary and traditional use determinations or adjustments to methods and means of take, shall be directed to the Board.

The Federal public lands subject to this delegated authority are those within Unit 18 that portion east of a line running from the mouth of the Ishkowiik River to the closest point of Dall Lake, then to the east bank of the Johnson River at its entrance into Nunavakankakslak Lake (N 60° 59.412 Latitude; W 162° 22.142 Longitude), continuing upriver along a line ½ mile south and east of, and paralleling a line along the southerly bank of the Johnson River to the confluence of the east bank of Crooked Creek, then continuing upriver to the outlet of Arhymot Lake, then following the south bank east of the Unit 18 border and then north of and including the Eek River drainage.

4. Effective Period: This delegation of authority is effective from the date of this letter and continues until superseded or rescinded.

5. Guidelines for Delegation: You will become familiar with the management history of the wildlife species relevant to this delegation in the region, with current State and Federal regulations and management plans, and be up-to-date on population and harvest status information. You will provide subsistence users in the region a local point of contact about Federal subsistence issues and regulations and facilitate a local liaison with State managers and other user groups.

You will review special action requests or situations that may require a special action and all supporting information to determine (1) consistency with 50 CFR 100.19 and 36 CFR 242.19, (2) if the request/situation falls within the scope of authority, (3) if significant conservation problems or subsistence harvest concerns are indicated, and (4) what the consequences of taking an action or no action may be on potentially affected Federally qualified subsistence users and non-Federally qualified users. Requests not within your delegated authority will be forwarded to the Board for consideration. You will maintain a record of all special action requests and rationale for your decision. A copy of this record will be provided to the Administrative Records Specialist in OSM no later than sixty days after development of the document.

For management decisions on special actions, consultation is not always possible, but to the extent practicable, two-way communication will take place before decisions are implemented. You will also establish meaningful and timely opportunities for government-to-government consultation related to pre-season and post-season management actions as established in the Board's Government-to-Government Tribal Consultation Policy (Federal Subsistence Board Government-to-Government Tribal Consultation Policy 2012 and Federal Subsistence Board Policy on Consultation with Alaska Native Claim Settlement Act Corporations 2015).

You will immediately notify the Board through the Assistant Regional Director for OSM, and coordinate with the Chair(s) or alternate of the affected Council(s), local ADF&G managers, and other affected Federal conservation unit managers concerning emergency and temporary special actions being considered. You will ensure that you have communicated with OSM to ensure the special action is aligned with ANILCA Title VIII, Federal Subsistence regulations and policy, and that the perspectives of the Chair(s) or alternate of the affected Council(s), OSM, and affected State and Federal managers have been fully considered in the review of the proposed special action.

If the timing of a regularly scheduled meeting of the affected Council(s) permits without incurring undue delay, you will seek Council recommendations on the proposed temporary special action(s). If the affected Council(s) provided a recommendation, and your action differs from that recommendation, you will provide an explanation in writing in accordance with 50 CFR 100.10(e)(1) and 36 CFR 242.10(e)(1).

You will issue decisions in a timely manner. Before the effective date of any decision, reasonable efforts will be made to notify the public, OSM, affected State and Federal managers, law enforcement personnel, and Council members. If an action is to supersede a State action not yet in effect, the decision will be communicated to the public, OSM, affected State and Federal managers, and the local Council members at least 24 hours before the State action would be effective. If a decision to take no action is made, you will notify the proponent of the request immediately. A summary of special action requests and your resultant actions must be provided to the coordinator of the appropriate Council(s) at the end of each calendar year for presentation to the Council(s).

You may defer a special action request, otherwise covered by this delegation of authority, to the Board in instances when the proposed management action will have a significant impact on a large number of

Federal subsistence users or is particularly controversial. This option should be exercised judiciously and may be initiated only when sufficient time allows for it. Such deferrals should not be considered when immediate management actions are necessary for conservation purposes. The Board may determine that a special action request may best be handled by the Board, subsequently rescinding the delegated regulatory authority for the specific action only.

6. Support Services: Administrative support for regulatory actions will be provided by the Office of Subsistence Management.

Sincerely,

Anthony Christianson
Chair

Enclosures

cc: Federal Subsistence Board

Assistant Regional Director, Office of Subsistence Management
Deputy Assistant Regional Director, Office of Subsistence Management
Subsistence Policy Coordinator, Office of Subsistence Management
Wildlife Division Supervisor, Office of Subsistence Management
Subsistence Council Coordinator, Office of Subsistence Management
Chair, Yukon-Kuskokwim Delta Subsistence Regional Advisory Council
Deputy Commissioner, Alaska Department of Fish and Game
Special Projects Coordinator Assistant to the Commissioner, Alaska Department of Fish and

Game

Interagency Staff Committee
Administrative Record

WP22-47 Executive Summary	
General Description	Proposal WP22-47 requests that calf harvest be permitted for caribou in Unit 22. <i>Submitted by: Western Arctic Caribou Herd Working Group</i>
Proposed Regulation	See page 123
OSM Preliminary Conclusion	Support
Yukon-Kuskokwim Delta Subsistence Regional Advisory Council Recommendation	
Western Interior Alaska Subsistence Regional Advisory Council Recommendation	
Seward Peninsula Subsistence Regional Advisory Council Recommendation	
Northwest Arctic Subsistence Regional Advisory Council Recommendation	
North Slope Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

**DRAFT STAFF ANALYSIS
WP22-47**

ISSUES

Proposal WP22-47 submitted by the Western Arctic Caribou Herd (WACH) Working Group requests that calf harvest be permitted for caribou in Unit 22.

DISCUSSION

The proponent states that the intent of this proposal is to allow for the harvest of orphaned calves, and that this regulation change would align Federal and State regulations.

Existing Federal Regulation

Unit 22—Caribou

<i>Unit 22B, that portion west of Golovnin Bay and west of a line along the west bank of the Fish and Niukluk Rivers to the mouth of the Libby River, and excluding all portions of the Niukluk River drainage upstream from and including the Libby River drainage—5 caribou per day by State registration permit. Calves may not be taken</i>	<i>Oct. 1-Apr. 30. May 1-Sep. 30, a season may be announced</i>
<i>Units 22A, that portion north of the Golsovia River drainage, 22B remainder, that portion of Unit 22D in the Kuzitrin River drainage (excluding the Pilgrim River drainage), and the Agiapuk River drainages, including the tributaries, and Unit 22E, that portion east of and including the Tin Creek drainage—5 caribou per day by State registration permit. Calves may not be taken</i>	<i>July 1-June 30</i>
<i>Unit 22A, remainder—5 caribou per day by State registration permit. Calves may not be taken</i>	<i>July 1-June 30, season may be announced</i>
<i>Unit 22D, that portion in the Pilgrim River drainage—5 caribou per day by State registration permit. Calves may not be taken</i>	<i>Oct. 1-Apr. 30. May 1-Sep. 30, season may be announced</i>
<i>Units 22C, 22D remainder, 22E remainder—5 caribou per day by State registration permit. Calves may not be taken</i>	<i>July 1-June 30, season may be announced</i>

Proposed Federal Regulation

Unit 22—Caribou

<p><i>Unit 22B, that portion west of Golovnin Bay and west of a line along the west bank of the Fish and Niukluk Rivers to the mouth of the Libby River, and excluding all portions of the Niukluk River drainage upstream from and including the Libby River drainage—5 caribou per day by State registration permit. Calves may not be taken</i></p>	<p><i>Oct. 1-Apr. 30. May 1-Sep. 30, a season may be announced</i></p>
<p><i>Units 22A, that portion north of the Golsovia River drainage, 22B remainder, that portion of Unit 22D in the Kuzitrin River drainage (excluding the Pilgrim River drainage), and the Agiapuk River drainages, including the tributaries, and Unit 22E, that portion east of and including the Tin Creek drainage—5 caribou per day by State registration permit. Calves may not be taken</i></p>	<p><i>July 1-June 30</i></p>
<p><i>Unit 22A, remainder—5 caribou per day by State registration permit. Calves may not be taken</i></p>	<p><i>July 1-June 30, season may be announced</i></p>
<p><i>Unit 22D, that portion in the Pilgrim River drainage—5 caribou per day by State registration permit. Calves may not be taken</i></p>	<p><i>Oct. 1-Apr. 30. May 1-Sep. 30, season may be announced</i></p>
<p><i>Units 22C, 22D remainder, 22E remainder—5 caribou per day by State registration permit. Calves may not be taken</i></p>	<p><i>July 1-June 30, season may be announced</i></p>

Existing State Regulation

Unit 22—Caribou

<p><i>22A, north of the Golsovia River drainage</i></p>	<p><i>Residents—Twenty caribou total, up to 5 per day. Permit available online at http://hunt.alaska.gov or in person in Nome and license vendors within Unit 22 beginning June 22</i></p>	<p><i>Bulls</i></p>	<p><i>RC800</i></p>	<p><i>no closed season</i></p>
		<p><i>Cows</i></p>	<p><i>RC800</i></p>	<p><i>July 1-Mar. 31</i></p>
	<p><i>Nonresidents—one bull</i></p>		<p><i>HT</i></p>	<p><i>Aug. 1-Sept. 30</i></p>

Unit 22—Caribou

<i>22A remainder</i>	<p><i>Residents—Twenty caribou total, up to 5 per day. Bulls may not be taken Oct 15-Jan 31, and cows may not be taken Apr 1-Aug 31. Permit available online at http://hunt.alaska.gov or in person in Nome and license vendors within Unit 22 beginning June 22</i></p>	RC800	<i>May be announced</i>	
	<i>Nonresidents—one bull</i>	HT	<i>May be announced</i>	
<p><i>Unit 22B, west of Golovnin Bay, west of the west banks of Fish and Niukluk rivers below the Libby river (excluding the Libby River drainage and Niukluk River drainage above the mouth of the Libby River)</i></p>	<p><i>Residents—Twenty caribou total, up to 5 per day. Permit available online at http://hunt.alaska.gov or in person in Nome and license vendors within Unit 22 beginning June 22</i></p>	Bulls	RC800	<i>Oct. 1-Apr. 30</i>
		Cows	RC800	<i>Oct. 1-Mar. 31</i>
	<p><i>Residents- Twenty caribou total, up to 5 per day. Cows may not be taken Apr 1-Aug 31. Permit available online at http://hunt.alaska.gov or in person in Nome and license vendors within Unit 22 beginning June 22</i></p>		RC800	<i>may be announced</i>
	<i>Nonresidents: one bull</i>		HT	<i>may be announced</i>
<i>22B remainder</i>	<p><i>Residents—Twenty caribou total, up to 5 per day. Permit available online at http://hunt.alaska.gov or in person in Nome and license vendors within Unit 22 beginning June 22</i></p>	Bulls	RC800	<i>no closed season</i>
		Cows	RC800	<i>July 1-Mar. 31</i>
	<i>Nonresidents—one bull</i>		HT	<i>Aug. 1-Sept. 30</i>

Unit 22—Caribou

22C	<p><i>Residents—Twenty caribou total, up to 5 per day. Bulls may not be taken Oct 15-Jan 31, and cows may not be taken Apr 1-Aug 31. Permit available online at http://hunt.alaska.gov or in person in Nome and license vendors within Unit 22 beginning June 22</i></p>	RC800	<p><i>May be announced</i></p>	
	<p><i>Nonresidents—one bull</i></p>	HT	<p><i>May be announced</i></p>	
22D Pilgrim River drainage	<p><i>Residents—Twenty caribou total, up to 5 per day. Permit available online at http://hunt.alaska.gov or in person in Nome and license vendors within Unit 22 beginning June 22</i></p>	Bulls	RC800	<p><i>Oct. 1-Apr. 30</i></p>
		Cows	RC800	<p><i>Oct. 1-Mar. 31</i></p>
	<p><i>Residents- Twenty caribou total, up to 5 per day. Cows may not be taken Apr 1-Aug 31. Permit available online at http://hunt.alaska.gov or in person in Nome and license vendors within Unit 22 beginning June 22</i></p>		RC800	<p><i>may be announced</i></p>
	<p><i>Nonresidents: one bull</i></p>		HT	<p><i>may be announced</i></p>
<p><i>22D, in the Kuzitrin River drainage (excluding the Pilgrim River drainage) and the Agiapuk river drainage</i></p>	<p><i>Residents—Twenty caribou total, up to 5 per day. Permit available online at http://hunt.alaska.gov or in person in Nome and license vendors within Unit 22 beginning June 22</i></p>	Bulls	RC800	<p><i>no closed season</i></p>
		Cows	RC800	<p><i>July 1-Mar. 31</i></p>
	<p><i>Nonresidents—one bull</i></p>		HT	<p><i>Aug. 1-Sept. 30</i></p>

Unit 22—Caribou

<i>22D remainder</i>	<i>Residents—Twenty caribou total, up to 5 per day. Bulls may not be taken Oct 15-Jan 31, and cows may not be taken Apr 1-Aug 31. Permit available online at http://hunt.alaska.gov or in person in Nome and license vendors within Unit 22 beginning June 22</i>	<i>RC800</i>	<i>May be announced</i>
	<i>Nonresidents—one bull</i>	<i>HT</i>	<i>May be announced</i>
<i>22E, east of and including the Sanaguich River drainage</i>	<i>Residents—Twenty caribou total, up to 5 per day. Permit available online at http://hunt.alaska.gov or in person in Nome and license vendors within Unit 22 beginning June 22</i>	<i>Bulls</i>	<i>RC800 no closed season</i>
		<i>Cows</i>	<i>RC800 July 1-Mar. 31</i>
	<i>Nonresidents—one bull</i>	<i>HT</i>	<i>Aug. 1-Sept. 30</i>
<i>22E remainder</i>	<i>Residents—Twenty caribou total, up to 5 per day. Bulls may not be taken Oct 15-Jan 31, and cows may not be taken Apr 1-Aug 31. Permit available online at http://hunt.alaska.gov or in person in Nome and license vendors within Unit 22 beginning June 22</i>	<i>RC800</i>	<i>May be announced</i>
	<i>Nonresidents—one bull</i>	<i>HT</i>	<i>May be announced</i>

Extent of Federal Public Lands/Waters

Unit 22 is comprised of 43% Federal public lands and consist of 28% Bureau of Land Management (BLM) managed lands, 12% National Park Service (NPS) managed lands and 3% U.S. Fish and Wildlife Service (USFWS) managed lands.

Customary and Traditional Use Determinations

Residents of Units 21D west of the Koyukuk and Yukon Rivers, 22 (except residents of St. Lawrence Island), 23, 24, Kotlik, Emmonak, Hooper Bay, Scammon Bay, Chevak, Marshall, Mountain Village,

Pilot Station, Pitka's Point, Russian Mission, St. Marys, Nunam Iqua, and Alakanuk have a customary and traditional use determination for caribou in Unit 22A.

Residents of Units 21D west of the Koyukuk and Yukon Rivers, 22 (excluding residents of St. Lawrence Island), 23, and 24 have a customary and traditional use determination for caribou in Unit 22 remainder.

Regulatory History

In 1990, the Federal caribou hunting seasons in Units 22A and 22B were open year-round with a 5 caribou/day harvest limit and a restriction on the take of cows May 16 — June 30. There was no open caribou season in Units 22C, 22D and 22E.

In 2000, the Board adopted Proposal WP00-53 with modification allowing the use of snowmachines to position a hunter to select individual caribou for harvest in Units 22 and 23. This was done to recognize a customary and traditional practice in the region.

In 2003, the Board adopted Proposal WP03-40 with modification to establish a harvest season of July 1 — June 30 and a 5 caribou per day harvest limit in portions of Units 22D and 22E. This was done because caribou had expanded their range into these subunits and harvest was not expected to impact the caribou or reindeer herds, to provide additional subsistence hunting opportunities and to align State and Federal regulations.

In 2006, the Board adopted Proposal WP06-37 with modification, which designated a new hunt area in Unit 22B with an open season of Oct. 1 — Apr. 30 and a closed season from May 1 — Sept. 30 unless opened by a Federal land manager. This was done to prevent incidental take of privately-owned reindeer and to reduce user conflicts.

In 2013, an aerial photo census indicated significant declines in the WACH population (Caribou Trails 2014). In response, the Alaska Board of Game (BOG) adopted modified Proposal 202 (RC76) in March 2015 to reduce harvest opportunities for both Alaska residents and nonresidents within the range of the WACH, including Units 22, 23, and 26A. These regulation changes – which included lowering bag limits for nonresidents from two caribou to one bull, reductions in bull and cow season lengths, the establishment of new hunt areas and prohibiting calf harvest – were adopted to slow or reverse the population decline.

In 2016, the Board considered Proposal WP16-37, which requested that Federal caribou regulations mirror the new State regulations across the range of the WACH (Units 21D, 22, 23, 24 and 26A). The Board adopted Proposal WP16-37 with modification to reduce the harvest limit to 5 caribou per day, restrict bull season during rut and cow season around calving, prohibit the harvest of calves and the harvest of cows with calves before weaning (mid-Oct.) in some areas, to create new hunt areas and to establish new seasons in Unit 22.

In 2016, the BOG adopted Proposal 140 as amended to make the following changes to Unit 22 caribou regulations: establish a registration permit hunt (RC800), set an annual harvest limit of 20 caribou total and lengthen cow and bull seasons in several hunt areas.

In 2018, the Board adopted WP18-48 to require State registration permits for caribou hunting in Units 22, 23 and 26A to improve harvest reporting and herd management, and to align with State regulations.

In January 2020, the BOG adopted Proposal 24 as amended to remove the restriction on caribou calf harvest in Units 22, 23 and 26A.

In April 2020, the Board adopted Proposal WP20-46 to open a year-round bull season and permit calf harvest for caribou in Unit 23. Creating a year-round season for bulls was intended to allow for harvest of bulls when caribou migration had been delayed, alleviating harvest pressure on cows. The prohibition on calf harvest was lifted in order to permit taking of calves that had been orphaned or injured.

Biological Background

Caribou abundance naturally fluctuates over decades (Gunn 2001, WACH Working Group 2011). Gunn (2001) reports the mean doubling rate for Alaskan caribou as 10 ± 2.3 years. Although the underlying mechanisms causing these fluctuations are uncertain, climatic oscillations (i.e. Arctic and Pacific Decadal Oscillations) may play an important role (Gunn 2001, Joly et al. 2011). Climatic oscillations can influence factors such as snow depth, icing, forage quality and growth, wildfire occurrence, insect levels and predation, which all contribute to caribou population dynamics (Joly et al. 2011). Density-dependent reduction in forage availability, resulting in poorer body condition may exacerbate caribou population fluctuations (Gunn 2001).

Caribou calving generally occurs from late May to mid-June (Dau 2013). Weaning generally occurs in late October and early November before the breeding season (Taillon et al. 2011). Calves stay with their mothers through their first winter, which improves calves' access to food and body condition (Holand et al. 2012). Calves orphaned after weaning (October) have greater chances of survival than calves orphaned before weaning (Holand et al. 2012, Joly 2000, Russell et al. 1991, Rughetti and Fest-Bianchet 2014).

The WACH has historically been the largest caribou herd in Alaska and has a home range of approximately 157,000 square miles in northwestern Alaska. In the spring, most mature cows move north to calving grounds in the Utukok Hills, while bulls and immature cows lag behind and move toward summer range in the Wulik Peaks and Lisburne Hills (**Map 1**, Dau 2011, WACH Working Group 2011, 2019). After calving, cows and calves move west toward the Lisburne Hills where they mix with the bulls and non-maternal cows. During the summer, the herd moves rapidly to the Brooks Range. In the fall, the majority of the herd generally moves south toward wintering grounds south of the Brooks Range (Joly 2021, pers. comm.). Rut occurs during fall migration (Dau 2011, WACH Working Group 2011).

In recent years, the timing of fall migration has been less predictable. From 2010-2019, the average dates that GPS collared caribou crossed the Noatak River ranged from Sep. 6 – Oct. 13; the Kobuk River ranged from Sep. 24 – Nov. 3; and the Selawik River ranged from Oct. 2 – Nov. 10 (Joly and Cameron 2020). From 2010-2016, caribou migration was trending to occur earlier in the year. However, from 2017-2019, caribou crossed the Noatak River, but then there was substantial delay before caribou crossed the Kobuk and Selawik Rivers. This appears to have been the case for 2020 as well. During the fall 2020 Northwest Arctic Regional Advisory Council meeting in early November, Council members stated that only Noatak had harvested caribou in the fall and that caribou had not yet passed through the Southern portions of Unit 23. While data has yet to be analyzed, the first GPS collared caribou did not cross the Kobuk River until November, which is the latest first crossing since data collection began in 2010 (Joly 2021, pers. comm.). Reasons for changes in migration phenology are unknown.

The proportion of caribou using certain migration paths also varies each year (Joly and Cameron 2020). Changes in migration paths are likely influenced by multiple factors including food availability, snow depth, rugged terrain and dense vegetation (Fullman et al. 2017, Nicholson et al. 2016). If caribou travelled the same migration routes every year, their food resources would likely be depleted (NWARAC 2016).

The WACH Working Group consists of a broad spectrum of stakeholders, including subsistence users, sport hunters, conservationists, hunting guides, reindeer herders and transporters. The Group is also technically supported by the National Park Service (NPS), USFWS, BLM and the Alaska Department of Fish and Game (ADF&G) personnel. The WACH Working Group developed a WACH Cooperative Management Plan in 2003 and revised it in 2011 and 2019 (WACH Working Group 2011, 2019). The WACH Management Plan identifies nine plan elements: cooperation, population management, habitat, regulations, reindeer, knowledge, education, human activities and changing climate, as well as associated goals, strategies and management actions. As part of the population management element the WACH Working Group developed a guide to herd management determined by population size, population trend and harvest rate. Population sizes guiding management level determinations were based on recent (since 1970) historical data for the WACH (WACH Working Group 2011, 2019). Revisions to recommended harvest levels under liberal and conservative management were made in 2015 (WACH Working Group 2015) and 2019 (WACH Working Group 2019, **Table 1**).

The WACH population declined rapidly in the early 1970s, reaching a low estimate of about 75,000 animals in 1976. Aerial photocensuses have been used since 1986 to estimate population size. The WACH population increased throughout the 1980s and 1990s, peaking at 490,000 animals in 2003 (**Figure 1**). Beginning in 2003, the herd declined at an average annual rate of 7.1% from approximately 490,000 caribou to 200,928 caribou in 2016 (Caribou Trails 2014; Dau 2011, 2014, Parrett 2016). In 2017, the herd increased to an estimated 259,000 caribou (Parrett 2017a). However, part of this increase may have been due to improved photographic technology as ADF&G switched from film to higher resolution digital cameras. The 2019 population estimate was 244,000 caribou (Hansen 2019a). No photocensus was completed in 2020, but ADF&G plans to conduct a census in 2021 (WACH Working Group 2020).

Between 1982 and 2011, the WACH population was within the liberal management level prescribed by the WACH Working Group (**Figure 1, Table 1**). In 2013, the herd population estimate fell below the population threshold for liberal management of a decreasing population (265,000), slipping into the conservative management level where it has remained. In 2020, no photocensus was completed, and the WACH Working Group voted to maintain the herd's status at the conservative declining level (WACH Working Group 2020).

Between 1970 and 2017, the bull:cow ratio exceeded Critical Management levels identified in the 2019 WACH Management Plan (**Figure 2**). However, the average annual number of bulls:100 cows was greater during the period of population growth (54:100 between 1976–2001) than during the recent period of decline (44:100 between 2004–2016). Additionally, Dau (2015) states that while trends in bull:cow ratios are accurate, actual values should be interpreted with caution due to sexual segregation during sampling and the inability to sample the entire population, which likely account for more annual variability than actual changes in composition.

Although factors contributing to the 2003-2016 decline are not known with certainty, increased adult cow mortality and decreased calf recruitment and survival played a role (Dau 2011). Since the mid-1980s, adult mortality has slowly increased while recruitment has slowly decreased (**Figure 3**, Dau 2013). Prichard (2009) developed a population model specifically for the WACH using various demographic parameters and found adult survival to have the largest impact on population size, followed by calf survival and then parturition rates.

Calf production has likely had little influence on the population trajectory (Dau 2013, 2015). Between 1990 and 2003, the June calf:cow ratio averaged 66 calves:100 cows/year. Between 2004 and 2016, the June calf:cow ratio averaged 71 calves:100 cows/year (**Figure 4**, Dau 2016a). The average June calf:cow ratio increased to 79 calves:100 cows between 2017 and 2020. In June 2018 86 calves:100 cows were observed, which approximates the highest parturition level ever recorded for the herd (86 calves:100 cows in 1992). However, in 2020 the June calf:cow ratio dropped to 67 calves:100 cows (WACH Working Group 2020).

Decreased calf survival through summer and fall and recruitment into the herd likely contributed to the recent population decline (Dau 2013, 2015). Fall calf:cow ratios indicate calf survival over summer. Between 1976 and 2017, the fall calf:cow ratio ranged from 35 to 59 calves:100 cows/year, averaging 47 calves:100 cows/year (**Figure 4**). Since 2008, ADF&G has recorded calf weights at Onion Portage as an index of herd nutritional status. In September 2015, calf weights averaged 100 lbs., the highest average ever recorded (Parrett 2015b).

Similarly, the ratio of short yearlings (SY, 10-11 months old caribou) to adults provides a measure of overwintering calf survival and recruitment. Between 1990 and 2020, SY:adult ratios ranged from 9-26 and averaged 18 SY:100 adults/year (**Figure 4**). SY:100 adult ratios were high from 2016-2018, ranging from 22-23 SY:100 adults (Dau 2016b, NWARAC 2019). The 2020 SY:adult ratio was 17 SY:100 adults (WACH Working Group 2020).

Cow mortality affects the trajectory of the herd (Dau 2011, 2013, Prichard 2009, NWARAC 2019). The annual mortality rate of radio-collared adult cows increased from an average of 15% between 1987 and 2003 to 23% from 2004-2014 (**Figure 3**, Dau 2011, 2013, 2014, 2015). Mortality rates declined in 2015 and 2016, but then increased sharply in 2017. However, the increased mortality rate in 2017 may be due to a low and aging sample size as few caribou have been collared in the past two years (Prichard et al. 2012, NWARAC 2019) and/or difficult weather conditions (Gurarie et al. 2020). Estimated mortality includes all causes of death including hunting (Dau 2011). Dau (2015) states that cow mortality estimates are conservative due to exclusion of unhealthy (i.e. diseased) and yearling cows. These estimates are also susceptible to collar sample size and how long the collars have been on individuals (Prichard et al. 2012).

Far more caribou died from natural causes than from hunting between 1992 and 2012 (Dau 2013). Cow mortality remained constant throughout the year, but natural and harvest mortality for bulls spiked during the fall. However, as the WACH has declined and estimated harvest has remained relatively stable, the percentage of mortality due to hunting has increased relative to natural mortality. For example, during the period October 1, 2013 to September 30, 2014, estimated hunting mortality was approximately 42% and estimated natural mortality about 56% (Dau 2014). In previous years (1983–2013), the estimated hunting mortality exceeded 30% only once in 1997-1998 (Dau 2013). Additionally, Prichard (2009) and Dau (2015) suggest the harvest rates of cows can greatly impact population trajectory. If bull:cow ratios continue to decline, harvest of cows may increase, exacerbating the current population decline.

Dau (2015) speculates that fall and winter icing events were the primary factor initiating the population decline in 2003. Increased predation, hunting pressure, deteriorating range condition (including habitat loss and fragmentation), climate change and disease may also be contributing factors (Dau 2015, 2014, Joly et al. 2011). Joly et al. (2007) documented a decline in lichen cover in portions of the wintering areas of the WACH. Dau (2011, 2014) speculated that degradation in range condition is not thought to be a primary factor in the decline of the herd because animals have generally maintained good body condition since the decline began. Body condition is estimated using a subjective scale from 1-5. The fall body condition of adult females in 2015 was characterized as “fat” (mean= 3.9/5) with no caribou being rated as skinny or very skinny (Parrett 2015b). However, the body condition of the WACH in the spring may be a better indicator of the effects of range condition versus the fall when the body condition of the herd is routinely assessed and when caribou are in prime condition (Joly 2015, pers. comm.).

Caribou feed on a wide variety of plants including lichens, fungi, sedges, grasses, forbs and twigs of woody plants. Arctic caribou depend primarily on lichens during the fall and winter, but during summer they feed on leaves, grasses and sedges (Joly and Cameron 2018, Miller 2003).

Table 1. Western Arctic Caribou Herd management levels using herd size, population trend, and harvest rate (WACH Working Group 2019).

Management and Harvest Level	Population Trend			Harvest Recommendations May Include:
	Declining Adult Cow Survival <80% Calf Recruitment <15:100	Stable Adult Cow Survival 80%-88% Calf Recruitment 15-22:100	Increasing Adult Cow Survival >88% Calf Recruitment >22:100	
Liberal	Pop: 265,000+	Pop: 230,000+	Pop: 200,000+	<ul style="list-style-type: none"> • Reduce harvest of bulls by nonresidents to maintain at least 30 bulls:100 cows • No restriction of bull harvest by resident hunters unless bull:cow ratios fall below 30 bulls:100 cows
	Harvest: 14,000+	Harvest: 14,000+	Harvest: 14,000+	
Conservative	Pop: 200,000-265,000	Pop: 170,000-230,000	Pop: 150,000-200,000	<ul style="list-style-type: none"> • Encourage voluntary reduction in calf harvest, especially when the population is declining • No cow harvest by nonresidents • Restriction of bull harvest by nonresidents • Limit the subsistence harvest of bulls only when necessary to maintain a minimum 30:100 bull:cow ratio
	Harvest: 10,000-14,000	Harvest: 10,000-14,000	Harvest: 10,000-14,000	
Preservative	Pop: 130,000-200,000	Pop: 115,000-170,000	Pop: 100,000-150,000	<ul style="list-style-type: none"> • No harvest of calves • Limit harvest of cows by resident hunters through permit hunts and/or village quotas • Limit the subsistence harvest of bulls to maintain at least 30 bulls:100 cows • Harvest restricted to residents only, according to state and federal law. Closure of some federal public lands to non-qualified users may be necessary
	Harvest: 6,000-10,000	Harvest: 6,000-10,000	Harvest: 6,000-10,000	
Critical	Pop: <130,000	Pop: <115,000	Pop: <100,000	<ul style="list-style-type: none"> • No harvest of calves • Highly restrict the harvest of cows through permit hunts and/or village quotas • Limit the subsistence harvest of bulls to maintain at least 30 bulls:100 cows • Harvest restricted to residents only, according to state and federal law. Closure of some federal public lands to non-qualified users may be necessary
	Harvest: <6,000	Harvest: <6,000	Harvest: <6,000	

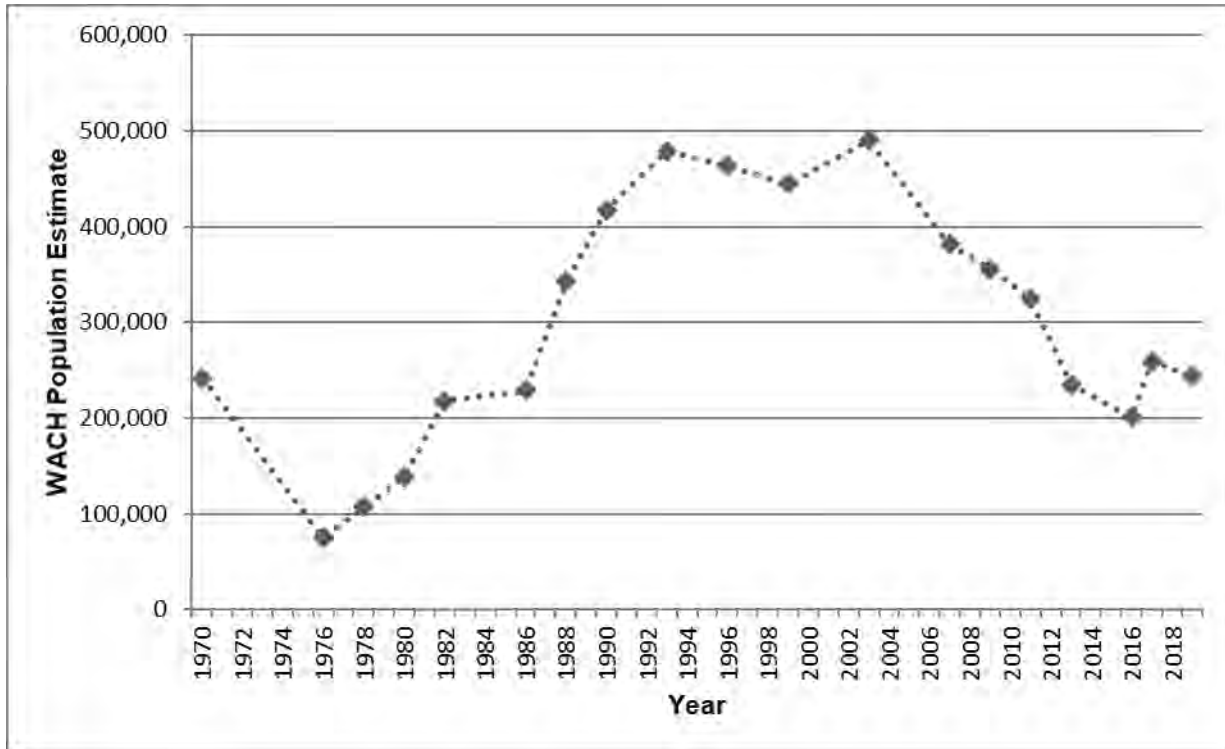


Figure 1. The WACH population estimates from 1970–2019. Population estimates from 1986–2019 are based on aerial photographs of groups of caribou that contained radio-collared animals (Dau 2011, 2013, 2014, Parrett 2016, 2017a, Hansen 2019a).

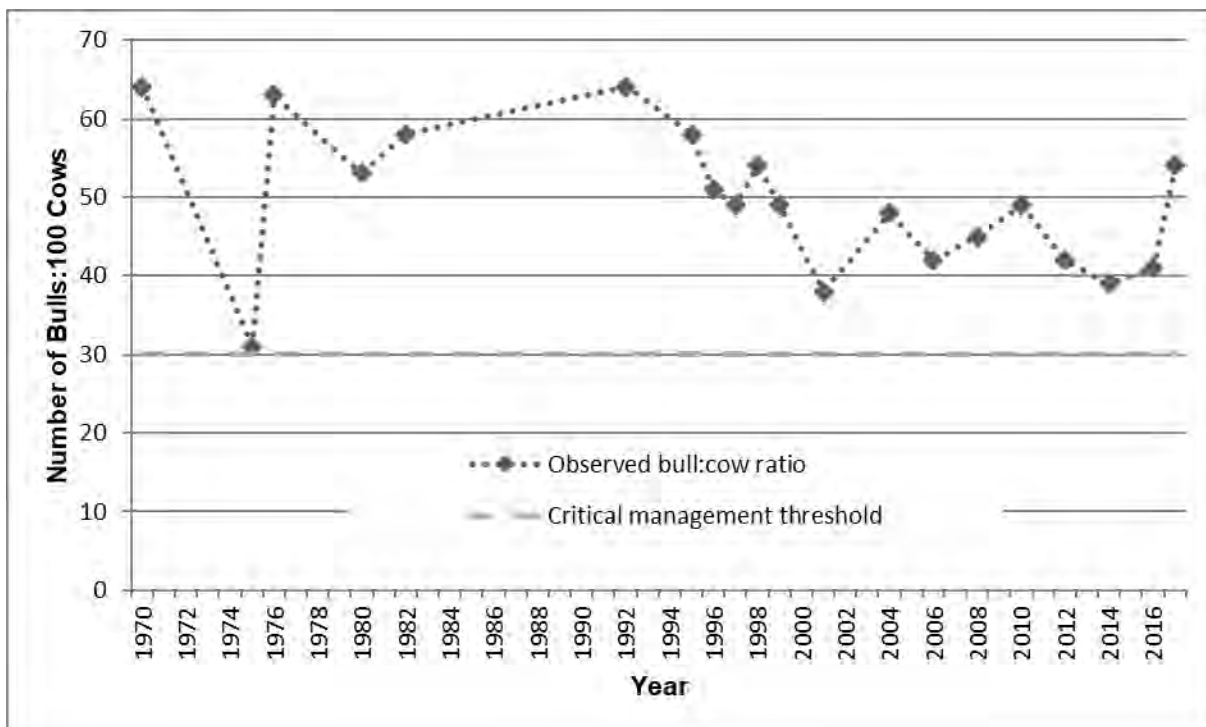


Figure 2. Bull:Cow ratios for the WACH (Dau 2015, ADF&G 2017, Parrett 2017a).

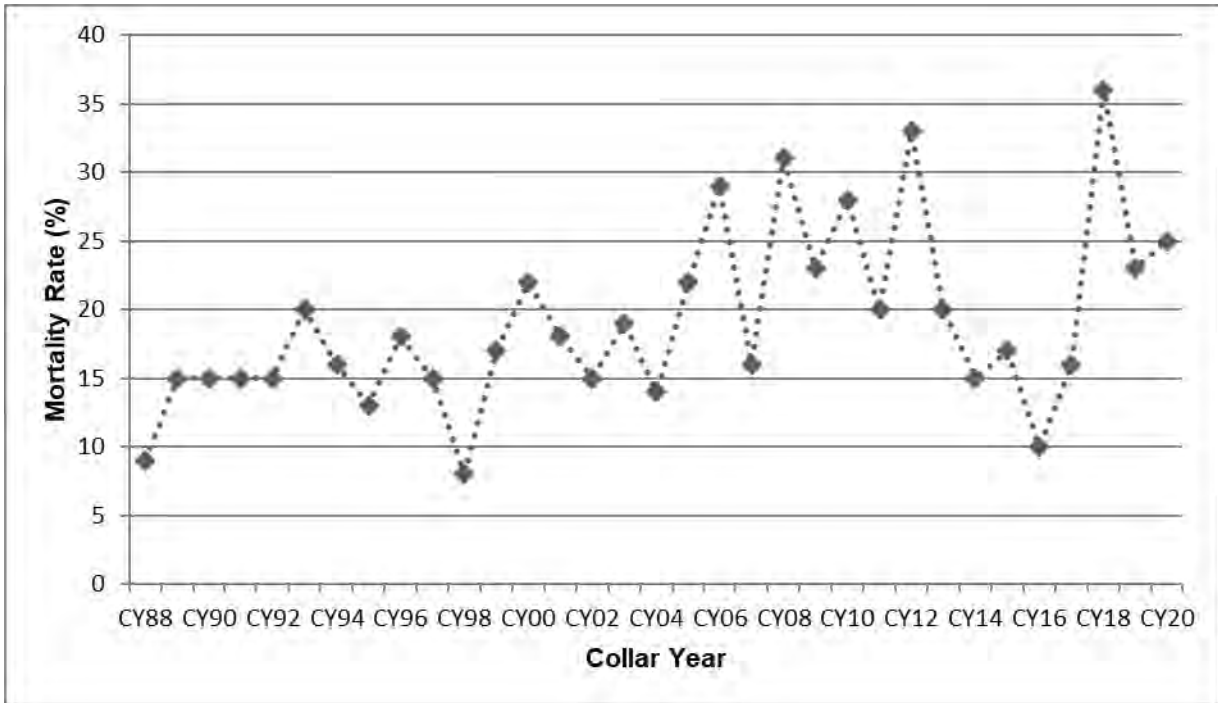


Figure 3. Mortality rate of radio-collared cow caribou in the Western Arctic caribou herd (Dau 2013, 2015, 2016b, NWARAC 2019, WACH Working Group 2020). Collar Year = 1 Oct-30 Sept.

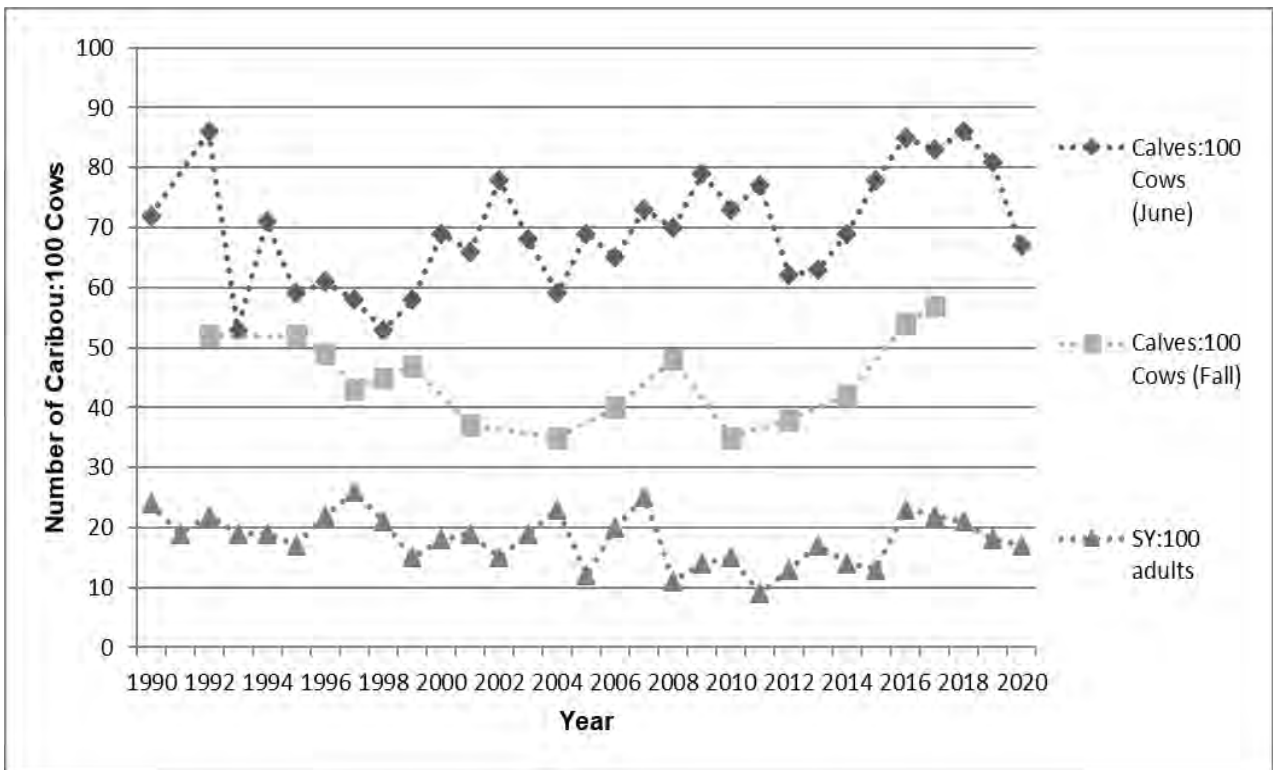


Figure 4. Calf:cow and short yearling (SY):adult ratios for the WACH (Dau 2013, 2015, 2016a, ADF&G 2017, Parrett 2017a, NWARAC 2019, WACH Working Group 2020). Short yearlings are 10-11 months old caribou.

Cultural Knowledge and Traditional Practices

Meeting the nutritional and caloric needs of Arctic communities is vitally important and is the foundation of subsistence activities. Still, the meaning of subsistence extends far beyond human nutrition for Alaska's native peoples. Holthaus (2012) describes subsistence as the base on which Alaska Native culture establishes its identity through "philosophy, ethics, religious belief and practice, art, ritual, ceremony and celebration."

Caribou have been an important resource for the Iñupiat of the Seward Peninsula for thousands of years. Caribou were traditionally a major source of both food and clothing and continues today to be the most important land animal consumed in many communities (Burch 1984, 1994, 1998, ADF&G 1992).

Historically, during fall and spring caribou migrations, people built "drive fences" out of cairns, bundles of shrubs, or upright logs. These fences were sometimes several miles long and two to three miles wide. Ideally, the closed end of the fence crossed a river, and caribou were harvested while crossing the river and retrieved later; or the fence would end in a corral where caribou were snared and killed with spears (Burch 2012).

The WACH population declined rapidly beginning in the late 1800s. At its low point, its range had shrunk to less than half its former size. Famine ensued, primarily due to the absence of caribou. In the early 1900s, reindeer were introduced to fill the need for food and hides. The WACH began to rebound in the 1940s. Currently, among large terrestrial mammals, caribou are among the most abundant; however, the population in any specific area is subject to wide fluctuations from year to year as caribou migration routes change (Burch 2012).

Caribou were traditionally harvested any month of the year they were available. The objective of the summer hunt was to obtain the hides of adult caribou with their new summer coats. They provided the best clothing material available to the Iñupiat. The fall hunt was to acquire large quantities of meat to freeze for winter (Burch 1994). Present-day use of caribou calves appears to be limited but does occur opportunistically.

Small groups of caribou that have over-wintered may be taken by hunters in areas that are accessible by snowmachine. Braem et al. (2015:141) explain, "Hunters harvest cows during the winter because they are fatter than bulls. Caribou harvested during the winter can be aged completely without removing the skin or viscera. Then in the spring, the caribou is thawed. Community members cut it into strips to make dried meat, or they package and freeze it." In spring, caribou start their northward migration. The caribou that are harvested are "lean and good for making dried meat (*paniqtuq*) during the warm, sunny days of late spring" (Georgette and Loon 1993:80).

Harvest History

The State manages the WACH on a sustained yield basis (i.e. managing current harvests to ensure future harvests). The harvestable surplus when the WACH population trend is declining is calculated

as 6% of the estimated population (WACH working group 2011, Parrett 2017b, pers. comm.). In 2017, the WACH harvestable surplus was 15,540 caribou (6% of 259,000 caribou). Assuming the herd population remained stable in 2018 and 2019, the harvestable surplus remains 15,540 caribou. This is a substantial increase from the 2016 harvestable surplus of 12,056 caribou when harvest likely exceeded sustainable levels. However, there is substantial uncertainty in harvestable surplus estimates (Parrett 2015a, Dau 2015). Of particular concern is the overharvest of cows, which has probably occurred since 2010/11 (Dau 2015). Dau (2015:14-29) states, “even modest increases in the cow harvest above sustainable levels could have a significant effect on the population trajectory of the WACH.”

Caribou harvest by local hunters is estimated from community harvest surveys, if available, and from models developed by A. Craig with ADF&G’s Division of Wildlife Conservation Region V. These models incorporate factors such as community size, availability of caribou and per capita harvests for each community, which are based on mean values from multiple community harvest surveys (Dau 2015). In 2015, Craig’s models replaced models developed by Sutherland (2005), resulting in changes to local caribou harvest estimates from past years. While Craig’s models accurately reflect harvest trends, they do not accurately reflect actual harvest numbers (Dau 2015). (Note: no model accurately reflects harvest numbers). This analysis only considers the updated harvest estimates using Craig’s new model as cited in Dau (2015). Caribou harvest by nonresidents is based on harvest ticket reports (Dau 2015) and registration permits for nonlocal residents. Hunters considered local by ADF&G are functionally identical to Federally qualified subsistence users (e.g. Residents of St. Lawrence Island are technically Federally qualified subsistence users in Unit 22, but do not frequently harvest Western Arctic caribou).

From 1999–2017, the average estimated total harvest from the WACH was 14,119 caribou/year, ranging from 11,729-16,219 caribou/year (Hansen 2020, pers. comm., **Figure 5**). These harvest levels are within the conservative harvest level specified in the WACH Management Plan (**Table 1**). In 2015 and 2016, total local harvest estimates were 14,360 caribou and 14,971 caribou, respectively (Hansen 2019b, pers. comm.). While these harvest estimates are below the 2017-2019 harvestable surpluses, they exceed the 2016 harvestable surplus. Of note, harvest estimates do not include wounding loss, which may be hundreds of caribou (Dau 2015).

Local hunters account for approximately 95% of the total WACH harvest and residents of Unit 22 account for approximately 17% of the total harvest on average (**Figure 6**, ADF&G 2017). Comparison of caribou harvest by community from household survey data with yearly GPS-collared caribou migration routes demonstrates that local community harvests parallel WACH availability rather than population trends.

In 2016, the State began requiring registration permits (RC800) for resident caribou harvest in Unit 22. From 2016-2019, reported RC800 harvest ranged from 147-460 caribou and averaged 377 caribou per year. Bulls and cows comprised 74% and 26% of the reported harvest on average, respectively. Calves comprised an unknown proportion of the harvest as this information is not collected in harvest reports (ADF&G 2021).

From 1999-2013, 72% of nonlocal hunters on average accessed the WACH by plane. Most nonlocal harvest (85-90%) occurs between Aug. 25 and Oct. 7. In contrast, most local, subsistence hunters harvest WACH caribou whenever they are available using boats, 4-wheelers, and snowmachines (Dau 2015, Fix and Ackerman 2015).

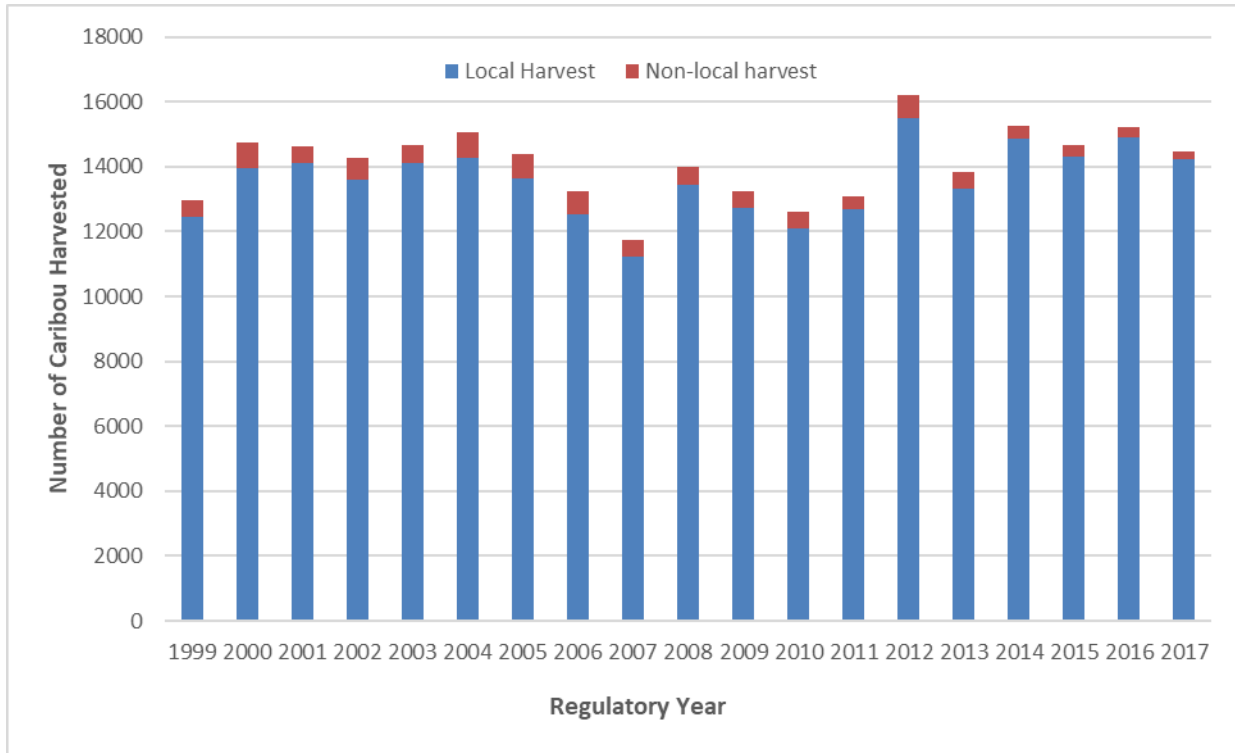


Figure 5. Estimated number of caribou harvested from the WACH by residency (Hansen 2020, pers. comm.). Local harvest is an estimate derived from models; non-local harvest is from harvest reports.

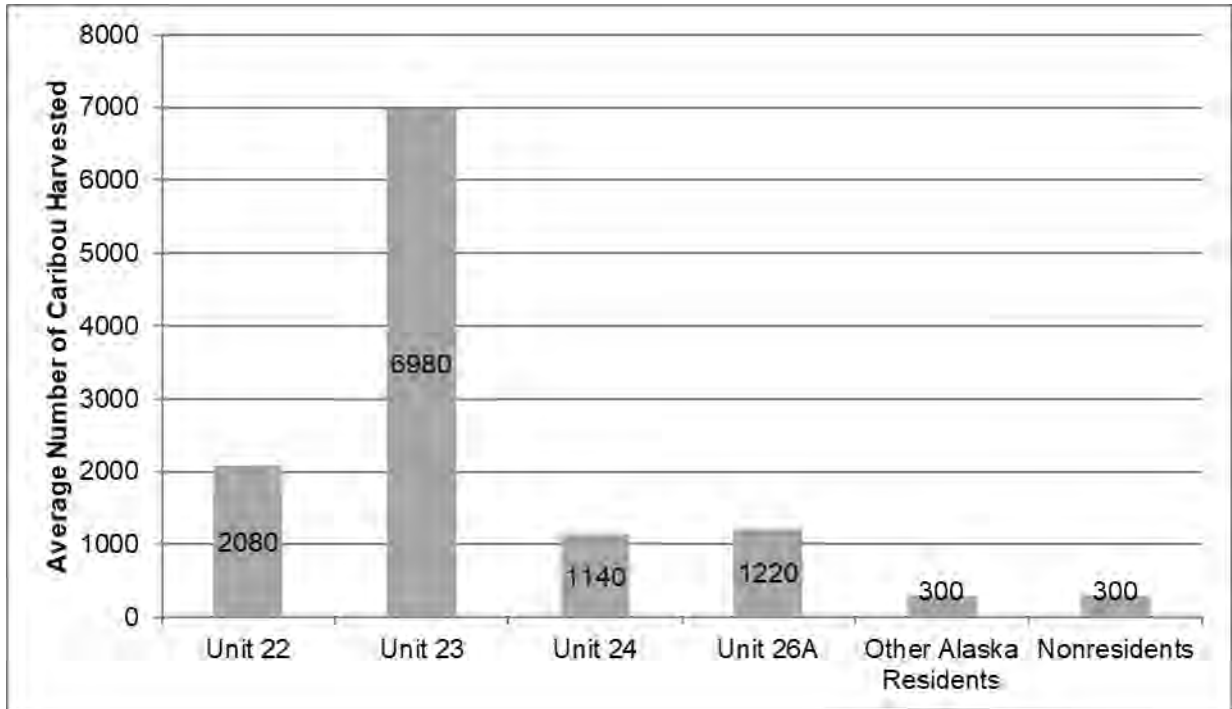


Figure 6. Average number of caribou harvested by unit and residency from 1998-2015 (ADF&G 2017).

Effects of the Proposal

If the Board adopts Proposal WP22-47, the harvest of calves would be permitted in Unit 22. This would increase harvest opportunity for Federally qualified subsistence users. Calf harvest presents minimal conservation concerns as most users do not target calves and calves may already be harvested in Unit 22 under State regulations.

Eliminating the prohibition on calf harvest would allow the harvest of orphaned calves that may otherwise succumb to predation. However, it can be difficult to identify orphaned calves as caribou are scattered across the landscape, and calves and cows can be separated by substantial distances. Additionally, orphaned calves may survive, especially if they remain with the herd. Russell et al. (1991) found survival rates of orphaned and non-orphaned calves were 63% and 78%, respectively, indicating orphaned calves still have a good chance of survival, although the sample size for orphaned calves was very small. The timing of abandonment also influences survival. Calves orphaned after weaning (October) have greater chances of survival than calves orphaned before weaning (Holand et al. 2012, July 2000, Russell et al. 1991, Rughetti and Fest-Bianchet 2014). As caribou typically winter on the Seward Peninsula, caribou harvest in Unit 22 usually occurs later in the year, which could improve the chances of orphaned calves surviving.

Allowing calf harvest may also reduce wanton waste. During deliberation on WP20-46, which requested allowance of calf harvest in Unit 23, a Northwest Arctic Regional Advisory Council member

noted that he has seen dead calves in the field, presumably mistakenly shot and then left since they are illegal to harvest (NWARAC 2019). The ADF&G caribou biologist stated many orphaned calves have ended up around Kotzebue during the hunting season but have been unavailable to harvest. He collared a few of these orphaned calves, all of which died shortly thereafter. He also stated that he receives many reports from hunters about orphaned and wounded calves out in the field that are not legally available for harvest (NWARAC 2019). In regard to the prohibition on the take of cows accompanied by calves, an NPS staff biologist voiced concern that unethical hunters could harvest calves and then harvest its mother, who would no longer be accompanied by a calf (NWARAC 2019). However, hunters can already harvest cows with calves under State regulations, which do not have that restriction.

The Western Arctic and Teshekpuk caribou herds are the only caribou herds in Alaska where calf harvest is prohibited. These restrictions were adopted by the BOG in 2015 and the Board in 2016 as conservation measures when both herds were declining. The WACH management plan also recommends prohibiting calf harvest when the herd is within the conservative management level. However, calves comprise a very small portion of the harvest. In his population model, Prichard (2009) assumed calves comprised only 2% of the total annual WACH harvest, which would not affect the population trajectory of the WACH. As most calves die within their first year and few hunters target calves, calf harvest may be compensatory mortality, although Prichard (2009) assumed all harvest mortality to be additive. While calf recruitment influences herd abundance and population trajectory, Prichard (2009) found adult survival to have the largest impact on WACH population size. Prohibiting cow harvest would have a greater impact on herd conservation than prohibiting calf harvest.

The BOG removed the restriction on calf caribou harvest at its Arctic/Western Region meeting in January 2020. Currently, Federal regulations are more restrictive than State regulations. If the Board adopts this proposal to eliminate the prohibition on calf harvest Federal users would have the same opportunities as State users do.

OSM PRELIMINARY CONCLUSION

Support Proposal WP22-47.

Justification

Adopting Proposal WP22-47 increases harvest opportunity for Federally qualified subsistence users. As most people do not target calves, calf harvest is expected to be very low and should not affect conservation of the herd, especially since calf harvest is already permitted under State regulations. Additionally, allowing calf harvest may reduce wanton waste by allowing mistakenly shot calves to be legally salvaged, and would permit harvest of orphaned calves. Adoption of this proposal would give Federal users the same opportunities as State users.

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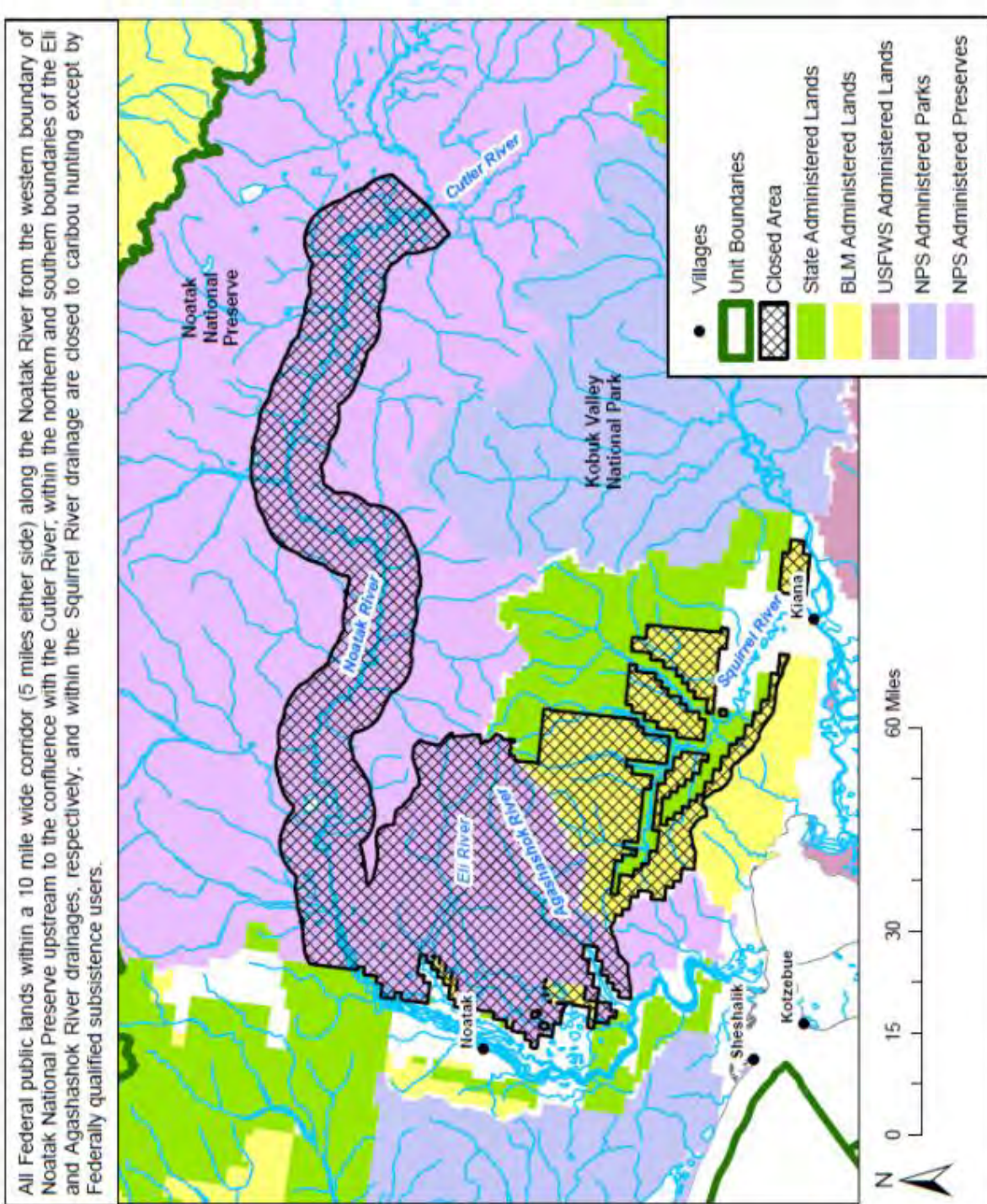
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WCR22-45 Executive Summary	
Closure Location and Species	Unit 23—Caribou
Current Regulation	<p>Unit 23—Caribou</p> <p><i>Unit 23, remainder—5 caribou per day by State registration permit, as follows:</i></p> <p><i>Bulls may be harvested</i> <i>Jul. 1-Jun. 30.</i></p> <p><i>Cows may be harvested. However, cows accompanied by calves may not be taken July 31-Oct. 14</i> <i>Jul. 31-Mar. 31.</i></p> <p><i>Federal public lands within a 10-mile-wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage are closed to caribou hunting except by federally qualified subsistence users hunting under these regulations.</i></p>
OSM Preliminary Conclusion	Maintain status quo
Western Interior Alaska Subsistence Regional Advisory Council Recommendation	
Seward Peninsula Subsistence Regional Advisory Council Recommendation	

WCR22-45 Executive Summary	
Northwest Arctic Subsistence Regional Advisory Council Recommendation	
North Slope Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
Written Public Comments	1 Eliminate closure

FEDERAL WILDLIFE CLOSURE REVIEW
WCR22-45

Closure Location: Unit 23 (Map 1)—Caribou



Current Federal Regulation**Unit 23—Caribou**

Unit 23, remainder—5 caribou per day by State registration permit, as follows:

Bulls may be harvested *Jul. 1-Jun. 30.*

Cows may be harvested. However, cows accompanied by calves may not be taken July 31-Oct. 14 *Jul. 31-Mar. 31.*

Federal public lands within a 10-mile-wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage are closed to caribou hunting except by federally qualified subsistence users hunting under these regulations.

Closure Dates: Year-round

Current State Regulation**Unit 23—Caribou**

<i>23, north of and including Singoalik River drainage</i>	<i>Residents—Five caribou per day by permit available online at http://hunt.alaska.gov or in person in Kotzebue, Utqiagvik, and at license vendors in Units 23 and 26A beginning June 22.</i>	<i>Bulls</i>	<i>RC907</i>	<i>No closed season</i>
		<i>Cows</i>	<i>RC907</i>	<i>July 15-Apr 30</i>
<i>23 remainder</i>	<i>Nonresidents—One bull</i>		<i>HT</i>	<i>Aug. 1- Sept 30</i>
	<i>Residents—Five caribou per day by permit available online at http://hunt.alaska.gov or in person in Kotzebue, Utqiagvik, and at license vendors in Units 23 and 26A beginning June 22.</i>	<i>Bulls</i>	<i>RC907</i>	<i>No closed season</i>
		<i>Cows</i>	<i>RC907</i>	<i>Sept 1- Mar 31</i>
	<i>Nonresidents—One bull</i>		<i>HT</i>	<i>Aug 1-Sept 30</i>

Regulatory Year Initiated: 2018**Extent of Federal Public Lands**

Federal public lands comprise approximately 71% of Unit 23 and consist of 40% National Park Service (NPS) managed lands, 22% Bureau of Land Management (BLM) managed lands, and 9% U.S. Fish and Wildlife Service (USFWS) managed lands.

Customary and Traditional Use Determination

Residents of Unit 21D west of the Koyukuk and Yukon Rivers, Galena, 22, 23, 24 including residents of Wiseman but not including other residents of the Dalton Highway Corridor Management Area, and 26A have a customary and traditional use determination for caribou in Unit 23.

Regulatory History

In 2013, an aerial photocensus indicated significant declines in the Teshekpuk Caribou herd (TCH), WACH, and possibly the Central Arctic Caribou Herd (CACH) populations (Caribou Trails 2014). In response, the Alaska Board of Game (BOG) adopted modified Proposal 202 (RC76) in March 2015 to reduce harvest opportunities for both Alaska residents and nonresidents within the range of the WACH and the TCH. These regulation changes – which included lowering harvest limits for nonresidents from two caribou to one bull, reductions in bull and cow season lengths, the establishment of new hunt areas, and prohibiting calf harvest – were adopted to slow or reverse the population decline. The regulatory changes took effect on July 1, 2015.

In 2015, four temporary special actions, WSA15-03/04/05/06, requesting changes to caribou regulations in Units 23, 24, and 26, were submitted by the North Slope Subsistence Regional Advisory Council (North Slope Council) and approved with modification by the Board, effective July 1, 2015. Temporary Special Action WSA15-03 requested designation of a new hunt area for caribou in the northwest corner of Unit 23 where the harvest limit would be reduced from 15 to 5 caribou per day, the harvest season would be shortened for bulls and cows, and the take of calves would be prohibited. The Board did not establish a new hunt area, applying the restrictions to all of Unit 23 and also prohibited the take of cows with calves. These State and Federal regulatory changes were the first time that harvest restrictions had been implemented for the WACH in over 30 years.

Five proposals (WP16-37, WP16-48, WP16-49/52, and WP16-61) concerning caribou regulations in Unit 23 were submitted to the Board for the 2016-2018 wildlife regulatory cycle. The Board adopted WP16-48 with modification to allow the positioning of a caribou, wolf, or wolverine for harvest on BLM lands only. Proposal WP16-37 requested that Federal caribou regulations mirror the new State regulations across the ranges of the WACH and TCH (Units 21D, 22, 23, 24, 26A, and 26B). The Board adopted Proposal WP16-37 with modification to reduce the harvest limit to 5 caribou per day, restrict bull season during rut and cow season around calving, prohibit the harvest of calves and the harvest of cows with calves before weaning (mid-Oct.), and to create a new hunt area in the northwest corner of Unit 23. The Board took no action on the remaining proposals (WP16-49/52, and WP16-61) because of action taken on WP16-37.

In 2015, the Northwest Arctic Subsistence Regional Advisory Council (Northwest Arctic Council) submitted a temporary special action request (WSA16-01) to close caribou hunting on Federal public lands in Unit 23 to NFQU for the 2016/17 regulatory year. The Council stated that their request was necessary for conservation purposes but also needed because nonlocal hunting activities were negatively affecting subsistence harvests. In April 2016, the Board approved WSA16-01, basing its decision on the strong support of the Northwest Arctic and North Slope Councils, public testimony in favor of the request, as well as concerns over conservation and continuation of subsistence uses (FSB 2016).

In June 2016, the State submitted a special action request (WSA16-03) to reopen caribou hunting on Federal public lands in Unit 23 to NFQU, providing new biological information (e.g. calf recruitment, weight, body condition) on the WACH. The State specified that there was no biological reason for the closure and that it could increase user conflicts. In January 2017, the Board rejected WSA16-03 due to the position of all four affected Councils (Northwest Arctic, North Slope, Seward Peninsula, and Western Interior) as well as public testimony and Tribal consultation comments opposing the request. Additionally, the Board found the new information provided by the State to be insufficient to rescind the closure.

In January 2017, the BOG adopted Proposal 2, requiring registration permits for residents hunting caribou within the range of the Western Arctic and Teshekpuk herds in Units 23 and 26A (a similar proposal was passed for Unit 22 in 2016). The Alaska Department of Fish and Game (ADF&G) submitted the proposal in order to better monitor harvest and improve management flexibility. Also in January 2017, the BOG rejected Proposal 45, which proposed requiring big game hunting camps to be spaced at least three miles apart along the Noatak, Agashashok, Eli, and Squirrel Rivers. The Noatak/Kivalina & Kotzebue Fish and Game Advisory Committee (AC) submitted the proposal to allow caribou to migrate through those areas with less disruption and barriers. The proposal failed as it would be difficult to enforce.

In March 2017, the Northwest Arctic and North Slope Councils submitted temporary special action requests (WSA17-03 and -04, respectively) to close caribou hunting on Federal public lands in Unit 23 and in Units 26A and 26B, respectively to NFQU for the 2017/18 regulatory year. Both Councils stated that the intent of the proposed closures was to ensure subsistence use in the 2017/18 regulatory year, to protect declining caribou populations, and to reduce user conflicts. The Board approved WSA17-03 with modification to close all Federal public lands within a 10 mile wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage to caribou hunting except by FQSU for the 2017/18 regulatory year. The Board considered the modification a reasonable compromise for all users and that closure of the specified area was warranted in order to continue subsistence uses. The Board rejected WSA17-04 stating that recent changes to State regulations aimed at reducing caribou harvest should be given time to determine if they are effective before additional restrictions are enacted.

Four proposals (WP18-32, WP18-45, WP18-46/47, and WP18-48/49) pertaining to caribou regulations in Unit 23 were submitted to the Board for the 2018-2020 wildlife regulatory cycle. In April 2018, the Board rejected Proposal WP18-32, submitted by the Western Interior Alaska Subsistence Regional Advisory Council, which requested changes to the caribou season dates on Federal public lands in multiple Units, including Unit 23. The Board also rejected WP18-45, submitted by Northwest Arctic Council, which requested that the caribou harvest limit in Unit 23 be reduced from 5 caribou per day to 3 caribou per day.

During the same regulatory meeting, the Board adopted Proposal WP18-46 with modification and took no action on WP18-47. Proposal WP18-46, submitted by the Western Arctic Caribou Herd Working Group, requested closing caribou hunting on Federal public lands in Unit 23 to non-Federally qualified users (similar to WSA16-01 and WSA17-03). The Board adopted WP18-46 with the same modification to geographical scope as WSA17-03 (see above) as the Northwest Arctic, Western Interior, and Seward Peninsula Councils as well as the village of Noatak supported this modification and viewed the targeted closure as effectively addressing user conflicts and the continuation of subsistence uses. The Board also took no action on WP18-49 and adopted WP18-48 to require State registration permits for caribou hunting in Units 22, 23, and 26A to improve harvest reporting and herd management, and to align with State regulations.

In January 2020, the BOG adopted Proposal 20 to open a year-round resident season for caribou bull harvest in Unit 23 under State regulations. The BOG also adopted Proposal 24 as amended to remove the restriction on caribou calf harvest in Units 22, 23, and 26A.

In April 2020, the Board adopted Proposal WP20-46 to open a year-round bull season and permit calf harvest for caribou in Unit 23. Creating a year-round season for bulls was intended to allow for harvest of bulls when caribou migration had been delayed, alleviating harvest pressure on cows. The prohibition on calf harvest was lifted in order to permit taking of calves that had been orphaned or injured. The Board took no action on Proposals WP20-43, -44, and -45 due to action taken on Proposal WP20-46.

In June 2021, the Board deferred Wildlife Special Action WSA21-01. WSA21-01 requested closing Federal public lands in Units 23 and 26A to caribou and moose hunting by non-Federally qualified users from August 1 to September 30, 2021. The Northwest Arctic Council submitted the request due to concern over the late migration of caribou into and through Unit 23, which has hindered the ability of subsistence users in the area to harvest caribou and meet their subsistence needs. The Board deferred action on the request, directing OSM to seek additional input on concerns related to caribou from various stakeholders and to fine tune their analysis of moose harvests and populations. The Board will reconsider this request prior to the 2022 hunting season.

Noatak National Preserve Delayed Entry Controlled Use Area

In 2012, the NPS established a Special Commercial Use Area or “delayed entry zone” in the western portion of the Noatak NP (Halas 2015, Fix and Ackerman 2015). The purpose of this zone is to allow a sufficient number of caribou to cross the Noatak River and establish migration routes, to limit

interactions between local and nonlocal hunters, and to allow local hunters the first opportunity to harvest caribou in that area (FWS 2014, Halas 2015). Within this zone, transporters can only transport nonlocal caribou hunters after a pre-determined date unless otherwise specified by the Western Arctic Parklands (WEAR) superintendent in consultation with commercial operators, other agencies and local villages (Halas 2015).

In 2020, the delayed entry date was changed from Sep. 15 to Sep. 22 (NPS 2020) in response to requests from the Cape Krusenstern National Monument and Kobuk Valley National Park SRCs and the Native Village of Noatak (Atkinson 2021, pers. comm.).

Noatak Controlled Use Area

In 1988, the Traditional Council of Noatak submitted a proposal to the BOG to create the Noatak Controlled Use Area (CUA) in order to restrict the use of aircraft in any manner for big game hunting Aug. 15-Sept. 20 due to user conflicts (Fall 1990). The proposed CUA extended five miles on either side of the Noatak River, from the mouth of the Eli River upstream to the mouth of the Nimiuktuk River, including the north side of Kivivik Creek (ADF&G 1988). The BOG adopted the proposal with modification to close a much smaller area extending from the Kugururok River to Sapun Creek from Aug. 20-Sept. 20.

In 1990, the Noatak CUA was adopted under Federal regulations. In 1995, the Board adopted Proposal P95-50 to expand the time period and area of the CUA to Aug. 25-Sept. 15 and the mouth of the Noatak River upstream to the mouth of Sapun Creek, respectively, which aligned with State regulations as they existed at that time.

In 2008, Proposals WP08-50 and 51 requested modifications to the Noatak CUA dates. These proposals were submitted in response to caribou migration occurring later in the season, to improve caribou harvest for subsistence users, and to decrease conflicts between local and nonlocal hunters. The Board deferred these proposals to the next regulatory cycle. In 2010, Proposals WP10-82, 83, and 85 requested similar date changes. The Board adopted WP10-85 to expand the time period during which aircraft are restricted in the Noatak CUA to Aug. 15-Sept. 30, which aligned with the current State regulations.

Closure last reviewed: N/A. This closure was adopted in 2018 and has not been reviewed since.

Justification for Original Closure (ANILCA Section 815 (3) criteria):

Nothing in this title shall be construed as – (3) authorizing a restriction on the taking of fish and wildlife for nonsubsistence uses on public lands (other than national parks and monuments) unless necessary for the conservation of healthy populations of fish and wildlife, for the reasons set forth in section 816, to continue subsistence uses of such populations, or pursuant to other applicable law...

The Board adopted Proposal WP18-46 with modification consistent with the recommendations of the Northwest Arctic and Seward Peninsula Councils, as well as the WACH Working Group. The Board viewed the targeted closure as a reasonable compromise to a complex problem. While the OSM

conclusion proposed closing lands north of the Noatak River between and including the Kelly and Nimiuktuk Rivers, the Board stated that the western part of the proposed area is part of the NPS delayed entry zone, which already limits dates of access into the area by commercial big game transporters operating under NPS commercial use authorization permits (FSB 2018).

Council Recommendation for Original Closure:

Western Interior Alaska Subsistence Regional Advisory Council

Support WP18-46 with modification to close all Federal public lands: within a 10 mile wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage to caribou hunting except by Federally qualified subsistence users for the 2018/2019 and 2019/2020 regulatory years. The closure would extend through September 21st of each calendar year only. The Council indicated that a closure through September 21st would allow ample time for lead cow caribou to establish migration routes through Unit 23 while providing some hunting opportunity for non-Federally qualified users.

Seward Peninsula Subsistence Regional Advisory Council

Support WP18-46 with modification to close all Federal public lands: within a 10 mile wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage to caribou hunting except by Federally qualified subsistence users. The Council noted support for the Northwest Arctic Council and their recommendation.

Northwest Arctic Subsistence Regional Advisory Council

Support WP18-46 with modification to close all Federal public lands: within a 10 mile wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage to caribou hunting except by Federally qualified subsistence users. The Council indicated that recent closures seem to have alleviated many of the user conflicts in the region and that as a result of the closures, caribou appear to be establishing migration routes unimpeded by non-Federally qualified users. They recognized that hunting opportunities and experiences have improved for residents of Noatak as a result of the closures and that targeted closures, rather than a full closure of Unit 23, help to avoid the concentration and displacement of hunters to state managed lands, particularly along the Kobuk River and into Unit 26 and Unit 22. The Council noted that the targeted closure coupled with the National Park Service's Special Commercial Use Area in Noatak National Preserve would help to further alleviate threats to the continuation of subsistence uses in the region. Additionally, the Council recognized recent positive biological indices for the herd but noted concern regarding population trajectories given a recent change in herd census technology.

North Slope Subsistence Regional Advisory Council

Support WP18-46. As with comments on Proposal WP18-57, it was noted that the impact from aircraft used to bring in non-local hunters affects the migration and ability of locals to hunt. The Council feels aircraft operators desire to place paying clients in the path of caribou are diverting caribou and preventing local communities from being able to get caribou. The Council stressed that even though closure may deflect non-federally qualified subsistence users to state lands, it is important to take steps to provide for opportunity for subsistence users on Federal lands. The Council noted that this conflict has been ongoing in this area for many years but it seems up until this point, transporters and guides have not shown any inclination to self-regulate, to work with local users to resolve the conflict. It was noted that the Western Arctic Caribou Herd Working Group represents a broad variety of communities and user groups, and that this proposal is the voice of the people from the region. As such, the Council supports this request.

The Council recognized the work that went into evaluating the most areas of most importance to local communities for harvest of caribou and are the site of the most intense user conflicts in this area but did not support the OSM modification because the full closure is the more dramatic effort needed in order to maximize subsistence opportunity. The Council feels that that the local harvest is already consuming the harvestable surplus, communities are growing, and that it perhaps is time to go into preservation mode. It was noted however, that it appeared that the OSM modification reflected that those areas were the real “problem area” for user conflicts. Chair Gordon Brower commended the work that went into identifying the area that is most critical for subsistence hunters in the area and that has been at the heart of the user conflicts in the region for so many years. He recognized the effort to find a solution that could be supported by all.

State Recommendation for Original Closure:

ADF&G **OPPOSES** these proposals (WP18-46 and WP18-47) at this time because they will not improve the caribou herd’s population status. Harvest by non-federally qualified users is minimal. Recent actions by the BOG were intended to reduce user conflicts in Unit 23 by modifying the Noatak Controlled Use area and by collecting additional harvest information by establishing a new registration permit requirement in Unit 22, 23 and 26A. Both of these changes were adopted following an extensive public process that included the input of Regional Advisory Councils, the Western Arctic Herd working group, Fish and Game Advisory Committees, and the BOG. Additional restrictions are not needed until the effects of these changes are better understood.

If changes are deemed to be necessary, then targeted closures would be preferred so non-federally qualified users are not concentrated on state and private lands. The Western Arctic Caribou Herd Working Group supported a 2-year partial closure that mirrors the WSA 17-03 and would be preferable to the alternate options proposed.

ADF&G has documented the reports of migration deflection due to harvest of animals leading migrations, changes in migration patterns, and other user conflict issues. Although caribou may be temporarily affected by hunters, deflections of herd migration have not been detected to date (Fullman

et.al., 2017). Further research on these issues would be needed to quantify their effects on caribou populations and subsistence opportunity.

Biological Background

Caribou abundance naturally fluctuates over decades (Gunn 2003, WACH Working Group 2011). Gunn (2003) reports the mean doubling rate for Alaskan caribou as 10 ± 2.3 years. Although the underlying mechanisms causing these fluctuations are uncertain, climatic oscillations (i.e. Arctic and Pacific Decadal Oscillations) may play an important role (Gunn 2003, Joly et al. 2011). Climatic oscillations can influence factors such as snow depth, icing, forage quality and growth, wildfire occurrence, insect levels, and predation, which all contribute to caribou population dynamics (Joly et al. 2011). Density-dependent reduction in forage availability, resulting in poorer body condition may exacerbate caribou population fluctuations (Gunn 2003).

Caribou calving generally occurs from late May to mid-June (Dau 2013). Weaning generally occurs in late October and early November before the breeding season (Taillon et al. 2011). Calves stay with their mothers through their first winter, which improves calves' access to food and body condition (Holand et al. 2012). Calves orphaned after weaning (October) have greater chances of survival than calves orphaned before weaning (Holand et al. 2012, Joly 2000, Russell et al. 1991, Ruggetti and Festa-Bianchet 2014).

The WACH has historically been the largest caribou herd in Alaska and has a home range of approximately 157,000 square miles in northwestern Alaska (**Map 2**). In the spring, most mature cows move north to calving grounds in the Utukok Hills, while bulls and immature cows lag behind and move toward summer range in the Wulik Peaks and Lisburne Hills (Dau 2011, WACH Working Group 2011, 2019). After calving, cows and calves move west toward the Lisburne Hills where they mix with the bulls and non-maternal cows. During the summer, the herd moves rapidly to the Brooks Range. In the fall, the majority of the herd generally moves south toward wintering grounds south of the Brooks Range (Joly 2021, pers. comm.). Rut occurs during fall migration (Dau 2011, WACH Working Group 2011).

In recent years, the timing of fall migration has been less predictable. From 2010-2019, the average dates that GPS collared caribou crossed the Noatak River ranged from Sep. 6 – Oct. 13; the Kobuk River ranged from Sep. 24 – Nov. 3; and the Selawik River ranged from Oct. 2 – Nov. 10 (Joly and Cameron 2020). From 2010-2016, caribou migration was trending to occur earlier in the year. However, from 2017-2019, caribou crossed the Noatak River, but then there was substantial delay before caribou crossed the Kobuk and Selawik Rivers. This appears to have been the case for 2020 as well. During the fall 2020 Northwest Arctic Council meeting in early November, Council members stated that only Noatak had harvested caribou in the fall and that caribou had not yet passed through the Southern portions of Unit 23. While data has yet to be analyzed, the first GPS collared caribou did not cross the Kobuk River until November, which is the latest first crossing since data collection began in 2010 (Joly 2021, pers. comm.). Reasons for changes in migration phenology are unknown.

The proportion of caribou using certain migration paths also varies each year (Joly and Cameron 2020). Changes in migration paths are likely influenced by multiple factors including food availability, snow depth, rugged terrain, and dense vegetation (Fullman et al. 2017, Nicholson et al. 2016). If caribou travelled the same migration routes every year, their food resources would likely be depleted (NWARAC 2016).

The WACH population declined rapidly in the early 1970s, bottoming out at about 75,000 animals in 1976. Aerial photocensuses have been used since 1986 to estimate population size. The WACH population increased throughout the 1980s and 1990s, peaking at 490,000 animals in 2003. Beginning in 2003, the herd declined at an average annual rate of 7.1% from approximately 490,000 caribou to 200,928 caribou in 2016 (Caribou Trails 2014; Dau 2011, 2014, Parrett 2016). In 2017, the herd increased to an estimated 259,000 caribou (Parrett 2017a). However, part of this increase may have been due to improved photographic technology as ADF&G switched from film to higher resolution digital cameras. The 2019 population estimate was 244,000 caribou (Hansen 2019a). No photocensus was completed in 2020, but ADF&G plans to conduct a census in 2021 (WACH Working Group 2020).

Between 1982 and 2011, the WACH population was within the liberal management level prescribed by the WACH Working Group. In 2013, the herd population estimate fell below the population threshold for liberal management of a decreasing population (265,000), slipping into the conservative management level where it has remained. In 2020, no photocensus was completed, and the WACH Working Group voted to maintain the herd's status at the conservative declining level (WACH Working Group 2020).

Between 1970 and 2017, the bull:cow ratio exceeded Critical Management levels identified in the 2019 WACH Management Plan. However, the average annual number of bulls:100 cows was greater during the period of population growth (54:100 between 1976–2001) than during the recent period of decline (44:100 between 2004–2016). Additionally, Dau (2015) states that while trends in bull:cow ratios are accurate, actual values should be interpreted with caution due to sexual segregation during sampling and the inability to sample the entire population, which likely account for more annual variability than actual changes in composition.

Although factors contributing to the 2003-2016 decline are not known with certainty, increased adult cow mortality, and decreased calf recruitment and survival played a role (Dau 2011). Since the mid-1980s, adult mortality has slowly increased while recruitment has slowly decreased (Dau 2013). Prichard (2009) developed a population model specifically for the WACH using various demographic parameters and found adult survival to have the largest impact on population size, followed by calf survival and then parturition rates.

Calf production has likely had little influence on the population trajectory (Dau 2013, 2015). Between 1990 and 2003, the June calf:cow ratio averaged 66 calves:100 cows/year. Between 2004 and 2016, the June calf:cow ratio averaged 71 calves:100 cows/year (Dau 2016a). The average June calf:cow ratio increased to 79 calves:100 cows between 2017 and 2020. In June 2018 86 calves:100 cows were

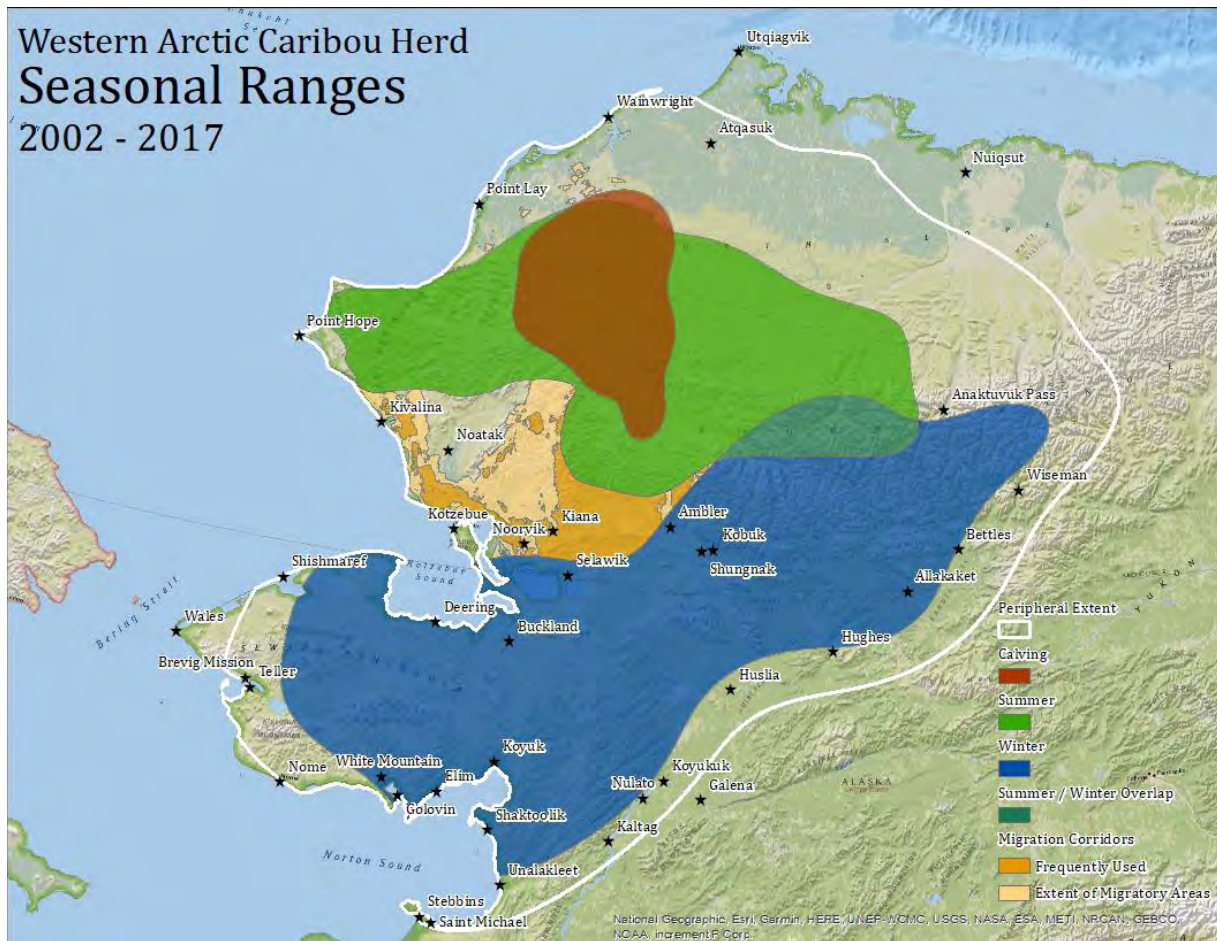
observed, which approximates the highest parturition level ever recorded for the herd (86 calves:100 cows in 1992). However, in 2020 the June calf:cow ratio dropped to 67 calves:100 cows (WACH Working Group 2020).

Decreased calf survival through summer and fall and recruitment into the herd likely contributed to the recent population decline (Dau 2013, 2015). Fall calf:cow ratios indicate calf survival over summer. Between 1976 and 2017, the fall calf:cow ratio ranged from 35 to 59 calves:100 cows/year, averaging 47 calves:100 cows/year.

Similarly, the ratio of short yearlings (SY, 10-11 months old caribou) to adults provides a measure of overwintering calf survival and recruitment. Between 1990 and 2020, SY:adult ratios ranged from 9-26 and averaged 18 SY:100 adults/year. SY:100 adult ratios were high from 2016-2018, ranging from 22-23 SY:100 adults (Dau 2016b, NWARAC 2019a). The 2020 SY:adult ratio was 17 SY:100 adults (WACH Working Group 2020).

Cow mortality affects the trajectory of the herd (Dau 2011, 2013, Prichard 2009, NWARAC 2019a). The annual mortality rate of radio-collared adult cows increased from an average of 15% between 1987 and 2003 to 23% from 2004–2014 (Dau 2011, 2013, 2014, 2015). Mortality rates declined in 2015 and 2016, but then increased sharply in 2017. However, the increased mortality rate in 2017 may be due to a low and aging sample size as few caribou have been collared in the past two years (Prichard et al. 2012, NWARAC 2019a) and/or difficult weather conditions (Gurarie et al. 2020). Estimated mortality includes all causes of death including hunting (Dau 2011). Dau (2015) states that cow mortality estimates are conservative due to exclusion of unhealthy (i.e. diseased) and yearling cows. These estimates are also susceptible to collar sample size and how long the collars have been on individuals (Prichard et al. 2012).

Far more caribou died from natural causes than from hunting between 1992 and 2012 (Dau 2013). Cow mortality remained constant throughout the year, but natural and harvest mortality for bulls spiked during the fall. However, as the WACH has declined and estimated harvest has remained relatively stable, the percentage of mortality due to hunting has increased relative to natural mortality. For example, during the period October 1, 2013 to September 30, 2014, estimated hunting mortality was approximately 42% and estimated natural mortality about 56% (Dau 2014). In previous years (1983–2013), the estimated hunting mortality exceeded 30% only once in 1997-1998 (Dau 2013). Additionally, Prichard (2009) and Dau (2015) suggest that harvest levels and rates of cows can greatly impact population trajectory. If bull:cow ratios continue to decline, harvest of cows may increase, exacerbating the current population decline.



Map 2. Western Arctic Caribou Herd seasonal range map, 2002-2017 (WACH Working Group 2019).

Cultural Knowledge and Traditional Practices

Caribou have been a primary resource for the Iñupiat of the Northwest Arctic region for thousands of years; caribou bones dating from 8,000 to 10,000 years ago have been excavated from archeological sites on the Kobuk River (Anderson 1968, 1988). Caribou were traditionally harvested any month of the year they were available in the Northwest Arctic region. Hunt timing changed—and continues to change—from year to year according to the availability of caribou and their migration paths (Burch 2012; ADF&G 1991). Iñupiaq hunting values are based on the belief that hunter behavior can prevent a successful harvest or alter the caribou migration (Anderson 1998).

Caribou continue to dominate the subsistence harvest in most communities in the region (Braem et al. 2015, Braem 2017). In household harvest surveys conducted between 1964 and 2017, caribou were often the most harvested species, more than any other wild resource, in pounds of edible weight. Based on these surveys, the per capita harvest of caribou has been as high as 430 pounds per year in communities in Unit 23 (ADF&G 2021).

The objective of the fall hunt has historically been to acquire large quantities of high quality meat to freeze for winter (Burch 1984). Ideally, caribou harvesting occurs when the weather is cool enough to

prevent spoilage of meat, but before freeze-up. Hunters search for caribou and attempt to intercept them at known river crossings, making the Kobuk and Noatak Rivers central to traditional hunt areas. But because of the variable range of the herd, the critical hunting sites changed each year. Noatak National Preserve was not only the hunting grounds of the people of the Noatak, it was also an alternative hunting site for people living on the Kobuk River, Selawik, and Kotzebue Sound” (Deur et al. 2019). At River crossings, caribou can be selectively harvested with small caliber rifles.

Communities in Unit 23 harvest caribou in the spring, fall, and winter, but fall is the preferred season for harvest. Prior to freeze-up, bulls have traditionally been preferred because they are fatter than cows (Georgette and Loon 1993). Caribou can be harvested in large numbers, when available, and transported back to villages by boat before freeze-up. After freeze-up, cows are preferred, because bulls are typically skinnier and in rut by then; the meat smells bad and is of poor quality (Braem et al. 2015).

User Conflicts

While residents of Unit 23 rely on caribou for the majority of their subsistence harvest, non-locals are attracted to the region because of its extensive public lands and abundant wildlife. User conflict is defined as “persons competing for consumptive or non-consumptive uses of a finite resource” (Braem et al. 2015). User conflicts are likely to intensify when resources are scarce and when food security is threatened (Cohen and Pinstrip-Andersen 1999).

Conflicts between local and nonlocal hunters have been well documented in Unit 23, specifically in the Noatak NP, the Squirrel River area, and along the upper Kobuk River (Georgette and Loon 1988, Jacobson 2008, Harrington and Fix 2009, Halas 2015, NWARAC 2015, Braem et al. 2015), even during times of high caribou abundance. Braem et al. (2015:177) note that “The roots of [this] conflict are varied, but they involve displacement of local hunters from traditional hunting sites, hunt disruption (largely by aircraft traffic), and differences in hunting practices and culture.”

A long-held cultural practice in the region requires that lead adult female caribou be allowed to establish migratory paths unhindered by human activity. Local hunters have expressed concerns over aircraft and nonlocal hunters disrupting caribou migration by scaring caribou away from river crossings, landing and camping along migration routes, and shooting lead caribou (Halas 2015, Fix and Ackerman 2015, NWARAC 2015). According to a review of grey literature on aircraft-subsistence user conflict, “Specific reports or observations about aircraft activity harassing wildlife, changing caribou...migration routes, and frustrating harvesters have been increasing [in the Alaskan Arctic] since the early 2000s” (Stinchcomb et al. 2019:132).

Incomplete geographical information regarding air traffic and hunting camp information has prevented a full quantitative assessment of caribou deflection or displacement associated with commercial operators and their hunting clients (Dau 2015). Some studies and local observations of WACH caribou response to aircraft have suggested that animal response is limited in temporal and spatial scale (Fullman et al. 2017) and that many factors contribute to larger scale shifts in migration.

The timing of hunting has caused conflicts between user groups because 85–95% of all caribou taken by nonlocal hunters are harvested between August 25 and October 7, the same period as intense subsistence hunting (Dau 2015:31). While hunt timing often aligns among these user groups, methods of access do not. Most local hunters harvest caribou with snowmachines, boats, and 4-wheelers, and few use aircraft. In contrast, 76% of nonlocal hunters accessed hunt areas by plane in regulatory years 2012 and 2013 (Dau 2015:31). This mode of access can provide nonlocal users with a greater range of access and speed in reaching ideal hunting locations, and also place them in front of a migrating herd.

Local WACH harvest has been relatively stable in Unit 23 since the 1990s, but residents of some communities have had to “greatly increase their expenditure of money and effort to maintain these harvest levels” (Dau 2015:14-30). This is due in part to having to travel farther, more frequently, and for longer durations to find caribou (Halas 2015). Halas (2015) and Stinchcomb et al. (2019) note that even when the question of whether or not migration patterns are affected by aircraft in the long term is put aside, aircraft activity can lead to changes in harvesting behavior. Subsistence hunters avoid areas with air traffic; this displacement in turn prevents continued use of traditional areas and can even accelerate loss of place-based traditional knowledge. The authors also found that avoidance of high air-traffic areas results in longer trips and higher fuel costs for harvesters (Stinchcomb et al. 2019).

In a 2014 survey of 19 Noatak hunters, 78% and 92% of respondents perceived “nonlocals” and planes to impact caribou migration, respectively. Similarly, 63% and 81% of respondents reported that “nonlocal” hunters and planes reduced hunting success, respectively (Halas 2015). Noatak respondents did differentiate between commercial transporter operators and “nonlocal” hunters, attributing a decrease in harvest success primarily to aircraft associated with commercial transporters (Halas 2015). Negative encounters between local and nonlocal hunters identified by respondents primarily focused on river crossings of migrating caribou (Halas 2015).

Effects of the closure to date

The most recent subsistence survey of caribou harvest in Noatak dates to 2016-2017 (Gonzalez et al. 2018); there is no new data available that would allow for a comparison of household caribou harvest before and after implementation of the closure. However, following implementation of the closure, first as a temporary special action (WSA17-03) and then in permanent regulation (WP18-46), members of the Northwest Arctic Council have given feedback on its effects at their meetings. For example, in 2018, the Council member from Noatak stated: “This proposal helped Noatak get our caribou and decreased a lot of conflict on the Noatak River. We've been able to get our quota of caribou that we didn't get for a while and it really did make a difference for our subsistence for the people of Noatak.” He continued:

Some [residents] say...they got—just like a long time ago, peace and quiet, we can take our kids now, we don't have to worry about someone shooting over our heads. That's been happening when there's too [many] sport hunters on the river, they were shooting from behind us and from over our heads and while we're in the water and that was getting dangerous. So this closure pretty much helped Noatak big time (NWARAC 2018a).

Additional testimony reflecting the success of the closure for Noatak has been given by Council members every year since the closure was implemented (NWARAC 2019a, NWARAC 2020, NWARAC 2021). Simultaneously, Council members representing other communities in Unit 23—where no closure is in place—have expressed ongoing and growing concern about the role of nonlocal hunters, transporters, and guides in preventing the continuation of subsistence hunting for caribou in the region (e.g. NWARAC 2018a, 2018b, 2019a, 2019b, 2020, 2021).

Harvest History

The State manages the WACH on a sustained yield basis (i.e. managing current harvests to ensure future harvests). The harvestable surplus when the WACH population trend is declining is calculated as 6% of the estimated population (WACH working group 2011, Parrett 2017b, pers. comm.). In 2019, the WACH harvestable surplus was 14,640 caribou (6% of 244,000 caribou). Assuming the herd population remained stable in 2020 and 2021, the harvestable surplus remains 14,640 caribou. This is a notable increase from the 2016 harvestable surplus of 12,056 caribou when harvest likely exceeded sustainable levels. However, there is substantial uncertainty in harvestable surplus estimates (Parrett 2015, Dau 2015). Of particular concern is the overharvest of cows, which has probably occurred since 2010/11 (Dau 2015). Dau (2015a:14-29) states, “even modest increases in the cow harvest above sustainable levels could have a significant effect on the population trajectory of the WACH.”

Caribou harvest by local hunters is estimated from community harvest surveys, if available, and from models developed by A. Craig with ADF&G’s Division of Wildlife Conservation Region V. These models incorporate factors such as community size, availability of caribou, and per capita harvests for each community, which are based on mean values from multiple community harvest surveys (Dau 2015). In 2015, Craig’s models replaced models developed by Sutherland (2005), resulting in changes to local caribou harvest estimates from past years. While Craig’s models accurately reflect harvest trends, they do not accurately reflect actual harvest numbers (Dau 2015). (Note: no model accurately reflects harvest numbers). This analysis only considers the updated harvest estimates using Craig’s new model as cited in Dau (2015). Caribou harvest by nonlocal residents and nonresidents are based on harvest ticket reports (Dau 2015). Hunters considered local by ADF&G are functionally identical to Federally qualified subsistence users (e.g. Residents of St. Lawrence Island are technically Federally qualified subsistence users, but do not frequently harvest Western Arctic caribou).

From 1999–2018, the average estimated total harvest from the WACH was 14,103 caribou/year, ranging from 11,729–16,219 caribou/year (Hansen 2020 and 2021, pers. comm.). These harvest levels are within and above the conservative harvest level specified in the WACH Management Plan. In 2015 and 2016, total local harvest estimates were 14,360 caribou and 14,971 caribou, respectively (Hansen 2019, pers. comm.). While these harvest estimates approximate the 2019–2021 harvestable surpluses, they exceed the 2016 harvestable surplus. In 2017 and 2018, the estimated local harvest was 14,218 and 13,818, respectively (Hansen 2021, pers. comm.). Of note, harvest estimates do not include wounding loss, which may be hundreds of caribou (Dau 2015).

Local hunters account for approximately 95% of the total WACH harvest and residents of Unit 23 account for approximately 58% of the total harvest on average (ADF&G 2017). Local community harvests parallel WACH availability rather than population trends. For example, Ambler only harvested 325 caribou when the WACH population peaked in 2003 but harvested 685 caribou in 2012 when most of the WACH migrated through eastern Unit 23. Similarly, Noatak only harvested 66 caribou in 2010 when no GPS-collared caribou migrated through western Unit 23. Harvest increased substantially (360 caribou) the following year when 37% of the GPS-collared caribou (and thus, a greater proportion of the WACH) migrated through western Unit 23.

Between 1998 and 2019, annual reported caribou harvest in Unit 23 ranged from 168-814 caribou (Hansen 2021, pers. comm.). Over the same time period, reported harvest by non-Federally qualified users ranged from 131-657 caribou. The lowest reported harvest occurred in 2016 when all Federal public lands in Unit 23 were closed to non-Federally qualified users, but before harvest reporting was required for Federally qualified subsistence users living locally. Regardless, local compliance with reporting mandates is considered low but increasing. In 2017, the BOG began requiring registration permits, which is reflected in the greater number of reported caribou harvest by Federally qualified subsistence users. On average, 76% of WACH caribou harvested by nonlocals are harvested in Unit 23 (Dau 2015).

From 1999-2013, 72% of nonlocal hunters on average accessed the WACH by plane. Most nonlocal harvest (85-90%) occurs between Aug. 25 and Oct. 7. In contrast, most local, subsistence hunters harvest WACH caribou whenever they are available using boats, 4-wheelers, and snowmachines (Dau 2015, Fix and Ackerman 2015). In Unit 23, caribou have historically been available during fall migration, but this has no longer been the case in recent years; caribou migration has occurred later in fall, resulting in subsistence harvest also occurring later, which in turn contributes to food insecurity.

Effects

The Board enacted the current closure because it was necessary to continue subsistence uses of the WACH per §815(3) of ANILCA. Continued complaints about conflicts surrounding the Noatak and Squirrel River drainage and the apparent benefit of the 2016/17 Federal closure to Noatak residents evidenced by letters and public testimony supported the closure of Federal public lands along the Noatak, Eli, Agashashok and Squirrel Rivers. Additionally, the short-term effects of aircraft on caribou behavior can negatively affect hunting success and harvest.

If the closure is lifted, non-Federally qualified users would be able to hunt caribou on Federal public lands along the Noatak River and within the Squirrel, Eli, and Agashashok River drainages. This could result in more user conflicts and interfere with caribou harvest by Federally qualified subsistence users. Feedback from Noatak residents indicate that the current closure has reduced user conflicts, resulting in more successful caribou hunts and allowing for the continuation of subsistence uses (NWARAC 2018a, 2019, 2020, 2021).

OSM CONCLUSION:

- x maintain status quo**
_ modify or eliminate the closure

Justification

The current closure is still necessary to continue subsistence uses of the WACH for Federally qualified subsistence users, specifically Noatak residents. The underlying factor leading to the closure in 2018—user conflict—has persisted overall in Unit 23 but has been mitigated in the closure area. The WACH continues to be managed at the conservative declining level. Since the closure has been enacted, user conflicts within the closure area have been reduced, and the hunt experiences and harvest success of Federally qualified subsistence users have improved.

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Written Public Comments



unapologetically FOR ALASKAN RESIDENTS

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July 19, 2021

To: Federal Subsistence Board
Office of Subsistence Management
(Attn: Theo Matuskowitz)
1011 E. Tudor Road, MS-121
Anchorage, Alaska 99503-6199

Re: Federal Subsistence Board 2022-2024 Wildlife Proposals and Existing Closures

Dear Federal Subsistence Board Members,

Resident Hunters of Alaska (RHAK) represents several thousand members from across the state, rural and urban, who advocate for sustainable wildlife management policies and a resident hunting priority according to Article 8 of our state constitution.

RHAK participates in Regional Advisory Council (RAC) meetings and Federal Subsistence Board (FSB) meetings, and we have become alarmed at the continuing wildlife proposals and special action requests that are not based on actual biological emergencies or conditions that would prevent federally qualified subsistence users (FQU) from meeting their subsistence needs.

What makes any FSB closures and restrictions especially problematic is that there is no differentiation in the federal system between Alaska residents and nonresidents from another state or country; both Alaska residents and nonresidents are deemed the same under federal regulations by definition of a who is a FQU. A prime example of why this is so problematic is that often complaints about competition from non-local non-federally qualified subsistence users (NFQU) center on the nonresident component, which can often comprise the majority of NFQ hunters participating in these hunts. So, when any restrictions or closures on federal lands happen, Alaskans who used to live in a designated rural area but for whatever reason have moved to more urban areas of the state, can't return home to hunt and carry on their traditional hunting activities on federal lands, nor can other Alaskans participate in these hunts.

It has always been RHAK's position that when and where we have wildlife conservation concerns or subsistence opportunities are not being met, that the ***nonresident component should always be the first group of hunters***

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*Resident Hunters of Alaska Comments
Federal Subsistence Board 2022-2024 Wildlife Proposals & Existing Closures*

restricted. If other restrictions are still necessary, only then can we support restrictions on resident hunters.

We have always advised RACs to first use the Board of Game (BOG) process when and where there are concerns with too much competition from non-local NFQ hunters, as the BOG can differentiate between Alaska residents and nonresidents.

Comments on Individual Proposals and Existing Closures

WP22-07 Federal public lands of Admiralty Island draining into Chatham Strait between Point Marsden and Point Gardner are closed to deer hunting Sept. 15 – Nov. 30, except by Federally qualified subsistence users hunting under these regulations.

OPPOSE

The rationale of WP22-07 is not based on any biological data or harvest statistics that show a conservation concern for the deer population on Admiralty Island or that subsistence needs are not being met.

According to Alaska Department of Fish & Game (ADF&G) data, over the last decade we have had mild winters in Game Management Unit 4 and the deer population is "*high and stable.*" The deer population on western Admiralty Island is **not** depleted, as the proposal states. Nor are there any conservation concerns for the deer population under the current hunting regulations.

The proposal also states that there has been increased "*hunting pressure*" from NFQ hunters and it has "*become more challenging for subsistence hunters in Angoon to harvest sufficient deer for their needs.*" But according to ADF&G data, over the last two decades there has been a **decrease** in both the number of FQU and NFQU.

The FSB operates under ANILCA guidelines and the federal code of regulations that govern when and why any closures to NFQU can happen: "*With respect to subsistence uses of a particular fish or wildlife population, the Board may only approve a proposed closure if necessary for reasons of public safety, administration, or to assure the continued viability of such population (ANILCA §816(b), 36 CFR 242.10(d)(4)(vii) and 50 CFR 100.10(d)(4)(vii)).* **Meanwhile, the Board may approve a proposed closure of nonsubsistence uses of a particular fish or wildlife population for any of these same reasons, or if necessary for the conservation of healthy populations of fish and wildlife,**

or to continue subsistence uses of such population (ANILCA §815(3), 36 CFR 242.10(d)(4)(vi) and 50 CFR 100.10(d)(4)(vi)).”¹

The Board should vote down this proposal based on the above guidelines of when any restrictions or closures on federal lands for NFQU are allowed to happen.

WP22-09 Federal public lands draining into Lisianski Inlet, Lisianski Strait, and Stag Bay south of the latitude of Mite Cove (58° 4' N) and north of the latitude of Lost Cove (57° 52' N) are closed to deer hunting Oct. 15 – Dec. 31, except by Federally qualified subsistence users hunting under these regulations.

OPPOSE

Refer to our comments on WP22-07

WCR22-01 Deer Prince of Wales closed Aug. 1-15, except by Federally qualified subsistence users; non- Federally qualified users may only harvest 2 bucks

Rescind closure to NFQU on Price of Wales Island

WCR22-45 Caribou Unit 23 - Portions of Unit 23 - closed to non- Federally qualified users

Rescind closure to NFQU in those portions of Unit 23

Thank you for the opportunity to comment.

Sincerely,

Mark Richards
Executive Director Resident Hunters of Alaska

¹ <https://www.doi.gov/sites/doi.gov/files/uploads/closure-policy-revised-2020-08-04.pdf>

WCR22–07 Executive Summary	
Closure Location and Species	Unit 17 (Nushagak Peninsula) - Caribou
Current Regulation	<p>Unit 17–Caribou</p> <p><i>Units 17A and 17C, that portion of 17A and 17C consisting of the Nushagak Peninsula south of the Igushik River, Tuklung River and Tuklung Hills, west to Tvativak Bay—up to 5 caribou by Federal registration permit. Aug. 1-Mar. 31</i></p> <p><i>Public lands are closed to the taking of caribou except by federally qualified users unless the population estimate exceeds 900 caribou.</i></p>
OSM Preliminary Conclusion	Maintain status quo
Bristol Bay Subsistence Regional Advisory Council Recommendation	
Western Interior Alaska Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

**FEDERAL WILDLIFE CLOSURE REVIEW
WCR22-07**

Closure Location: Unit 17 (Nushagak Peninsula) - Caribou

Current Federal Regulation

Unit 17—Caribou

Units 17A and 17C, that portion of 17A and 17C consisting of the Nushagak Peninsula south of the Igushik River, Tuklung River and Tuklung Hills, west to Tvativak Bay—up to 5 caribou by Federal registration permit. Aug. 1-Mar. 31

Public lands are closed to the taking of caribou except by federally qualified users unless the population estimate exceeds 900 caribou.

Closure Dates: Year-round

Current State Regulation

Unit 17— Caribou

Residents: Unit 17A, all drainages that terminate east of Right Hand Point— two caribou by permit available online at <http://hunt.alaska.gov> and in person in Anchorage, Bethel, Dillingham, Fairbanks, Homer, King Salmon, Palmer, Soldotna, and at local license vendors beginning July 14 RC501 may be announced

Nonresidents: No open season

Residents: Unit 17C remainder— two caribou by permit available online at <http://hunt.alaska.gov> and in person in Anchorage, Bethel, Dillingham, Fairbanks, Homer, King Salmon, Palmer, Soldotna, and at local license vendors beginning July 14 RC501 may be announced

Nonresidents: No open season

Regulatory Year Initiated: 1994

Extent of Federal Public Lands

The Nushagak Peninsula is comprised of 85% Federal public lands and consists of 85% U.S. Fish and Wildlife Service (USFWS) managed lands.

Customary and Traditional Use Determination

Residents of Units 9B, 9C, 9E, 17, Lime Village, and Stony River have a customary and traditional use determination for caribou in Unit 17 remainder.

Regulatory History

Caribou were reintroduced to the Nushagak Peninsula in 1988, with the intention of providing a subsistence resource to area residents (USFWS et. al. 1994). In 1994, the Federal Subsistence Board (Board) adopted Proposal P94-42, which established a Jan. 1 – Mar. 31 harvest season for the Nushagak Peninsula Caribou Herd (NPCH) in portions of Units 17A and 17C, and instituted a closure to all users except residents of Togiak, Dillingham, Manokotak, Twin Hills, Aleknagik, Clark’s Point, and Ekuk (FSB 1994). The newly established season began on January 1, 1995 with a harvest limit of 1 caribou.

In 1995, The Board’s approval of Temporary Special Action S95-06 extended the season from Jan. 1 – Mar. 31 to Dec. 1 – Mar. 31 for the 1995/96 regulatory year. In 1996, the Board adopted Proposal P96-34, which changed the caribou season from Jan. 1 – Mar. 31 to Dec. 1 – Mar. 31 and also established an Aug. 1 –30 fall season (FSB 1996). In 1997, the Board adopted Proposal P97-47, which increased the harvest limit from 1 caribou to 2 caribou on the Nushagak Peninsula, as there was a harvestable surplus of caribou and the previous year’s harvest had been well below the management objective (FSB 1997). In 1998, the Board approved Special Action S97-10, which extended the fall season from Aug. 1 –30 to Aug. 1 – Sep. 30. This extension became regulation when the Board adopted Proposal P99-39 in 1999 (FSB 1999).

In 2001, the Board adopted Proposal WP01-18, authorizing the use of a designated hunter permit (FSB 2001). In 2002, the Board approved Temporary Special Action WSA02-13, which reduced the harvest limit from 2 caribou to 1 caribou for the NPCH hunt, and delegated authority to the Togiak NWR manager to close the season when harvest objectives were met. This action was intended to prevent overharvest of the declining NPCH. In 2003, Board action on WP03-22 changed the harvest limit from 2 caribou to “up to 2 caribou” and delegated authority to the Togiak NWR manager to set harvest objectives and limits, determine the number of permits to be issued, and to close the season. The new regulation also required that hunters report their harvest within 24 hours after returning from the field (FSB 2003). These changes provided management flexibility and reduced the need for special actions and follow-up proposals.

Emergency Special Action WSA15-02, submitted by the Village of Manokotak in April 2015, requested that the season be extended to May 31, due to poor winter travel conditions and subsequent low caribou harvest. The Board rejected this request because immobilization drugs used during a recent capture and collaring project could have posed a human health risk prior to May 10, and because any season extension beyond May 10 would have overlapped with the calving season (OSM 2016a).

The Nushagak Peninsula Caribou Planning Committee submitted four special action requests for the 2015/16 regulatory year. Temporary Special Action WSA15-14 requested increasing the harvest limit to 3 caribou through March 31, 2016. Temporary Special Action WSA15-15 requested opening

Federal public lands to caribou harvest by all residents of Alaska through March 31, 2016. Emergency Special Action WSA15-16 requested extending the winter season from Dec. 1 – Mar. 31 to Dec. 1 – Apr. 15. Temporary Special Action WSA15-17 requested that subsistence harvest of Nushagak caribou be exempted from the prohibition on same-day airborne harvest Jan. 1 – Apr. 15. These requests sought to increase harvest and slow population growth of the NPCH. All four requests were approved by the Board, with a modification of WSA15-14 that retained the 3 caribou limit through April 15, 2015 (OSM 2016a).

In early 2016, the Alaska Department of Fish and Game (ADF&G) announced a State season by Emergency Order (EO 04-03-16), targeting caribou migrating off the Nushagak Peninsula in portions of Units 17A and 17C. This season opened on March 4, 2016. Approval of WSA15-15 provided an opportunity for ADF&G to expand the hunt to include Federal public lands on the Nushagak Peninsula, which occurred on March 17. The State season was open through March 31, 2016, had a limit of 2 caribou of either sex, and required the use of a State registration permit (RC501).

After the Federal and State seasons closed in spring 2016, the Manokotak Village Council submitted Emergency Special Action Request WSA15-18, requesting that the Federal caribou season on the Nushagak Peninsula be extended through the end of May, or until females begin calving. The request was approved with the modification to: 1) reopen the season through May 10, a date that provided reasonable assurance that the season would not overlap with calving, and 2) raise the harvest limit to 3 caribou, consistent with recent action on WSA15-14 and WSA15-16. As a result, the season was reopened May 3 – May 10, 2016.

Several proposals related to Nushagak caribou were submitted for consideration for the 2016 – 2018 regulatory years. Proposal WP16-25/26, submitted by the Togiak Fish and Game Advisory Committee (Togiak AC) and the Nushagak AC, requested increasing the harvest limit from 2 caribou to 3 caribou and modifying the existing split season to a single Aug. 1 – Mar. 31 season. Proposal WP16-31/32, also submitted by the Togiak AC and the Nushagak AC, requested that same day airborne harvest of Nushagak Peninsula caribou be allowed during the winter season, Jan. 1 – Mar. 31. The Board adopted WP16-25 with modification, raising the harvest limit to “up to 5 caribou” and creating a single season, as proposed. It also adopted WP16-31. The Board took no action on WP16-26 and WP16-32, based on action taken on WP16-25 and WP16-31 (FSB 2016).

In spring 2016, Togiak NWR and ADF&G submitted Temporary Special Action Request WSA16-02, which requested that the closure be lifted for the 2016/17 regulatory year, as long as the population did not fall below 900 animals, the upper population objective. Members of the public and Tribal representatives acknowledged the need for population reduction but offered limited support due to concerns about maintaining subsistence priority, particularly during the winter season, concerns about the limitations imposed by current customary and traditional use determinations, and concerns that the 900 caribou threshold for opening Federal public lands might persist beyond regulatory year 2016/17 and become a permanent management parameter. The Board acknowledged these concerns and encouraged revision of the Nushagak Peninsula Caribou Management Plan to accommodate a wider range of situations, but approved WSA16-02 with modification to delegate authority to the manager of

Togiak NWR to reinstate the closure if the population falls below 900 animals, given the biological necessity for population reduction.

In fall 2016, ADF&G announced a State season in portions of Units 17A and 17C by Emergency Order (EO 04-50-16). The season was limited to Alaska residents, required a registration permit (RC501), and had a harvest limit of 2 caribou. Although the season was open Aug. 1, 2016 – Mar. 31, 2017 on State lands, harvest of caribou within the Federal hunt area on the Nushagak Peninsula was allowed only through September 30, 2016. This effectively limited opportunity for winter harvest within the core range of the herd to Federally qualified subsistence users.

Review of the 1994 closure was most recently addressed in Closure Review WCR15-07, which the Bristol Bay Subsistence Regional Advisory Council (Council) took up at its February 2017 meeting. The Council voted to rescind the closure, due to concerns about long-term sustainability of the herd (BBSRAC 2017) and consistent with the Board’s Closure Policy (Appendix A), which specifies that closures “should be removed as soon as practicable when conditions that originally justified the closure have changed to such an extent that the closure is no longer necessary.”

As a result, the Council submitted Proposal WP18-22, which requested eliminating the Federal caribou closure on the Nushagak Peninsula. In April 2018, the Board adopted Proposal WP18-22 with modification to close caribou hunting on the Nushagak Peninsula except by Federally qualified subsistence users unless the population estimate exceeds 900 caribou. The Board stated this modification addressed the Council’s concerns over both over-grazing and overharvest, as well as provides management flexibility and certainty, reducing the need for additional special action requests (FSB 2018).

In July 2020, under authority delegated by the Board, the Togiak NWR manager announced a daily harvest limit of one bull caribou, an annual quota of five bulls, and that five Federal permits total would be issued for the NPCH hunt. Additionally, the 2020 season opened August 1 and closed on September 20. The limited quota and season were to promote herd growth because the summer 2020 population estimate of the NPCH was only 226 caribou, which is near the lower end of the population objective. The State NPCH hunt (RC501) was closed for the 2020/21 regulatory year.

In August 2020, the Board approved a revised closure policy, which stipulated all closures will be reviewed every four years. The policy also specified that closures, similar to regulatory proposals, will be presented to the Councils for a recommendation and then to the Board for a final decision. Previously, closure reviews were presented to Councils who then decided whether to maintain the closure or to submit a regulatory proposal to modify or eliminate the closure.

Closure last reviewed: 2018 – WP18-22

Justification for Original Closure (ANILCA Section 815 (3) criteria):

Nothing in this title shall be construed as – (3) authorizing a restriction on the taking of fish and wildlife for nonsubsistence uses on public lands (other than national parks and monuments) unless necessary for the conservation of healthy populations of fish and wildlife,

for the reasons set forth in section 816, to continue subsistence uses of such populations, or pursuant to other applicable law...

Caribou were reintroduced to the Nushagak Peninsula in February 1988 after an absence of over 100 years. The reintroduction was a cooperative effort between the U.S. Fish and Wildlife Service, ADF&G, and the villages of Togiak, Manokotak, Dillingham, and Choggiung Limited, with the goal of reestablishing a caribou population large enough to sustain a reasonable harvest, while still allowing the herd to grow.

A subsistence hunt was established in 1994, and Federal public lands were closed to the harvest of Nushagak caribou by all users, except by residents of Togiak, Dillingham, Twin Hills, Manokotak, Aleknagik, Clark's Point, and Ekuk. Community studies conducted in four of the seven villages slated to participate in the Nushagak caribou harvest indicated that caribou were an integral component of the seasonal round of wild resource harvest activities.

Council Recommendation for Original Closure:

The Bristol Bay Subsistence Regional Advisory Council supported the establishment of the hunt as well as the closure to non-Federally qualified users by stating that “[Togiak National Wildlife Refuge] will be able to monitor the hunt fairly closely with the Traditional Councils administering the permits; there's a real ownership with the people in this herd and in the management. The State will keep it closed on the State side so they can honor the original agreement” (FSB 1994).

State Recommendation for Original Closure:

The State supported Proposal 42 in 1994, stating that they had been part of the Nushagak Peninsula Caribou Management Planning Committee and agreed with its recommendation (FSB 1994).

Biological Background

The NPCH was established in 1988 when 146 caribou were reintroduced to the Nushagak Peninsula where caribou had been an important subsistence resource for area residents (NPCH Management Plan 1994). The herd is cooperatively managed by the Nushagak Peninsula Caribou Planning Committee (Committee), which consists of Federal, State, Tribal, and local representatives. In 2020, the Committee revised the population objective from 400-900 caribou, optimum 750 caribou to the objective stated below due to concerns about overgrazing (Aderman 2020b, pers. comm.).

Management objectives for the NPCH agreed upon by the Committee include (Aderman 2020a):

- Population: 200-600 caribou, optimum 400 caribou
- Bull:cow ratio: 35-45 bulls:100 cows (if ratio is < 25 bulls:100 cows, manage for viability; if ratio is > 55 bulls: 100 cows, manage for increased bull harvest).
- Harvest objective: 10-30 caribou

Within the first 10 years following reintroduction, the NPCH grew from 146 animals in 1988 to over 1,200 caribou by 1997. Subsequently, calf recruitment and adult female survival decreased and the population fell below 500 caribou by 2006. By 2015, the population had increased to an estimated size

of over 1,400 caribou and remained above population objectives through 2019. However, the population declined to a minimum count of 209 caribou in 2020, which is the lowest count since 1989, the year following reintroduction (Aderman 2020a, pers. comm.) (**Table 1**).

The causes of the decline between 1999 and 2007 are not clearly understood and are almost certainly multi-factored (Aderman and Lowe 2012). The most likely explanation for the decline is that the exceptionally high growth through 1998 produced large annual cohorts of females that survived until a relative old age, at which time they declined in productivity. This high proportion of unproductive females, combined with high harvest years in 2001 and 2002, changed the population trajectory from an increasing trend to a decreasing trend, which persisted until the replacement of old, unproductive females with younger, more productive females. Changing nutritional conditions (both short-term, such as those associated with drought or winter icing, as well as longer-term changes, such as lower overall carrying capacity due to continuous grazing on the Nushagak Peninsula since 1988) underlaid and exacerbated this decline. Predation on the population has not been shown to be a significant factor. A study of wolf predation from 2007–2011 found that wolf predation was not a primary driver of Nushagak Peninsula caribou population dynamics (Walsh and Woolington 2008). Brown bears are common on the Nushagak Peninsula and likely have learned to exploit the caribou population, but their impact on the NPCH is not known (Aderman and Lowe 2012).

Between 2007 and 2015, the population increased due to improved fall calf recruitment and adult female survival (Aderman 2015). Since 2015, the population has decreased due to increased caribou harvest (Aderman 2017, pers. comm.; 2020b). Specifically, the substantial population decline in 2020 is attributed to hunting related mortality (reported and unreported harvest, wounding loss) as 799 caribou have reported harvested over the last four seasons. Predation by bears and wolves accounted for an unknown amount of mortality (NPCPC 2020).

Since reintroduction in 1988, bull:cow ratios have ranged from 12-71 bulls:100 cows, averaging 44 bulls:100 cows. The 2020 surveys estimated 33 bulls:100 cows, which is just below management objectives. Over the same time period, calf:cow ratios have ranged from 10-72 calves:100 cows, averaging 44 calves:100 cows. 2020 surveys estimated 49 calves:100 cows (**Table 1**) (Aderman 2020b, pers. comm.).

The Committee is concerned over the potential for the NPCH to overgraze its habitat. Between 2002 and 2017, lichen cover on the Nushagak Peninsula declined from 48% to 30% (NPCPC 2020). Assuming the current rate of change continues, lichen cover is projected to be zero by 2026 (Aderman 2020a). If overgrazing occurs, the Committee believes Nushagak Peninsula caribou would likely leave the peninsula before starving to death. However, it is unknown whether the emigration would be temporary, seasonal or long term (NPCPC 2020). Current management efforts are aimed at preventing overgrazing, while recovering the population and providing for subsistence harvest opportunity.

Table 1. Sex and age composition, minimum counts and population estimates for the NPCH, 1988-2017 (Aderman 2015, Aderman 2020b, pers. comm.).

Year	Bulls: 100 Cows	Calves: 100 Cows	Minimum Count ¹	Population Estimate ²
1988	12	10	146	---
1989	---	---	202	---
1990	---	---	268	---
1991	---	---	383	---
1992	60	72	561	---
1993	---	---	734	---
1994	71	65	1,007	---
1995	---	---	1,156	---
1996	---	---	1,112	---
1997	64	62	1,255	---
1998	57	63	1,237	---
1999	48	53	972	---
2000	52	38	1,024	---
2001	46	35	930	---
2002	43	36	678	---
2003	47	44	757	---
2004	43	34	588	---
2005	38	32	594	---
2006	31	36	477	---
2007	49	40	462	---
2008	44	60	579	683 ± 108
2009	37	35	679	861 ± 160
2010	42	45	706	758 ± 83
2011	29	39	859	847 ± 64
2012	52	50	902	925 ± 63
2013	32	40	926	1,033 ± 135
2014	44	53	1,014	1,056 ± 103
2015	65	46	1,313	1,424 ± 172
2016	51	40	1,230	1,294 ± 68
2017	30	42	786	968 ± 218
2018	25	34	709	787 ± 114
2019	33	26	710	822 ± 164
2020	33	49	209	226 ± 47

¹Reported minimum counts were obtained pre-calving (January – March) in 1988 – 1994, 1997, 2000 and post-calving (June – July) in all other years.

²Population estimates are based on Rivest et al. (1998) caribou abundance estimator.

Cultural Knowledge and Traditional Practices

Comprehensive subsistence surveys conducted by ADF&G, Division of Subsistence, document the importance of caribou for the residents of Bristol Bay (Coley-Kenner et al. 2003; Evans et al. 2013;

Fall et al. 1986; Holen et al. 2012; Holen et al. 2005; Kreig et al. 2009; Schinchnes and Chythlook 1988; Seitz 1996). For most communities, caribou contribute a significant portion of the total community harvest of wild resources; reports document a range from no harvest in Aleknagik in 2008 (an uncommon occurrence) to a high of 23% of the community harvest in Levelock for 2005 (Holen et al. 2012; Kreig et al. 2009). In all communities over each study year (1974 – 2010), results demonstrate that while a small number of households actually harvested caribou, most households used caribou meat. This was particularly true in Kokhanok where caribou contributed only 3% to the total community harvest in 2005 but was used by 80% of the households (Kreig et al. 2009). In 2008, Aleknagik hunters did not report any harvest of caribou but approximately 13% of the households used caribou shared with them by households outside the community (Holen et al. 2012). Such a use pattern is common in rural Alaska, indicating the importance of the resource and that sharing is significant and extensive throughout the area.

An example of typical caribou harvest and use patterns can be seen in a Manokotak study from 1988. In 1986, Manokotak was surveyed for the 1985 harvest year (Schinchnes and Chythlook 1988), with 54 of 59 households (91%) surveyed for the study. Eighty-nine percent of respondents reported using caribou while 31% reported actually harvesting caribou. The average harvest was 112 pounds of caribou per household or 22 pounds of caribou per person. The majority of the caribou hunting took place after freeze-up via snowmachine or airplane. Upon a successful hunt, the meat was divided among participants, and again distributed upon return. During the study year, caribou was broadly shared within the community of Manokotak with 65% of households reporting the receipt of caribou from others.

Annual harvest and use of caribou fluctuates in the Bristol Bay Region from year to year and study to study for a variety of reasons (migration patterns, access, the availability of alternative resources), but comparison studies over time demonstrate a continued reliance on this important resource.

Harvest History

In 2011, the Nushagak Peninsula Caribou Management Plan's harvest strategy was revised to make it more responsive to a dynamic caribou population. The strategy established an annual harvest goal based on population size and trend, and allows harvest when the population exceeds 200 caribou and is stable or increasing. It calls for a liberal harvest when the population is 800 caribou or greater, and recommends harvesting all animals over a minimum count of 750 caribou (Aderman 2015). In 2020, the Committee set a harvest objective of 10-30 caribou and agreed upon a harvest quota of five bulls for the 2020/21 season (Aderman 2020a, 2020b, pers. comm.).

Hunting effort is influenced by travel conditions, availability of and opportunity to harvest other resources, including Mulchatna caribou and moose, as well as economic factors (Aderman and Lowe 2012). Historically, most of the reported harvest has occurred in February and March (**Table 2**), due to improved hunter access to the herd via snowmachine (Aderman and Lowe 2012). Between 1994/95 and 2019/20, 14% and 63% of the NPCH harvest occurred in February and March, respectively. Total reported harvest has sometimes been lower than expected, given the NPCH size. In particular, winter harvest has been low in several recent years due to poor travel conditions resulting from low snowfall

and warm temperatures.

Between 1994/95 and 2019/20, reported Nushagak caribou harvest ranged from 0-378 caribou per year (**Table 2**). The highest harvests occurred in 2016/17 and 2019/20 (Aderman 2020b, pers. comm.).

These years of high harvest likely contributed to the recent population decline.

Local subsistence hunters from Aleknagik, Dillingham, Manokotak, Togiak, Twin Hill's and Clark's Point account for the vast majority of caribou harvested under Federal and State regulations, and most Nushagak caribou are harvested under Federal regulations. Between 2015/16 and 2019/20, nine percent of the total reported harvest occurred under State regulations (Aderman 2020a). In 2020/21, the RC501 State hunt did not occur due to conservation concerns.

Table 2. Reported harvest of the NPCH, by month, for regulatory years 1994/1995 – 2016/2017 (Aderman 2015; OSM 2015; Aderman 2017, pers. comm., 2020b pers. comm.; ADF&G 2017).

Year	Month									Total
	Aug.	Sep.	Oct.	Dec.	Jan.	Feb.	Mar.	Apr.	Unknown	
1994/1995	NS ^a	NS	NS	NS	3	1	25	NS	6	35
1995/1996	NS	NS	NS	3	0	5	43	NS	1	52
1996/1997	5	NS	NS	0	0	2	13	NS	0	20
1997/1998	5	NS	NS	0	2	25	35	NS	0	67
1998/1999	0	2	NS	0	0	0	50	NS	3	55
1999/2000	0	0	NS	0	2	7	54	NS	0	63
2000/2001	0	6	NS	0	0	22	98	NS	0	126
2001/2002	0	3	NS	0	0	9	115	NS	0	127
2002/2003	3	0	NS	0	0	0	0	NS	0	3
2003/2004	2	3	NS	0	0	0	29	NS	0	34
2004/2005	1	0	NS	0	0	0	8	NS	0	9
2005/2006	1	1	NS	0	0	0	9	NS	0	11
2006/2007	NS	NS	NS	NS	NS	0	NS	NS	0	0
2007/2008	NS	NS	NS	NS	NS	0	0	NS	0	0
2008/2009	NS	NS	NS	NS	NS	5	2	NS	1	8
2009/2010	NS	NS	NS	NS	NS	3	14	NS	1	18
2010/2011	NS	NS	NS	NS	NS	18	27	NS	0	45
2011/2012	0	2	NS	NS	NS	20	64	NS	0	86
2012/2013	6	3	NS	0	5	6	89	NS	0	109
2013/2014	3	1	NS	0	0	0	98	NS	0	102
2014/2015	8	7	NS	0	0	1	0	NS	0	16
2015/2016 ^b	28	14	NS	0	0	0	15	7	0	64
2016/2017 ^c	29	15	1	2	38	113	180	0	0	378
2017/2018 ^d	8	3	0	1	2	19	67	NS	0	100
2018/2019 ^e	6	3	2	0	0	1	2	NS	0	14
2019/2020 ^f	11	3	0	0	9	69	215	NS	0	307

^a NS = No season

^b Includes 10 caribou harvested under State regulation

^c Includes 28 caribou harvested under State regulation

^d Includes 5 caribou harvested under State regulation

^e Includes 2 caribou harvested under State regulation

^f Includes 12 caribou harvested under State regulation and 7 harvested illegally

Effects

The existing closure strikes an effective management compromise, particularly due to the annual variability in the NPCH population and harvest. If the closure were lifted, Federally qualified subsistence users would lose their subsistence priority and would be less able to meet their subsistence needs because of competition with and harvest by non-Federally qualified users. If the closure was made more stringent, the NPCH would be more likely to exceed carrying capacity by overgrazing its habitat.

OSM PRELIMINARY CONCLUSION:

maintain status quo

modify or eliminate the closure

Justification

The current closure balances concerns of overharvest with those of overgrazing. Closing the hunt to non-Federally qualified users when the NPCH population estimate is below 900 caribou provides a subsistence priority, while opening the hunt to all users when the NPCH exceeds 900 caribou helps keep the herd within carrying capacity of its habitat and prevents unnecessary restrictions on non-subsistence users.

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WP22-01 Executive Summary	
General Description	<p>Proposal WP22-01 requests clarification of who is and who is not a participant in a community harvest system and how that affects community and individual harvest limits. <i>Submitted by: the Office of Subsistence Management</i></p>
Proposed Regulation	<p>§ _____.25 Subsistence taking of fish, wildlife, and shellfish: general regulations</p> <p><i>(c) Harvest limits</i></p> <p>...</p> <p>(5) Fish, wildlife, or shellfish taken by a participant in a community harvest system counts toward the community harvest limit or quota for that species as well as individual harvest limits, Federal or State, for each participant in that community harvest system, however, the take does not count toward individual harvest limits, Federal or State, of any non-participant. Fish, wildlife, or shellfish taken by someone who is not a participant in a community harvest system does not count toward any community harvest limit or quota.</p> <p>(i) For the purposes of this provision, all residents of the community are deemed participants in the community harvest unless the Board-approved framework requires registration as a prerequisite to harvesting or receiving any fish, wildlife, or shellfish pursuant to that community harvest, in which case only those who register are deemed participants in that community harvest.</p> <p>§ _____.26 Subsistence taking of wildlife</p> <p><i>(e) Possession and transportation of wildlife.</i></p> <p>...</p> <p>(2) An animal taken under Federal or State regulations by any member of a community with an established community harvest limit for that species counts toward the community harvest limit for that species. Except for wildlife taken pursuant to § _____.10(d)(5)(iii) or as otherwise provided for by this part, an animal taken as part of a community harvest limit counts toward every community member's</p>

WP22-01 Executive Summary	
	<i>harvest limit for that species taken under Federal or State of Alaska regulations.</i>
OSM Preliminary Conclusion	Support
Southeast Alaska Subsistence Regional Advisory Council Recommendation	
Southcentral Alaska Subsistence Regional Advisory Council Recommendation	
Kodiak/Aleutians Subsistence Regional Advisory Council Recommendation	
Bristol Bay Subsistence Regional Advisory Council Recommendation	
Yukon-Kuskokwim Delta Subsistence Regional Advisory Council Recommendation	
Western Interior Alaska Subsistence Regional Advisory Council Recommendation	
Seward Peninsula Subsistence Regional Advisory Council Recommendation	
Northwest Arctic Subsistence Regional Advisory Council Recommendation	

WP22-01 Executive Summary	
Eastern Interior Alaska Subsistence Regional Advisory Council Recommendation	
North Slope Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

**DRAFT STAFF ANALYSIS
WP22-01**

ISSUES

Wildlife Proposal WP22-01, submitted by the Office of Subsistence Management (OSM), requests clarification of who is and who is not a participant in a community harvest system and how that affects community and individual harvest limits.

Discussion

The proponent requests specific language clarifying who is and who is not a participant in a community harvest system and how this relates to individual and community harvest limits. While developing the framework for a community harvest system in summer 2020, Ahtna Intertribal Resource Commission (AITRC) representatives and Federal agency staff realized that current Federal regulations stipulate that any animals harvested under a community harvest limit count toward the harvest limits of every community member whether or not they choose to participate in the community harvest system. This provision is perceived as unfair to community members who are not interested in participating in a community harvest system because their individual harvest limits are met involuntarily by participants in the community harvest system.

This proposal would affect community and individual harvest limits as well as define who is and who is not a participant in a community harvest system for wildlife, fish, and shellfish, statewide. In addition to clarifying who is and who is not a participant in a community harvest system, the intent of this proposal is to allow community members who opt out of a community harvest system to retain their individual harvest limits.

Note: While the proposal as submitted listed the proposed regulations under §100.25(c)(2), the proponent clarified their intention was to create a separate section for these regulations as §100.25(c)(5).

Existing Federal Regulation

**36 CFR 242.25 and 50 CFR 100.25 Subsistence taking of fish, wildlife, and shellfish:
general regulations**

(c) Harvest limits

§____.26 Subsistence taking of wildlife

(e) Possession and transportation of wildlife.

...

(2) An animal taken under Federal or State regulations by any member of a community with an established community harvest limit for that species counts towards the community harvest

limit for that species. Except for wildlife taken pursuant to § ____ .10(d)(5)(iii)¹ or as otherwise provided for by this part, an animal taken as part of a community harvest limit counts toward every community member's harvest limit for that species taken under Federal or State of Alaska regulations.

Proposed Federal Regulation

§ ____ .25 Subsistence taking of fish, wildlife, and shellfish: general regulations

(c) Harvest limits

...

(5) Fish, wildlife, or shellfish taken by a participant in a community harvest system counts toward the community harvest limit or quota for that species as well as individual harvest limits, Federal or State, for each participant in that community harvest system, however, the take does not count toward individual harvest limits, Federal or State, of any non-participant. Fish, wildlife, or shellfish taken by someone who is not a participant in a community harvest system does not count toward any community harvest limit or quota.

(i) For the purposes of this provision, all residents of the community are deemed participants in the community harvest unless the Board-approved framework requires registration as a prerequisite to harvesting or receiving any fish, wildlife, or shellfish pursuant to that community harvest, in which case only those who register are deemed participants in that community harvest.

§ ____ .26 Subsistence taking of wildlife

(e) Possession and transportation of wildlife.

...

~~*(2) An animal taken under Federal or State regulations by any member of a community with an established community harvest limit for that species counts toward the community harvest limit for that species. Except for wildlife taken pursuant to § ____ .10(d)(5)(iii) or as otherwise provided for by this part, an animal taken as part of a community harvest limit counts toward every community member's harvest limit for that species taken under Federal or State of Alaska regulations.*~~

State of Alaska Regulations

State general regulations describing its community harvest program are in **Appendix 1**.

¹ § ____ .10(d)(5)(iii) *The fish and wildlife is taken by individuals or community representatives permitted a one-time or annual harvest for special purposes including ceremonies and potlatches;*

Federal Public Lands

Federal public lands comprise approximately 54% of Alaska statewide and consist of 36% U.S. Fish and Wildlife Service managed lands, 28% Bureau of Land Management managed lands, 25% National Park Service managed lands, and 11% U.S. Forest Service managed lands.

Customary and Traditional Use Determination

This is a statewide proposal for wildlife, fish, and shellfish.

Regulatory History

In 1991, after extensive public comment on the Federal Subsistence Management Program's first Temporary Rule, the Federal Subsistence Board (Board) committed to addressing community harvest limits and alternative permitting processes (56 Fed. Reg. 123, 29311 [June 26, 1991]).

In 1992, responding to approximately 40 proposals requesting community harvest systems and numerous public comments requesting alternative permitting systems, the Board supported the concept of adjusting seasons and harvest limits based on customs and traditions of a community (57 Fed. Reg. 103, 22531–2 [May 28, 1992]). The Board said specific conditions for the use of a particular harvest reporting system may be applied on a case-by-case basis and further development and refinement of guidelines for alternative permitting systems would occur as the Federal Subsistence Management Program evolved (57 Fed. Reg. 104, 22948 [May 29, 1992]). These regulations at _____.6 were modified to state that intent more clearly:

§ _____.6 Licenses, permits, harvest tickets, tags, and reports²

(f) The Board may implement harvest reporting systems or permit systems where:

- (1) The fish and wildlife is taken by an individual who is required to obtain and possess pertinent State harvest permits, tickets, or tags, or Federal permits, harvest tickets, or tags;*
- (2) A qualified subsistence user may designate another qualified subsistence user to take fish and wildlife on his or her behalf;*
- (3) The fish and wildlife is taken by individuals or community representatives permitted a one-time or annual harvest for special purposes including ceremonies and potlatches;*
- (4) The fish and wildlife is taken by representatives of a community permitted to do so in a manner consistent with the community's customary and traditional practices.*

In 1993, the Board adopted Proposal P93-12, which clarified that community harvest limits and individual harvest limits may not be accumulated, community harvest systems will be adopted on a

² Subsequently moved to § _____.10(d)(5) *Federal Subsistence Board—Power and Duties*.

case-by-case basis and defined under unit-specific regulations, and wildlife taken by a designated hunter for another person, counts toward the individual harvest limit of the person for whom the wildlife is taken. These new regulations specified that for wildlife, after taking your individual harvest limit, you may not continue to harvest in areas outside of your community harvest area (58 Fed. Reg. 103, 31255 [June 1, 1993]). These new regulations were the following:

§____.25 Subsistence taking of wildlife³

(c) Possession and transportation of wildlife

(1) Except as specified in §____.25(c)(3)(ii) [below] or (c)(4) [trapping regulations], or as otherwise provided, no person may take a species of wildlife in any Unit, or portion of a Unit, if that person's total statewide take of that species has already been obtained under Federal and State regulations in other Units, or portions of other Units.

(2) An animal taken under Federal or State regulations by any member of a community with an established community harvest limit for that species counts toward the community harvest for that species. Except for wildlife taken pursuant to §____.6(f)(3) [above], an animal taken by an individual as part of a community harvest limit counts toward that individual's bag limit for that species taken under Federal or State regulations for areas outside of the community harvest area.

(3) Individual bag limits (i) bag limits authorized by §____.25 and in State regulations may not be accumulated; (ii) Wildlife taken by a designated hunter for another person pursuant to §____.6(f)(2) [above], counts toward the individual bag limit of the person for whom the wildlife is taken.

In 1993, “community harvest systems” were adopted by the Board simply by adding the use of designated hunters to unit-specific regulations for Unit 25 West moose and Unit 26A sheep (58 FR 103, 31252–3 [June 1, 1993]). In this way, designated harvesters and resource quotas became a common method for allocating harvests communally.

In 1996, administrative clarification was made at §____.25(c)(2) to better represent the Board's intent (61 Fed. Reg. 147, 39711 [July 30, 1996]). Before this clarification was made, a member of a community with a community harvest limit who had not taken an individual harvest limit could take an individual harvest limit after the community had met its harvest limit. The effect of the clarification was that members of community in a community harvest system can harvest only as part of the community harvest system:

³ Subsequently moved to §____.26 *Taking of wildlife*.

§ ____ .25 Subsistence taking of wildlife

(c) Possession and transportation of wildlife

. . .

*(2) An animal taken under Federal or State regulations by any member of a community with an established community harvest limit for that species counts toward the community harvest for that species. Except for wildlife taken pursuant to § ____ .6(f)(3) [above], an animal taken ~~by an individual~~ as part of a community harvest limit counts toward ~~that individual's bag limit~~ **every community member's harvest limit** for that species taken under Federal or State regulations for areas outside of the community harvest area.*

Later, the language “or as otherwise provided for by this part” was added to the provision. The effect was to allow an exceptions to the provision if the exception was placed in regulation:

*(2) An animal taken under Federal or State regulations by any member of a community with an established community harvest limit for that species counts towards the community harvest limit for that species. Except for wildlife taken pursuant to § ____ .10(d)(5)(iii) **or as otherwise provided for by this part**, an animal taken as part of a community harvest limit counts toward every community member's harvest limit for that species taken under Federal or State of Alaska regulations.*

In April 2020, the Board adopted deferred Proposal WP18-19 with modification, which added a community harvest system for moose in Unit 11 and caribou and moose in Unit 13 to unit-specific regulations. The modification was to name individual communities within the Ahtna traditional use territory authorized to harvest moose in Units 11 and caribou and moose in Unit 13 as part of a community harvest system, subject to a framework established by the Board under unit-specific regulations (see Existing Federal Regulation section in Proposal WP22-36 analysis).

In July 2020, the Board approved Wildlife Special Action Request WSA20-02 with modification to: (1) name individual communities authorized to participate in the community harvest system on Federal public lands in Units 11, 12, and 13, specifically, the eight Ahtna traditional communities of Cantwell, Chistochina, Chitina, Copper Center, Gakona, Gulkana, Mentasta Lake, and Tazlina; (2) define the geographic boundaries of eligible communities as the most recent Census Designated Places established by the U.S. Census Bureau; (3) extend these actions through the end of the wildlife regulatory cycle (June 30, 2022); (4) specify that harvest reporting will take the form of reports collected from hunters by AITRC and be submitted directly to the land managers and OSM, rather than through Federal registration permits, joint State/Federal registration permits, or State harvest tickets; and (5) set the harvest quota for the species and units authorized in the community harvest system as the sum of individual harvest limits for those opting to participate in the system (OSM 2020).

In January 2021, the Board approved Wildlife Special Action WSA20-07 temporarily adding the following language to unit-specific regulations for moose and caribou in Units 11, 12, and 13:

“Animals taken by those opting to participate in this community harvest system do not count toward the harvest limits of any individuals who do not opt to participate in this community harvest system.” At this meeting, the Board also approved a community harvest system framework that describes additional details about implementation of the system (see analysis of Proposal WP22-36 Appendix 1) (OSM 2021).

Currently, the following community harvest systems are codified in Federal regulations: Lime Village for Unit 19 caribou and moose; Nikolai for Unit 19 sheep; the community of Wales for Unit 22 muskoxen; Anaktuvuk Pass for Units 24 and 26 sheep; Unit 25 black bear with a State community harvest permit; Ninilchik for Kasilof River and Kenai River community gillnets for salmon; and Cantwell, Chistochina, Chitina, Copper Center, Gakona, Gulkana, Mentasta Lake, and Tazlina for moose in Unit 11 and caribou and moose in Unit 13.

Current Events Involving the Species

Proposal WP22-36, submitted by AITRC, requests the Board adopt existing temporary regulations for regarding the community harvest system for moose and caribou in Unit 11, 12, and 13.

Cultural Knowledge and Traditional Practices

Community harvest and designated harvester provisions provide recognition of the customary and traditional practices of sharing and redistribution of harvests. A host of research supports a need for these alternative permitting systems in Federal subsistence regulations to harmonize fundamental harvesting characteristics of rural Alaskan communities with the Federal Subsistence Management Program. Family-based production is the foundation of the mixed subsistence-cash economy found in rural Alaskan communities (cf. Wolfe 1981, 1987; Wolfe and Walker 1987; Wolfe et al. 1984). Family-based production is when two or more individual households linked by kinship distribute the responsibility to harvest, process, and store wild resources based on factors such as skills and abilities, availability of able workers, sufficient income to purchase harvesting and processing technology, and other factors. Units of family-based production typically contain at least one “super-household” that produces surpluses of wild foods (Wolfe 1987). On a statewide basis, about 30% of households in a community are super-households that produce about 70% or more of the community’s wild food harvest (Sahlins 1972; Andrews 1988; Magdanz, Utermohle, and Wolfe 2002; Sumida 1989; Sumida and Andersen 1990). Conversely, 20% to 30% of households in units of family-based production did not produce enough food to feed members of that household (Sahlins 1972). Inequalities in individual and household production levels are equalized via processes of distribution (sharing and feasting) and exchange (trade and barter).

Recent studies on disparities in household food production demonstrate that super-households participate heavily in food-sharing. Wolfe et al. (2007) looked at household food production in 67 rural Alaska communities representing Aleut, Athabascan, Inupiat, Tlingit-Haida, and Yup’ik cultural groups. The majority of these communities were comprised of mostly Alaska Native households with at least one Native head of household, although communities in Southeast Alaska were ethnically mixed. The researchers found that there were household variables commonly associated with levels of

food production throughout these communities. Household variables including higher levels of income, participation in commercial fishing, and households with three or more adult males over 15 years of age were associated with higher levels of food production. Households in which there was a single or elder head of household were associated with lower levels of food production. Most remarkably, the study also demonstrated that high-producing households gave the most food to others and giving to other households may be a primary motivation for over-production. Wolfe et al. (2007) further recommended that policy and management regulations account for food production and sharing practices within Alaskan mixed subsistence-cash communities. They wrote:

The findings about the concentration of subsistence harvests also have social policy implications for the management of hunts and fisheries. Annual and daily bag limits that require that individuals or households harvest at equal levels, as is common for sport fishing and sport hunting, operate from different principles from those operating in subsistence systems. In the subsistence system, individuals and households commonly are not equivalent producers. Instead, a relatively small segment of high-producers harvest most of the fish or game. The average harvests among community households may be in line with bag and harvest limits required for conservation reasons, but the actual production is concentrated in a small number of households. Flexible regulations that allow for this type of concentrated harvest would be most compatible with the actual patterns of subsistence production (Wolfe et al. 2007:29).

Community harvest and designated harvester systems in use in the Federal Subsistence Management Program are intended to provide some flexibility in harvest regulations to make legal the activities of super-households in rural communities. Supporting the distribution of wild foods in villages allows people to continue their subsistence way of life.

Effects of the Proposal

If this proposal is adopted, then Federal regulations will recognize that the Board, when approving the framework for a community harvest system, may allow community members to choose whether they want to participate in the community harvest system or retain their individual harvest limits. The Federal regulations will specify that fish, wildlife, or shellfish harvested under a community harvest system will not count against the individual harvest limits of non-participants. Similarly, fish, wildlife, or shellfish harvested by non-participants will not count against the harvest limit set for the community harvest system. Effects to nonsubsistence uses, wildlife, fish, and shellfish, statewide, are not anticipated.

If this proposal is not adopted, then Federal regulations will continue to stipulate that any harvest within a community harvest system also counts toward the individual harvest limit of every community member regardless of whether they participate in the community harvest system. Additionally, the Board's authority to approve community harvest frameworks, and to allow community members to opt in or opt out of a community harvest, will not be clearly stated. Effects to nonsubsistence uses, wildlife, fish, and shellfish, statewide, are not anticipated.

OSM PRELIMINARY CONCLUSION

Support Proposal WP22-01.

Justification

Subsistence users and others will find these regulations less confusing and easier to use. In this way, the proposed regulatory changes provide more equitable harvest options and opportunities for subsistence users. They also prevent unintentional and unnecessary restrictions from being placed on any community members who choose not to participate in a community harvest system, and clarifies a current oversight in Federal regulation.

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APPENDIX 1

STATE OF ALASKA COMMUNITY HARVEST PROGRAM

5 AAC 92.074. Community subsistence harvest hunt areas

(a) The commissioner or the commissioner's designee may, under this section and 5 AAC 92.052, issue community-based subsistence harvest permits and harvest reports for big game species where the Board of Game (board) has established a community harvest hunt area under (b) of this section and 5 AAC 92.074.

(b) The board will consider proposals to establish community harvest hunt areas during regularly scheduled meetings to consider seasons and bag limits for affected species in a hunt area. Information considered by the board in evaluating the proposed action will include

(1) a geographic description of the hunt area;

(2) the sustainable harvest and current subsistence regulations and findings for the big game population to be harvested;

(3) a custom of community-based harvest and sharing of the wildlife resources harvested in the hunt area by any group; and

(4) other characteristics of harvest practices in the hunt area, including characteristics of the customary and traditional pattern of use found under 5 AAC 99.010(b).

(c) If the board has established a community harvest hunt area for a big game population, residents of the community or members of a group may elect to participate in a community harvest permit hunt in accordance with the following conditions:

(1) a person representing a group of 25 or more residents or members may apply to the department for a community harvest permit by identifying the community harvest hunt area and the species to be hunted, and by requesting that the department distribute community harvest reports to the individuals who subscribe to the community harvest permit; the community or group representative must

(A) provide to the department the names of residents or members subscribing to the community harvest permit and the residents' or members' hunting license numbers, permanent hunting identification card numbers, or customer service identification numbers, or for those residents or members under 18 years of age, the resident or member's birth date;

(B) ensure delivery to the department of validated harvest reports from hunters following the take of individual game animals, records of harvest information for

individual animals taken, and collected biological samples or other information as required by the department for management;

(C) provide the department with harvest information, including federal subsistence harvest information, within a specified period of time when requested, and a final report of all game taken under the community harvest permit within 15 days of the close of the hunting season or as directed in the permit; and

(D) make efforts to ensure that the applicable customary and traditional use pattern described by the board and included by the department as a permit condition, if any, is observed by subscribers including meat sharing; the applicable board finding and conditions will be identified on the permit; this provision does not authorize the community or group administrator to deny subscription to any community resident or group member;

(E) from July 1, 2014 until June 30, 2018, in the community harvest hunt area described in 5 AAC 92.074(d) , permits for the harvest of bull moose that do not meet the antler restrictions for other resident hunts in the area will be limited to one permit for every three households in the community or group. Beginning July 1, 2018, in the community harvest hunt area described in 5 AAC 92.074(d) , permits for the harvest of bull moose that do not meet the antler restrictions for other resident hunts in the area will be distributed to participants using the scoring criteria described in 5 AAC 92.070.

(2) a resident of the community or member of the group who elects to subscribe to a community harvest permit

(A) may not hold a harvest ticket or other state hunt permit for the same species where the bag limit is the same or for fewer animals during the same regulatory year; however, a person may hold harvest tickets or permits for same-species hunts in areas with a larger bag limit following the close of the season for the community harvest permit, except that in Unit 13, prior to July 1, 2018, only one caribou may be retained per household, and on or after July 1, 2018, up to two caribou may be retained per household;

(B) may not subscribe to more than one community harvest permit for a species during a regulatory year;

(C) must have in possession when hunting and taking game a community harvest report issued by the hunt administrator for each animal taken;

(D) must validate a community harvest report immediately upon taking an animal; and

(E) must report harvest and surrender validated harvest reports within five days, or sooner as directed by the department, of taking an animal and transporting it to the place of final processing for preparation for human use and provide information and biological samples required under terms of the permit;

(F) must, if the community harvest hunt area is under a Tier II permit requirement for the species to be hunted, have received a Tier II permit for that area, species, and regulatory year.

(G) participants in the community harvest hunt area described in 5 AAC 92.074(d) must commit to participation for two consecutive years. This does not apply to participants that applied in 2016 for the 2018 regulatory year.

(3) in addition to the requirements of (1) of this subsection, the community or group representative must submit a complete written report, on a form provided by the department, for the community or group participating in the community harvest hunt area described in 5 AAC 92.074(d), that describes efforts by the community or group to observe the customary and traditional use pattern described by board findings for the game populations hunted under the conditions of this community harvest permit; in completing the report, the representative must make efforts to collect a complete report from each household that is a member of the community or group that describes efforts by the household to observe the customary and traditional use pattern using the eight elements described in this paragraph; a copy of all household reports collected by the community or group representative shall be submitted to the department as a part of the representative's written report; complete reports must include information about efforts to observe the customary and traditional use pattern of the game population, as follows:

(A) Element 1: participation in a long-term, consistent pattern of noncommercial taking, use, and reliance on the game population: the number of years of taking and use of the game population; and involvement of multiple generations in the taking and use of the game population; and use of areas other than the community subsistence hunt area for harvest activities;

(B) Element 2: participation in the pattern of taking or use of the game population that follows a seasonal use pattern of harvest effort in the hunt area: the months and seasons in which noncommercial harvest activities occur in the hunt area;

(C) Element 3: participation in a pattern of taking or use of wild resources in the hunt area that includes methods and means of harvest characterized by efficiency and economy of effort and cost: costs associated with harvests; and methods used to reduce costs and improve efficiency of harvest; and number of species harvested during hunting activities;

(D) Element 4: participation in a pattern of taking or use of wild resources that occurs in the hunt area due to close ties to the area: number of years of taking and use of the game population; and involvement of multiple generations in the taking and use of the game population; and variety of harvesting activities that take place in the hunt area; and evidence of other areas used for harvest activities;

(E) Element 5: use of means of processing and preserving wild resources from the hunt area that have been traditionally used by past generations: complete listing of the parts of the harvested game that are used; and preservation methods of that game; and types of foods and other products produced from that harvest;

(F) Element 6: participation in a pattern of taking or use of wild resources from the hunt area that includes the handing down of knowledge of hunting skills, values, and lore about the hunt area from generation to generation: involvement of multiple generations in the taking and use of the game population; and evidence of instruction and training;

(G) Element 7: participation in a pattern of taking of wild resources from the hunt area in which the harvest is shared throughout the community: amount of harvest of the game population that is shared; and evidence of a communal sharing event; and support of those in need through sharing of the harvest of the game population; and

(H) Element 8: participation in a pattern that includes taking, use, and reliance on a wide variety of wild resources from the hunt area: the variety of resource harvest activities engaged in within the hunt area; and evidence of other areas used for harvest activities.

(d) Seasons for community harvest permits will be the same as those established for other subsistence harvests for that species in the geographic area included in a community harvest hunt area, unless separate community harvest hunt seasons are established. The total bag limit for a community harvest permit will be equal to the sum of the individual participants' bag limits, established for other subsistence harvests for that species in the hunt area or otherwise by the board. Seasons and bag limits may vary within a hunt area according to established

subsistence regulations for different game management units or other geographic delineations in a hunt area.

(e) Establishment of a community harvest hunt area will not constrain nonsubscribing residents of the community or members of the group from participating in subsistence harvest activities for a species in that hunt area using individual harvest tickets or other state permits authorized by regulation, nor will it require any resident of the community or member of the group eligible to hunt under existing subsistence regulations to subscribe to a community harvest permit.

(f) The department may disapprove an application for a community subsistence harvest permit from a community or group that has previously failed to comply with requirements in (c)(1) and (3) of this section. The failure to report by the community or group representative under (c)(1) and (3) of this section may result in denial of a community subsistence harvest permit during the following regulatory year. The department must allow a representative the opportunity to request a hearing if the representative fails to submit a complete report as required under (c)(1) and (3) of this section. A community or group aggrieved by a decision under this subsection will be granted a hearing before the commissioner or the commissioner's designee, if the community or group representative makes a request for a hearing in writing to the commissioner within 60 days after the conclusion of the hunt for which the person failed to provide a report. The commissioner may determine that the penalty provided under this subsection will not be applied if the community or group representative provides the information required on the report and if the commissioner determines that

(1) the failure to provide the report was the result of unavoidable circumstance; or

(2) extreme hardship would result to the community or group.

(g) A person may not give or receive a fee for the taking of game or receipt of meat under a community subsistence harvest permit.

(h) Nothing in this section authorizes the department to delegate to a community or group representative determination of the lawful criteria for selecting who may hunt, for establishing any special restrictions for the hunt and for the handling of game, and for establishing the terms and conditions for a meaningful communal sharing of game taken under a community harvest permit.

(i) In this section,

(1) "fee" means a payment, wage, gift, or other remuneration for services provided while engaged in hunting under a community harvest permit; and does not include reimbursement for actual expenses incurred during the hunting activity within the scope of the community harvest permit, or a non-cash exchange of subsistence-harvested resources.

(2) a "community" or "group" is a mutual support network of people who routinely (at least several times each year) provide each other with physical, emotional, and nutritional assistance in a multi-generational and inter/intra familial manner to assure the long-term welfare of individuals, the group, and natural resources they depend on; for purposes of this regulation, a "community" or "group" shares a common interest in, and participation in uses of, an identified area and the wildlife populations in that area, that is consistent with the customary and traditional use pattern of that wildlife population and area as defined by the board.

WP22-02 Executive Summary	
General Description	Proposal WP22-02 requests to remove language from designated hunting regulations prohibiting the use of a designated hunter permit by a member of community operating under a community harvest system. <i>Submitted by the Office of Subsistence Management.</i>
Proposed Regulation	See page 206
OSM Preliminary Conclusion	Support
Southeast Alaska Subsistence Regional Advisory Council Recommendation	
Southcentral Alaska Subsistence Regional Advisory Council Recommendation	
Kodiak/Aleutians Subsistence Regional Advisory Council Recommendation	
Bristol Bay Subsistence Regional Advisory Council Recommendation	
Yukon-Kuskokwim Delta Subsistence Regional Advisory Council Recommendation	
Western Interior Alaska Subsistence Regional Advisory Council Recommendation	
Seward Peninsula Subsistence Regional Advisory Council Recommendation	

WP22-02 Executive Summary	
Northwest Arctic Subsistence Regional Advisory Council Recommendation	
Eastern Interior Alaska Subsistence Regional Advisory Council Recommendation	
North Slope Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

DRAFT STAFF ANALYSIS WP22-02

ISSUES

Wildlife Proposal WP22-02, submitted by the Office of Subsistence Management (OSM), requests to remove language from designated hunting regulations prohibiting the use of a designated hunter permit by a member of community operating under a community harvest system.

DISCUSSION

While developing the framework for a community harvest system in summer 2020, Ahtna Intertribal Resource Commission (AITRC) representatives realized that residents of communities in a community harvest system cannot designate another person to harvest on their behalf, pursuant to Federal designated hunter regulations. AITRC and Federal agency staff perceived this provision as unfair to community members who choose not to participate in a community harvest system because their options for acquiring their individual harvest limits are curtailed involuntarily.

The proponent clarified that the intent of this proposal is to allow members of a community with a community harvest system to designate a hunter to harvest on their behalf to fulfill either their individual harvest limit or to count toward the community harvest limit depending on whether or not they choose to participate in the community harvest system.

Existing Federal Regulation

36 CFR 242 and 50 CFR 100.25(e) Hunting by designated harvest permit

If you are a Federally qualified subsistence user (recipient), you may designate another Federally qualified subsistence user to take deer, moose, and caribou, and in Units 1-5, goats, on your behalf unless you are a member of a community operating under a community harvest system or unless unit-specific regulations in § _____.26 preclude or modify the use of the designated hunter system or allow the harvest of additional species by a designated hunter. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients but may have no more than two harvest limits in his/her possession at any one time except for goats, where designated hunters may have no more than one harvest limit in possession at any one time, and unless otherwise specified in unit-specific regulations in § _____.26.

§ _____.26(n)(6)(ii) Unit 6 specific regulations

(D) A federally qualified subsistence user (recipient) who is either blind, 65 years of age or older, at least 70 percent disabled, or temporarily disabled may designate another federally qualified subsistence user to take any moose, deer, black bear, and beaver on his or her behalf in Unit 6, and goat in Unit 6D, unless the recipient is a member of a community operating

under a community harvest system. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients, but may have no more than one harvest limit in his or her possession at any one time.

§ ____ .26(n)(9)(iii) Unit 9 specific regulations

(E) For Units 9C and 9E only, a federally qualified subsistence user (recipient) of Units 9C and 9E may designate another federally qualified subsistence user of Units 9C and 9E to take bull caribou on his or her behalf unless the recipient is a member of a community operating under a community harvest system. The designated hunter must obtain a designated hunter permit and must return a completed harvest report and turn over all meat to the recipient. There is no restriction on the number of possession limits the designated hunter may have in his/her possession at any one time.

(F) For Unit 9D, a federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take caribou on his or her behalf unless the recipient is a member of a community operating under a community harvest system. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients but may have no more than four harvest limits in his/her possession at any one time.

§ ____ .26(n)(10) Unit 10 specific regulations

(iii) In Unit 10—Unimak Island only, a federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take caribou on his or her behalf unless the recipient is a member of a community operating under a community harvest system. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients but may have no more than four harvest limits in his/her possession at any one time.

§ ____ .26(n)(22)(iii) Unit 22 specific regulations

(E) A federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take musk oxen on his or her behalf unless the recipient is a member of a community operating under a community harvest system. The designated hunter must get a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients in the course of a season, but have no more than two harvest limits in his/her possession at any one time, except in Unit 22E where a resident of Wales or Shishmaref acting as a designated hunter may hunt for any number of recipients, but have no more than four harvest limits in his/her possession at any one time.

§ ____ .26(n)(23)(iv) Unit 23 specific regulations

(D) For the Baird and DeLong Mountain sheep hunts—A federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take sheep on his or her behalf unless the recipient is a member of a community operating under a community harvest system. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for only one recipient in the course of a season and may have both his and the recipients' harvest limits in his/her possession at the same time.

(F) A federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take musk oxen on his or her behalf unless the recipient is a member of a community operating under a community harvest system. The designated hunter must get a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients, but have no more than two harvest limits in his/her possession at any one time.

§ ____ .26(n)(26)(iv) Unit 26 specific regulations

(C) In Kaktovik, a federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take sheep or musk ox on his or her behalf unless the recipient is a member of a community operating under a community harvest system. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients but may have no more than two harvest limits in his/her possession at any one time.

(D) For the DeLong Mountain sheep hunts—A federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take sheep on his or her behalf unless the recipient is a member of a community operating under a community harvest system. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for only one recipient in the course of a season and may have both his and the recipient's harvest limits in his/her possession at the same time.

Proposed Federal Regulation

§ ____ .25(e) Hunting by designated harvest permit

If you are a Federally qualified subsistence user (recipient), you may designate another Federally qualified subsistence user to take deer, moose, and caribou, and in Units 1-5, goats, on your behalf ~~unless you are a member of a community operating under a community harvest system or~~ unless unit-specific regulations in §100.26 preclude or modify the use of the designated hunter system or allow the harvest of additional species by a designated hunter. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients but may have no

more than two harvest limits in his/her possession at any one time except for goats, where designated hunters may have no more than one harvest limit in possession at any one time, and unless otherwise specified in unit-specific regulations in §100.26.

§ ____ .26(n)(6)(ii) Unit 6 specific regulations

(D) A federally qualified subsistence user (recipient) who is either blind, 65 years of age or older, at least 70 percent disabled, or temporarily disabled may designate another federally qualified subsistence user to take any moose, deer, black bear, and beaver on his or her behalf in Unit 6, and goat in Unit 6D, ~~unless the recipient is a member of a community operating under a community harvest system.~~ The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients, but may have no more than one harvest limit in his or her possession at any one time.

§ ____ .26(n)(9)(iii) Unit 9 specific regulations

(E) For Units 9C and 9E only, a federally qualified subsistence user (recipient) of Units 9C and 9E may designate another federally qualified subsistence user of Units 9C and 9E to take bull caribou on his or her behalf ~~unless the recipient is a member of a community operating under a community harvest system.~~ The designated hunter must obtain a designated hunter permit and must return a completed harvest report and turn over all meat to the recipient. There is no restriction on the number of possession limits the designated hunter may have in his/her possession at any one time.

(F) For Unit 9D, a federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take caribou on his or her behalf ~~unless the recipient is a member of a community operating under a community harvest system.~~ The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients but may have no more than four harvest limits in his/her possession at any one time.

§ ____ .26(n)(10) Unit 10 specific regulations

(iii) In Unit 10—Unimak Island only, a federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take caribou on his or her behalf ~~unless the recipient is a member of a community operating under a community harvest system.~~ The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients but may have no more than four harvest limits in his/her possession at any one time.

§ _____.26(n)(22)(iii) Unit 22 specific regulations

(E) A federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take musk oxen on his or her behalf ~~unless the recipient is a member of a community operating under a community harvest system~~. The designated hunter must get a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients in the course of a season, but have no more than two harvest limits in his/her possession at any one time, except in Unit 22E where a resident of Wales or Shishmaref acting as a designated hunter may hunt for any number of recipients, but have no more than four harvest limits in his/her possession at any one time.

§ _____.26(n)(23)(iv) Unit 23 specific regulations

(D) For the Baird and DeLong Mountain sheep hunts—A federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take sheep on his or her behalf ~~unless the recipient is a member of a community operating under a community harvest system~~. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for only one recipient in the course of a season and may have both his and the recipients' harvest limits in his/her possession at the same time.

(F) A federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take musk oxen on his or her behalf ~~unless the recipient is a member of a community operating under a community harvest system~~. The designated hunter must get a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients, but have no more than two harvest limits in his/her possession at any one time.

§ _____.26(n)(26)(iv) Unit 26 specific regulations

(C) In Kaktovik, a federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take sheep or musk ox on his or her behalf ~~unless the recipient is a member of a community operating under a community harvest system~~. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients but may have no more than two harvest limits in his/her possession at any one time.

(D) For the DeLong Mountain sheep hunts—A federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take sheep on his or her behalf ~~unless the recipient is a member of a community operating under a community harvest system~~. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for only one recipient in the course of a season and may have both his and the recipient's harvest limits in his/her possession at the same time.

Existing State Regulation

The State of Alaska provides for the transfer of harvest limits from one person to another through its proxy hunting program (5 AAC 92.011; see **Appendix 1**). **Table 1** is a side-by-side comparison of the State’s proxy system to the Federal designated hunter system.

Table 1. State of Alaska Proxy System compared to Federal Designated Hunter System.

State of Alaska Proxy System	Federal Subsistence Management Program Designated Hunter System
Applies where there is an open State harvest season.	Applies to Federal public lands when there is an open Federal harvest season.
Applies to caribou, deer, and moose.	Applies to caribou, deer, moose, and in Units 1–5, goats, as well as other species identified in unit-specific regulations.
Available to a hunter who is blind, physically or developmentally disabled (requires physician’s affidavit), or 65 years of age or older	Available to Federally qualified subsistence users.
Either the recipient or the hunter may apply for the authorization.	Recipient obtains a permit or harvest ticket and designates another Federally qualified subsistence user to harvest on his/her behalf. Designated hunter obtains a Federal designated hunter permit.
No person may be a proxy for more than one recipient at a time.	A person may hunt for any number of recipients, but may have no more than two harvest limits in his/her possession at any one time.
Antler destruction is required.	No antler destruction is required.

Federal Public Lands

Federal public lands comprise approximately 54% of Alaska statewide and consist of 36% U.S. Fish and Wildlife Service managed lands, 28% Bureau of Land Management managed lands, 25% National Park Service managed lands, and 11% U.S. Forest Service managed lands.

Customary and Traditional Use Determination

This is a statewide proposal regarding wildlife.

Regulatory History

In 1991, after extensive public comment on the Federal Subsistence Management Program’s first Temporary Rule, the Federal Subsistence Board committed to addressing community harvest limits and alternative permitting processes (56 Fed. Reg. 123, 29411 [June 26, 1991]).

In 1992, responding to approximately 40 proposals requesting community harvest systems and numerous public comments requesting alternative permitting systems, the Board supported the concept of adjusting seasons and harvest limits based on customs and traditions of a community (57 Fed. Reg. 103, 22531–2 [May 28, 1992]). The Board said specific conditions for the use of a particular harvest reporting system may be applied on a case-by-case basis and further development and refinement of guidelines for alternative permitting systems would occur as the Federal Subsistence Management Program evolved (57 Fed. Reg. 104, 22948 [May 29, 1992]). These regulations at _____.6 were modified to state that intent more clearly:

§ _____.6 Licenses, permits, harvest tickets, tags, and reports¹

(f) The Board may implement harvest reporting systems or permit systems where:

(1) The fish and wildlife is taken by an individual who is required to obtain and possess pertinent State harvest permits, tickets, or tags, or Federal permits, harvest tickets, or tags;

(2) A qualified subsistence user may designate another qualified subsistence user to take fish and wildlife on his or her behalf;

(3) The fish and wildlife is taken by individuals or community representatives permitted a one-time or annual harvest for special purposes including ceremonies and potlatches;

(4) The fish and wildlife is taken by representatives of a community permitted to do so in a manner consistent with the community's customary and traditional practices.

In 1993, the Board adopted Proposal P93-12, which clarified that community harvest limits and individual harvest limits may not be accumulated, community harvest systems will be adopted on a case-by-case basis and defined under unit-specific regulations, and wildlife taken by a designated hunter for another person, counts toward the individual harvest limit of the person for whom the wildlife is taken. These new regulations specified that for wildlife, after taking your individual harvest limit, you may not continue to harvest in areas outside of your community harvest area (58 Fed. Reg. 103, 31255 [June 1, 1993]). These new regulations were the following:

§ _____.25 Subsistence taking of wildlife²

(c) Possession and transportation of wildlife

(1) Except as specified in § _____.25(c)(3)(ii) [below] or (c)(4) [trapping regulations], or as otherwise provided, no person may take a species of wildlife in any Unit, or portion of a Unit, if that person's total statewide take of that species has already been obtained under Federal and State regulations in other Units, or portions of other Units.

¹ Subsequently moved to § _____.10(d) *Federal Subsistence Board—Power and Duties.*

² Subsequently moved to § _____.26 *Taking of wildlife.*

(2) An animal taken under Federal or State regulations by any member of a community with an established community harvest limit for that species counts toward the community harvest for that species. Except for wildlife taken pursuant to § ____ .6(f)(3) [above], an animal taken by an individual as part of a community harvest limit counts toward that individual's bag limit for that species taken under Federal or State regulations for areas outside of the community harvest area.

(3) Individual bag limits (i) bag limits authorized by § ____ .25 and in State regulations may not be accumulated; (ii) Wildlife taken by a designated hunter for another person pursuant to § ____ 6(f)(2) [above], counts toward the individual bag limit of the person for whom the wildlife is taken.

In 1993, community harvest strategies were adopted by the Board simply by adding the use of designated hunters into unit-specific regulations for Unit 25 West moose and Unit 26C sheep (58 Fed. Reg. 103, 31252–3 [June 1, 1993]). In this way, designated harvesters and resource quotas became a common method for allocating harvests communally.

Unit 25(D)(West)—. . . 1 antlered moose by a Federal registration permit. Alternate permits allowing for designated hunters are available to qualified applicants who reside in Beaver, Birch Creek, or Stevens Village. Moose hunting on public land in this portion of Unit 25(D)(West) is closed at all times except for residents of Beaver, Birch Creek and Stevens Village during seasons identified above. The moose season will be closed when 30 antlered moose have been harvested in the entirety of Unit 25D West (58 Fed. Reg. 103, 31287 [June 1, 1993]).

Unit 26(C)—3 sheep per year; the Aug. 10–Sept 20 season is restricted to 1 ram with 7/8 curl horn or larger. A State registration permit is required for the Oct. 1–Apr. 30 season, except for residents of the City of Kaktovik. Kaktovik residents may harvest sheep in accordance with a Federal community harvest strategy for Unit 26(C) which provides for the take of up to two bag limits of 3 sheep by designated hunter. Procedures for Federal permit issuance and community reporting will be mutually developed by Kaktovik and Federal representatives prior to the season opening. Open season: Aug. 10–Sept. 30 and Oct. 1–Apr. 30 (58 Fed. Reg. 103, 31289 [June 1, 1993]).

In 1994, the Board rejected four proposals concerning the use of designated hunters to harvest wildlife for others and redirected staff to work with Regional Advisory Councils and develop regulations for the 1995/96 regulatory year that address designated harvesters on a state-wide basis (59 Fed. Reg. 29033, June 3, 1994).

In October 1994, a Designated Hunter Task Force published its report describing four options for alternative permitting systems (OSM 1994).

In 1996, administrative clarification was made at § ____ .25(c)(2) to better represent the Board’s intent (61 Fed. Reg. 147, 39711 [July 30, 1996]). Before this clarification was made, a member of a community with a community harvest limit who had not taken an individual harvest limit could take an individual harvest limit after the community had met its harvest limit. The effect of the clarification was that members of community in a community harvest system can harvest only as part of the community harvest system:

§ ____ .25 Subsistence taking of wildlife

(c) Possession and transportation of wildlife

...

*(2) An animal taken under Federal or State regulations by any member of a community with an established community harvest limit for that species counts toward the community harvest for that species. Except for wildlife taken pursuant to § ____ .6(f)(3) [above], an animal taken ~~by an individual~~ as part of a community harvest limit counts toward ~~that individual's bag limit~~ **every community member's harvest limit** for that species taken under Federal or State regulations for areas outside of the community harvest area.*

Later, the language “or as otherwise provided for by this part” was added to the provision. The effect was to allow an exception to the provision if the exception was placed in regulation:

*(2) An animal taken under Federal or State regulations by any member of a community with an established community harvest limit for that species counts towards the community harvest limit for that species. Except for wildlife taken pursuant to § ____ .10(d)(5)(iii) **or as otherwise provided for by this part**, an animal taken as part of a community harvest limit counts toward every community member's harvest limit for that species taken under Federal or State of Alaska regulations.*

In 2001, administrative clarifications were added to regulations at § ____ .25(e) *Hunting by designated harvest permit*. New provisions stipulated that a designated hunter recipient may not be a member of a community operating under a community harvest system, reflecting § ____ .25(c)(2), above (66 Fed. Reg. 122, 33758 [June 25, 2001]). These new provisions were the following:

§ ____ .25 Subsistence taking of fish, wildlife, and shellfish: general regulations³

(e) Hunting by designated harvest permit

(1) As allowed by § ____ .26 [Subsistence taking of wildlife], if you are a Federally-qualified subsistence user, you (beneficiary) may designate another Federally-qualified

³ § ____ .25 was formerly *Subsistence taking of wildlife* that was moved to § ____ .26 to make room for these *general regulations*.

*subsistence user to take wildlife on your behalf **unless you are a member of a community operating under a community harvest system.***

(2) The designated hunter must obtain a designated hunter permit and must return a completed harvest report.

(3) You may not designate more than one person to take or attempt to take fish on your behalf at one time.

(4) The designated hunter may hunt for any number of recipients but may have no more than two harvest limits in his/her possession at any one time, unless otherwise specified in § _____.26.

After 1994, the Board recommenced adopting designated harvester provisions in unit-specific regulations through 2002.

Prior to 2003, the Board adopted designated hunter regulations for 21 unit-specific hunts. In 2003, the Board established the statewide designated hunter system, based on Regional Advisory Council recommendations, providing opportunities for subsistence users to receive deer, caribou, and moose from designated hunters, subject to unit-specific regulations to include other species and special provisions (68 Fed. Reg. 38466 [June 27, 2003]). Where Councils agreed with these general statewide provisions, then unit-specific regulations were rescinded unless they included other species or special provisions.

In April 2020, the Board adopted deferred Proposal WP18-19 with modification to establish a community harvest system moose in Units 11 and caribou and moose in Unit 13 that will be administered by the Ahtna Intertribal Resource Commission (AITRC). The modification was to name individual communities within the Ahtna traditional use territory authorized to harvest caribou and moose in Unit 13 and moose in Unit 11 as part of a community harvest system, subject to a framework established by the Board under unit specific regulations. While developing the framework for the community harvest system over the summer of 2020, AITRC representatives and Federal agency staff realized that current Federal regulations prevent the use of designated hunters by any community member whether or not they choose to participate in the community harvest system (OSM 2020). In January 2021, the Board approved the community harvest system framework that describes additional details about implementation of the system (OSM 2021a).

Harvest History

The Designated Hunter Permit database is maintained at the Office of Subsistence Management. **Table 2** describes the use of the designated hunter system since 2002 when the permit system was implemented. Designated hunters have reported harvesting caribou, deer, moose, sheep, goats, and muskoxen. Most of the reported harvest by designated hunters is for deer (84%, or 4,717,), and most of those are taken from Southeast Alaska (Units 1–5). Designated hunter harvests of caribou account for 12% (658 caribou), and moose 4% (212 moose).

Table 2. Use of Federal designated hunter system based on completed harvest reports 2002-2020 cumulative, by species and management unit (OSM 2021b).

Management Unit	Number of Animals Harvested by Designated Hunters 2002-2020
Caribou	
9	4
12	109
13	477
17	8
18	6
20	31
Unknown	23
Total	658
Dall Sheep	
23	3
Deer	
1	57
2	146
3	1,178
4	22
6	0
8	10
2	727
4	1,836
5	11
6	3
8	672
Unknown	55
Total	4,717
Moose	
1	9
3	9
5	34
6	36
11	7
12	1
13	67
15	18
18	3
19	12
21	2
24	5
25	1
26	2
Unknown	6
Total	212

Continued on next page.

Management Unit	Number of Animals Harvested by Designated Hunters 2002-2020
<i>Continued from previous page.</i>	
Management Unit	Number of Animals Harvested by Designated Hunters 2002-2020
Mountain Goats	
1	1
4	5
Total	6
Muskoxen	
22	3

Cultural Knowledge and Traditional Practices

See the Cultural Knowledge and Traditional Practices section in the Proposal WP22-01 analysis.

Effects of the Proposal

If this proposal is adopted, then Federal designated hunter regulations will no longer preclude members of communities with a community harvest system from designating another person to take wildlife on their behalf to fulfill either their individual harvest limit or count toward the community harvest limit, pursuant to Federal designated hunter regulations. Effects to nonsubsistence uses or wildlife are not anticipated.

If this proposal is not adopted, then Federal designated hunting regulations will continue to preclude residents of communities in a community harvest system from designating another person to take wildlife on their behalf, even though some residents may choose not to participate in the community harvest system. Effects to nonsubsistence uses or wildlife are not anticipated.

OSM PRELIMINARY CONCLUSION

Support Proposal WP22-02.

Justification

The intent of the proposed regulation change is to allow members of a community with a community harvest system to designate another person to harvest on their behalf to meet either their individual harvest limit or count toward the community harvest limit, pursuant to Federal designated harvester regulations. Therefore, the statements in general and unit-specific regulations addressed by this proposal, WP22-02, will no longer be relevant and should be removed. Additionally, these regulatory changes will provide more equitable harvest options and opportunities for subsistence users.

LITERATURE CITED

OSM. 1994. Report of the designated hunter task force. Office of Subsistence Management, USFWS. Anchorage, AK. 34 pages.

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OSM. 2021a. Federal Subsistence Board News Release, February 3, 2021: Federal Subsistence Board approves changes to subsistence fishing regulations. <https://www.doi.gov/subsistence/news/general/federal-subsistence-board-approves-changes-subsistence-fishing-0>. Retrieved July 14, 2021. Office of Subsistence Management, USFWS, Anchorage, AK.

OSM 2021b. Federal permit system. Electronic database. Office of Subsistence Management, USFWS, Anchorage, AK.

APPENDIX 1

STATE PROXY HUNTING REGULATIONS

5 AAC 92.011. Taking of game by proxy

(a) A resident hunter (the proxy) holding a valid resident hunting license may take specified game for another resident (the beneficiary) who is blind, physically or developmentally disabled, or 65 years of age or older, as authorized by AS 16.05.405 and this section.

(b) Both the beneficiary and the proxy must possess copies of a completed proxy authorization form issued by the department. The completed authorization must include

(1) names, addresses, hunting license numbers, and signatures of the proxy and the beneficiary;

(2) number of the required harvest ticket report or permit harvest report;

(3) effective dates of the authorization; and

(4) signature of the issuing agent.

(c) A proxy authorization may not be used to take a species of game for a beneficiary for more than the length of the permit hunt season listed on the proxy authorization or for the maximum length of the species general season listed on the proxy authorization.

(d) A person may not be a proxy

(1) for more than one beneficiary at a time;

(2) more than once per season per species in Unit 13;

(3) for Tier II Caribou in Unit 13, unless the proxy is a Tier II permittee;

(4) for more than one person per regulatory year for moose in Units 20(A) and 20(B).

(e) Repealed 7/26/97.

(f) A proxy who takes game for a beneficiary shall, as soon as practicable, but not later than 30 days after taking game, personally deliver all parts of the game removed from the field to the beneficiary.

(g) Except for reporting requirements required by (h) of this section, a proxy who hunts or kills game for a beneficiary is subject to all the conditions and requirements that would apply to the beneficiary if the beneficiary personally hunted or killed the game.

(h) Reporting requirements for proxy and beneficiary are as follows:

(1) if the proxy takes the bag limit for the beneficiary, the proxy shall provide the beneficiary with all the information necessary for the beneficiary to complete and return the harvest ticket report or permit harvest report, as required by regulation, to the department within the time periods specified for such reports; the beneficiary is responsible for the timely return of the harvest ticket and permit harvest reports;

(2) if the proxy is unsuccessful or does not take the bag limit for the beneficiary, the proxy shall provide the beneficiary with any information necessary for the beneficiary to complete and return the harvest ticket report or permit harvest report, as required by regulation, to the department within the time periods specified for such reports; the beneficiary is responsible for the timely return of the harvest ticket and permit harvest reports;

(3) the department may require the proxy to complete a proxy hunter report issued with the authorization form and mail it to the department within 15 days after the effective period of the authorization.

(i) A person may not give or receive remuneration in order to obtain, grant, or influence the granting of a proxy authorization.

(j) A proxy participating in a proxy hunt must remove at least one antler from the skull plate or cut the skull plate in half, on an antlered animal, for both the proxy's animal and the beneficiary's animal before leaving the kill site, unless the department has established a requirement that complete antlers and skull plates must be submitted to the department.

(k) Proxy hunting under this section is only allowed for

(1) caribou;

(2) deer;

(3) moose in Tier II hunts, any-bull hunts, and antlerless moose hunts; and

(4) emperor geese.

(l) Notwithstanding (k) of this section, proxy hunting is prohibited in the following hunts where the board has determined that the use of the proxy would allow circumvention of harvest restrictions specified by the board, or where the board has otherwise directed:

(1) Unit 20(E) moose registration hunts and Units 20(B), 20(D), 20(E), 20(F), and 25(C) Fortymile and White Mountains caribou registration hunts;

(2) Units 21(B), 21(C), 21(D), and 24 moose hunts if either the proxy or the beneficiary holds a drawing permit for Units 21(B), 21(C), 21(D), or 24 moose hunts;

(3) Units 9(A) and 9(B), unit 9(C), that portion within the Alagnak River drainage, and units 17(B), 17(C), 18, 19(A), and 19(B) caribou hunts from August 1 through October 31;

(4) Unit 5(A) deer hunts from October 15 through October 31;

(5) Unit 20(D), within the Delta Junction Management Area, the moose drawing hunt for qualified disabled veterans.

WP22–33 Executive Summary	
General Description	Proposal WP22-33 requests eliminating the sealing requirement for black bear in Units 11 and 12. <i>Submitted by: Wrangell-St. Elias National Park Subsistence Resource Commission (WRST SRC)</i>
Proposed Regulation	<p>§__.26</p> <p><i>(j) Sealing of bear skins and skulls. (1) Sealing requirements for bear apply to brown bears taken in all Units, except as specified in this paragraph (j), and black bears of all color phases taken in Units 1-7, 1313-17, and 20.</i></p>
OSM Preliminary Conclusion	Support Proposal WP22-33.
Southeast Alaska Subsistence Regional Advisory Council Recommendation	
Southcentral Alaska Subsistence Regional Advisory Council Recommendation	
Kodiak/Aleutians Subsistence Regional Advisory Council Recommendation	
Bristol Bay Subsistence Regional Advisory Council Recommendation	
Yukon-Kuskokwim Delta Subsistence Regional Advisory Council Recommendation	
Western Interior Alaska Subsistence Regional	

WP22–33 Executive Summary	
Advisory Council Recommendation	
Seward Peninsula Subsistence Regional Advisory Council Recommendation	
Northwest Arctic Subsistence Regional Advisory Council Recommendation	
Eastern Interior Alaska Subsistence Regional Advisory Council Recommendation	
North Slope Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

DRAFT STAFF ANALYSIS
WP22-33

ISSUES

Proposal WP22-33, submitted by the Wrangell-St. Elias National Park Subsistence Resource Commission (WRST SRC), requests eliminating the sealing requirement for black bear in Units 11 and 12.

DISCUSSION

The proponent states that people living in remote locations need to drive to an Alaska Department of Fish and Game (ADF&G) office to have bears sealed. For one SRC member, this is roughly 260 miles or more round-trip. The extra salvage necessary to seal subsistence black bears in Units 11 and 12 is an undue hardship for subsistence hunters who are mainly interested in the meat.

The proponent further states that Federal regulations are currently more stringent than State regulations, which only require harvest tickets, but not sealing. The proponent states that harvest ticket reports provide sufficient harvest information to monitor and protect black bear populations without sealing, and there is not currently a conservation concern for black bear. One SRC member noted that numerous sightings from fall flights indicate Unit 11 has a robust black bear population, while another member has personally harvested two bears in one year out of a small valley and within a couple days, new bears had moved into the area.

The proponent additionally requests that harvest ticket and sealing requirements be included in the unit specific regulations, instead of with the general provisions in the front of the regulations booklet, stating this would be clearer and easier for subsistence users to understand as the current layout of the Federal Subsistence Management Regulations booklet is confusing.

The proponent's request that bear sealing and permit/harvest ticket requirements be more clearly presented in the public regulatory booklet is outside the scope of a regulatory proposal. However, the suggestion has been forwarded to the appropriate reviewer.

Existing Federal Regulation**§__.26**

(j) Sealing of bear skins and skulls. (1) Sealing requirements for bear apply to brown bears taken in all Units, except as specified in this paragraph (j), and black bears of all color phases taken in Units 1-7, 11-17, and 20.

Proposed Federal Regulation

§__.26

(j) Sealing of bear skins and skulls. (1) Sealing requirements for bear apply to brown bears taken in all Units, except as specified in this paragraph (j), and black bears of all color phases taken in Units 1-7, ~~11~~13-17, and 20.

Existing State Regulation

5 AAC 92.165. Sealing of bear skins and skulls

(a) Sealing is required for hides and skulls of brown bear taken in any unit in the state, hides and skulls of black and brown bear taken in any unit in the state before the hide or skull is sold, hides and skulls of black bear of any color variation taken from January 1 through May 31, and skulls of black bear of any color variation taken from June 1 through December 31 in Units 1 - 7, 14(A), 14(C), 15 - 17, and 20(B). The seal must remain on the skin until the tanning process has commenced. A person may not possess or transport the untanned skin or skull of a bear taken in a unit where sealing is required, or export from the state the untanned skin or skull of a bear taken anywhere in the state, unless the skin or the skull, or both as required in this section have been sealed by a department representative within 30 days after the taking, or a lesser time if requested by the department

Extent of Federal Public Lands/Waters

Unit 11 is comprised of 87% Federal public lands and consist of 84% National Park Service (NPS) managed lands, 3% U.S. Fish and Wildlife Service (USFWS), and 0.1% Bureau of Land Management (BLM) managed land.

Unit 12 is comprised of 60% Federal public lands and consist of 48% NPS managed lands, 11% USFWS managed lands, and 1% BLM managed lands.

Customary and Traditional Use Determinations

Rural residents of Chistochina, Chitina, Copper Center, Gakona, Glennallen, Gulkana, Kenny Lake, Mentasta Lake, Slana, Tazlina, Tonsina, and Units 11 and 12 have a customary and traditional use determination for black bear in Unit 11 north of Sanford River.

Rural residents of Chistochina, Chitina, Copper Center, Gakona, Glennallen, Gulkana, Kenny Lake, Mentasta Lake, Nabesna Road (mileposts 25-46), Slana, Tazlina, Tok Cutoff Road (mileposts 79-110), Tonsina, and Unit 11 have a customary and traditional use determination for black bear in Unit 11 remainder.

The Federal Subsistence Board has not made a customary and traditional use determination for black bear in Unit 12. Therefore, all rural residents of Alaska may harvest this species in this unit.

Special requirements of NPS lands: Under the guidelines of ANILCA, NPS regulations identify Federally qualified subsistence users in National Parks and Monuments by: 1) identifying residents zone communities which include a significant concentration of people who have customarily and traditionally use subsistence resources on park lands/ and 2) identifying and issuing subsistence use permits to individuals residing outside of the resident zone communities who have a personal or family history of subsistence use.

Regulatory History

During the Russian Period in Alaska (1799 – 1867), the Russian American Company exported black bear skins to St. Petersburg and Asia (Bockstoce 2009). The sale of black bear skins was generally allowed until 1971 when the State banned the practice of selling black bear skins and implemented mandatory sealing requirements (State of Alaska 1971). Currently, however, black bear hides and skulls may be sold after sealing, but black bear trophies may not be sold (5 AAC 92.200). The State has allowed the sale of handicraft items made from black bear skins since 1998 (5 AAC 92.200), and the Federal Program adopted similar regulations in 2004 (CFR §242.25 (j)).

Since 2008, all Alaska resident hunters must obtain a State harvest ticket and report their hunting efforts. Both units continue to require reporting of any harvest of a black bear. If parts of the black bear are to be sold, sealing is required.

In 2010, the State re-classified black bears as furbearing animals as well as game animals (5AAC 92.9900(a)(32)). Consequently, during State hunts, black bears could be taken with a trap, if trapping regulations were adopted. They have not been adopted.

The Alaska Board of Game (BOG) removed the requirement for getting a bear hide or skull sealed for Unit 11 in regulatory year (RY) 2011/12 and for Unit 12 in RY 2010/11 because the requirement for both harvest tickets and sealing was determined to be redundant (ADF&G BOG 2011, 2011).

Sealing requirements for black bear in Units 11 and 12 have not changed under Federal regulations since the inception of the program in 1990 adopting then current state regulations. Under existing federal regulations, the salvage of the hide and edible meat is required. When sealing is required, hunters must additionally remove the skull from the field.

Biological Background

Unit 11 has not had population surveys conducted. Through field observations and harvest data it is believed that black bear populations are abundant within areas of suitable habitat. NPS biologists estimated there to be 100-200 black bears/1,000 km² around the McCarthy area in 2001 (Robbins 2014). Unit 12 has not had population surveys conducted. Through limited radiotelemetry data, the Unit 12 population was estimated to be 700-1,000 bears in 2012 (Wells 2014).

Harvest History

As much of Unit 11 is National Park and Preserve lands, harvest pressure is primarily limited to Federally qualified subsistence users (Robbins 2014). The number of black bears reported harvested fluctuated each year from 8 – 31 bears annually between 1998 and 2012 (**Figure 1**).

Within Unit 12, there is National Park/Preserve and USFWS lands with historically low human use of black bears, despite liberal hunting regulation (Wells 2014). The reported number of bears harvested fluctuated each year from 23- 68 bears annually between 1995 and 2017.

Circumstantial evidence indicates that berry abundance may affect bear harvest. During years of low berry production, bears are believed to travel more and/or may be more likely attracted to human wildlife kills or food. These behaviors increase the vulnerability of the bears to hunters (Wells 2014). Years with a late spring can delay the emergence of vegetation, which can alter the distribution of the bears, and a hunter’s success (Robbins 2014). Local residents primarily harvest bears in the spring, as they are an important meat source.

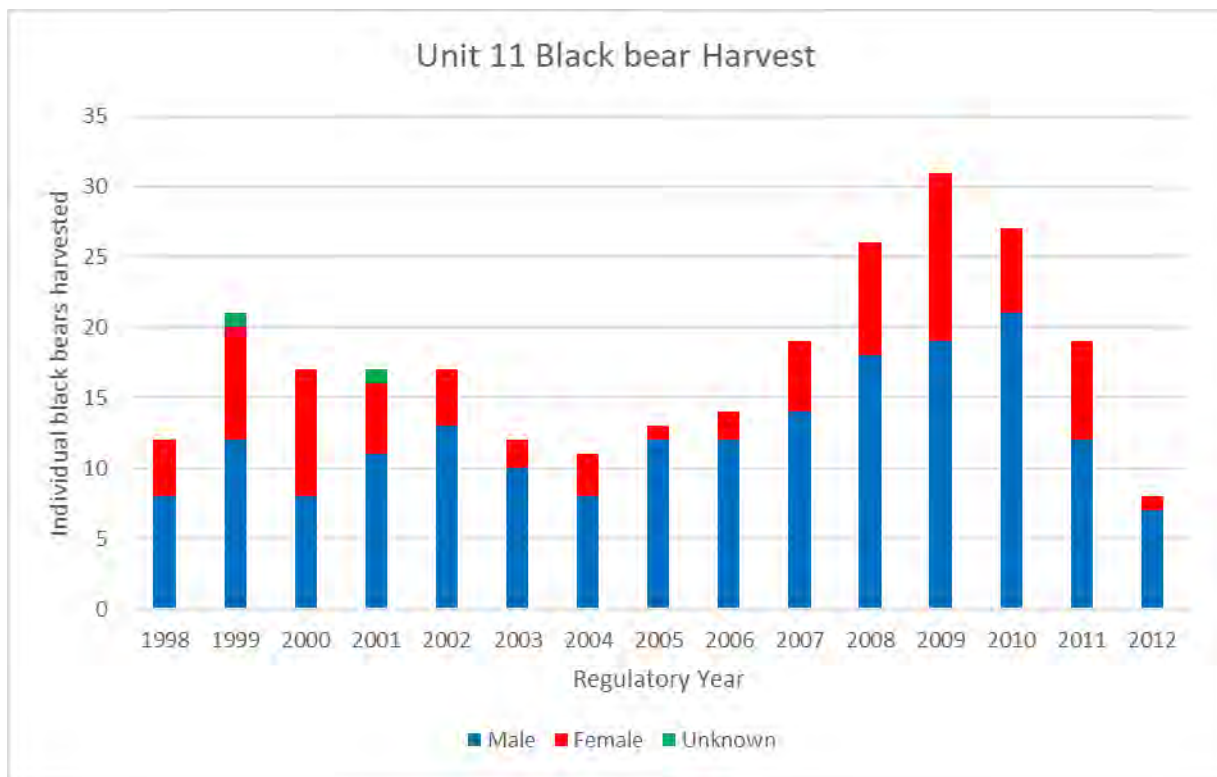


Figure 1. Number of black bears harvested from Unit 11 between 1998 and 2012 (Robbins 2011, 2014; Tobey 2005, 2008).

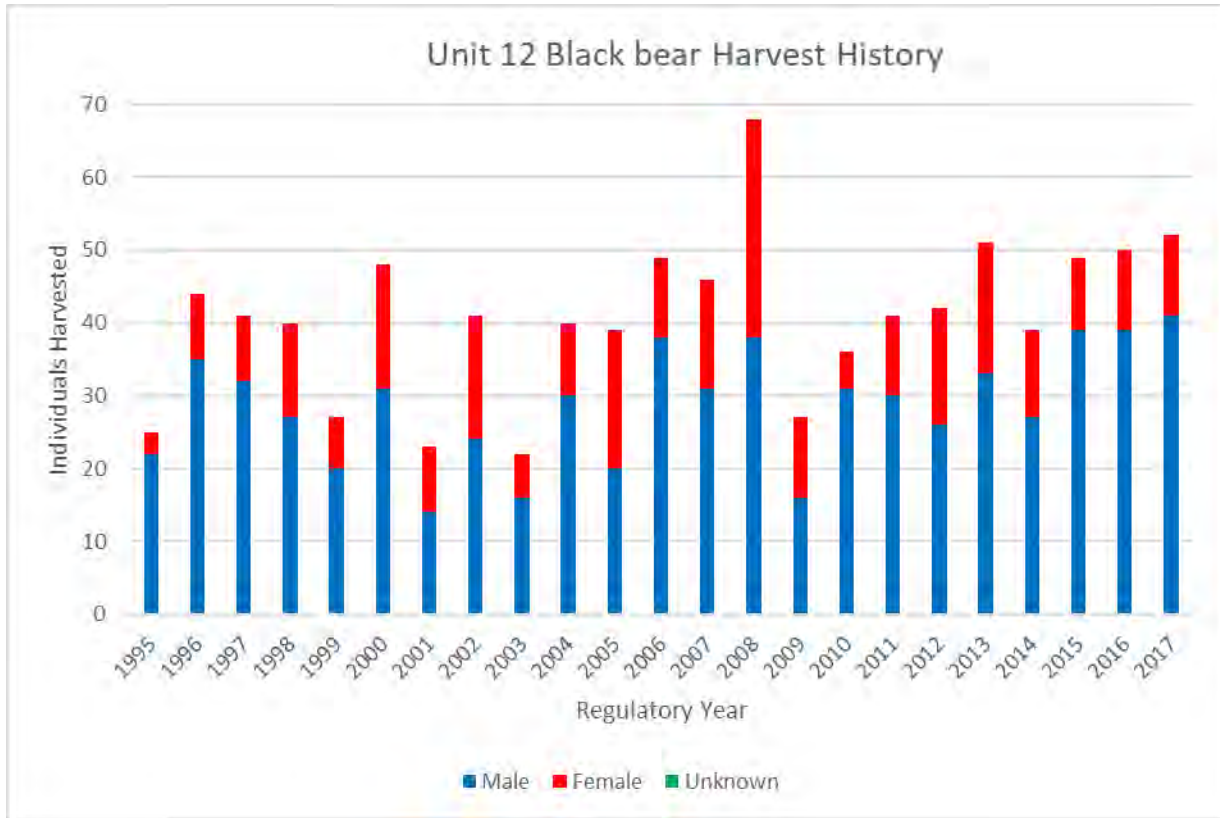


Figure 2. Number of black bears harvested from Unit 12 between 1995 and 2012 (Wells 2014, 2021).

Effects of the Proposal

The proposal, if adopted, would remove the requirement for Federally qualified subsistence users to have the skull and/or skin of a black bear sealed in Units 11 and 12. This proposal would simplify the process of harvesting black bears for Federally qualified subsistence user by removing this unnecessary requirement. Subsistence users would no longer be required to remove the head/skull from the field for sealing and they would no longer need to make special trips to an ADF&G office just to seal bears.

The State removed this requirement over 10 years ago, resulting in Federal regulations being more restrictive, which is contrary to the rural subsistence priority mandated by ANILCA. While Federally qualified subsistence users can hunt under State regulations in parts of these units, they cannot in WRST National Park where only Federal subsistence regulation apply. Therefore, any bear currently harvested within the national park must be sealed. If this proposal is adopted, the State and Federal regulations for sealing would align with each other, reducing regulatory complexity and user confusion.

While current biological data for black bears in these units are lacking, there are no current conservation concerns regarding black bears in Unit 11 or Unit 12 as evidenced through extremely liberal harvest limits and seasons under both State and Federal regulations as well as anecdotal observations from local users.

OSM PRELIMINARY CONCLUSION

Support Proposal WP22-33.

Justification

The sealing requirement causes unnecessary hardship for Federally qualified subsistence users when they harvest a black bear within Unit 11 or Unit 12 and there are no conservation concerns. This proposal would reduce regulatory complexity and user confusion by aligning the State and Federal regulations for both Unit 11 and Unit 12.

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WP22-40 Executive Summary	
General Description	<p>Proposal WP22-40 requests that Federally qualified subsistence users be allowed to use a snowmachine to position wolves and wolverines for harvest on Federal public lands in Units 9B, 9C, 17B, and 17C, provided the animals are not shot from a moving snowmachine. <i>Submitted by the Bristol Bay Subsistence Regional Advisory Council.</i></p>
Proposed Regulation	<p>§ ____ .26 Subsistence taking of wildlife</p> <p>...</p> <p><i>(b) Except for special provisions found at paragraphs (n)(1) through (26) of this section, the following methods and means of taking wildlife for subsistence uses are prohibited:</i></p> <p>...</p> <p><i>(4) Taking wildlife from a motorized land or air vehicle when that vehicle is in motion, or from a motor-driven boat when the boat's progress from the motor's power has not ceased.</i></p> <p><i>(5) Using a motorized vehicle to drive, herd, or molest wildlife.</i></p> <p>§ ____ .26(n)(9)(iii) Unit 9—Unit-specific regulations</p> <p>...</p> <p><i>(I) In Units 9B and 9C, on Federal-managed lands, a snowmachine may be used to position a wolf or wolverine for harvest, provided that the animal is not shot from a moving snowmachine.</i></p> <p>...</p> <p>§ ____ .26(n)(17)(iii) Unit 17—Unit-specific regulations</p> <p>...</p> <p><i>(D) In Units 17B and 17C, on Federal-managed lands, a snowmachine may be used to position a wolf or wolverine for harvest, provided that the animal is not shot from a moving snowmachine.</i></p>

WP22-40 Executive Summary	
OSM Preliminary Conclusion	<p>Support Proposal WP22-40 with modification to utilize the same regulatory language the Board adopted in Proposal WP20-27, and to include all Federal public lands in Unit 17.</p> <p>The modification should read:</p> <p>§ ____ .26(n)(9)(iii) Unit 9—Unit-specific regulations</p> <p>...</p> <p><i>(I) In Units 9B and 9C, on Federal-managed lands, a snowmachine may be used to assist in the taking of a wolf or wolverine and a wolf or wolverine may be shot from a stationary snowmachine. "Assist in the taking of a wolf or wolverine" means a snowmachine may be used to approach within 300 yards of a wolf or wolverine at speeds under 15 miles per hour, in a manner that does not involve repeated approaches or that causes the animal to run. A snowmachine may not be used to contact an animal or to pursue a fleeing animal.</i></p> <p>...</p> <p>§ ____ .26(n)(17)(iii) Unit 17—Unit-specific regulations</p> <p>...</p> <p><i>(D) In Unit 17, on Federal-managed lands, a snowmachine may be used to assist in the taking of a wolf or wolverine and a wolf or wolverine may be shot from a stationary snowmachine. "Assist in the taking of a wolf or wolverine" means a snowmachine may be used to approach within 300 yards of a wolf or wolverine at speeds under 15 miles per hour, in a manner that does not involve repeated approaches or that causes the animal to run. A snowmachine may not be used to contact an animal or to pursue a fleeing animal.</i></p>
Bristol Bay Subsistence Regional Advisory Council Recommendation	
Western Interior Alaska Subsistence Regional	

WP22-40 Executive Summary	
Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

**DRAFT STAFF ANALYSIS
WP22-40**

ISSUES

Proposal WP22-40, submitted by the Bristol Bay Subsistence Regional Advisory Council (Council), requests that Federally qualified subsistence users be allowed to use a snowmachine to position wolves and wolverines for harvest on Federal public lands in Units 9B, 9C, 17B, and 17C, provided the animals are not shot from a moving snowmachine.

DISCUSSION

The proponent states that the use of snowmachines to position wolves and wolverines is a traditional practice in rural areas, and the proposed regulation will mirror Federal regulations in Unit 23. The proponent continues “in April 2020, the Federal Subsistence Board (Board) addressed Proposal WP20-26 to position wolves and wolverines on Bureau of Land Management (BLM) managed lands in Units 17B and C. The Board deferred the proposal to a working group of the Council and Federal/State staff to develop and recommend language to define positioning of animals for the Board to consider.” This proposal replaces deferred Proposal WP20-26.

Existing Federal Regulation

§ ____ .26 Subsistence taking of wildlife

...

(b) Except for special provisions found at paragraphs (n)(1) through (26) of this section, the following methods and means of taking wildlife for subsistence uses are prohibited:

...

(4) Taking wildlife from a motorized land or air vehicle when that vehicle is in motion, or from a motor-driven boat when the boat's progress from the motor's power has not ceased.

(5) Using a motorized vehicle to drive, herd, or molest wildlife.

Proposed Federal Regulation

§ ____ .26 Subsistence taking of wildlife

...

(b) Except for special provisions found at paragraphs (n)(1) through (26) of this section, the following methods and means of taking wildlife for subsistence uses are prohibited:

...

(4) Taking wildlife from a motorized land or air vehicle when that vehicle is in motion, or from a motor-driven boat when the boat's progress from the motor's power has not ceased.

(5) Using a motorized vehicle to drive, herd, or molest wildlife.

§ _____.26(n)(9)(iii) Unit 9—Unit-specific regulations

...

(I) In Units 9B and 9C, on Federal-managed lands, a snowmachine may be used to position a wolf or wolverine for harvest, provided that the animal is not shot from a moving snowmachine.

...

§ _____.26(n)(17)(iii) Unit 17—Unit-specific regulations

...

(D) In Units 17B and 17C, on Federal-managed lands, a snowmachine may be used to position a wolf or wolverine for harvest, provided that the animal is not shot from a moving snowmachine.

Existing State Regulations

AS 16.05.940. Definitions.

...

(34) “take” means taking, pursuing, hunting, fishing, trapping, or in any manner disturbing, capturing, or killing or attempting to take, pursue, hunt, fish, trap, or in any manner capture or kill fish or game.

5 AAC 92.080. Unlawful methods of taking game; exceptions

The following methods of taking game are prohibited:

...

(4) unless otherwise provided in this chapter, from a motor-driven boat or a motorized land vehicle, unless the motor has been completely shut off and the progress from the motor’s power has ceased, except that a

...

(B) motorized land vehicle may be used as follows:

(iii) notwithstanding any other provision in this section, in Units 9(B), 9(C), 9(E), 17, 18, 19, 21, 22, 24, 25(C) and 25(D), except on any National Park Service or National Wildlife Refuge lands not approved by the federal agencies, a snowmachine may be used to position a hunter to select an individual wolf for harvest, and wolves may be shot from a stationary snowmachine;

...

(5) except as otherwise specified, with the use of a motorized vehicle to harass game or for the purpose of driving, herding, or molesting game.

5 AAC 92.990. Definitions

(a) In addition to the definitions in AS 16.05.940 , in 5 AAC 84 – 5 AAC 92, unless the context requires otherwise,

...

(70) “harass” means to repeatedly approach an animal in a manner which results in the animal altering its behavior;

NOTE: The complete text for 5 AAC 92.080(4)(B) is in **Appendix 1.**

Relevant Federal Regulations

50 CFR 100.4 and 36 CFR 242.4 Definitions

Take or taking as used with respect to fish or wildlife, means to pursue, hunt, shoot, trap, net, capture, collect, kill, harm, or attempt to engage in any such conduct.

§ ____ .26(n)(17)(iii) Unit 17—Unit-specific regulations

...

(D) In Unit 17, a snowmachine may be used to assist in the taking of a caribou and caribou may be shot from a stationary snowmachine. "Assist in the taking of a caribou" means a snowmachine may be used to approach within 300 yards of a caribou at speeds under 15 miles per hour, in a manner that does not involve repeated approaches or that causes a caribou to run. A snowmachine may not be used to contact an animal or to pursue a fleeing caribou.

§ ____ .26(n)(23)(iv) Unit 23—Unit-specific regulations

...

(E) A snowmachine may be used to position a hunter to select individual caribou for harvest provided that the animals are not shot from a moving snowmachine. On BLM-managed lands

only, a snowmachine may be used to position a caribou, wolf, or wolverine for harvest provided that the animals are not shot from a moving snowmachine.

There is a difference between the proposed regulation and agency-specific regulations. Adoption of this proposal may require clarification between new regulation and conflicting agency-specific regulations. Federal subsistence and agency-specific regulations are as follows:

§ _____.26(n)(17)(ii) Unit 17—In the following areas, the taking of wildlife for subsistence uses is prohibited or restricted on public lands:

(A) Except for aircraft and boats and in legal hunting camps, you may not use any motorized vehicle for hunting ungulates, bear, wolves, and wolverine, including transportation of hunters and parts of ungulates, bear, wolves, or wolverine in the Upper Mulchatna Controlled Use Area consisting of Unit 17B, from Aug. 1-Nov. 1.

50 CFR 36.12 (Alaska National Wildlife Refuges) Use of snowmobiles, motorboats, dog teams and other means of surface transportation traditionally employed by local rural residents engaged in subsistence uses.

(a) Notwithstanding any other provision of subchapter C of title 50 CFR the use of snowmobiles, motorboats, dog teams and other means of surface transportation traditionally employed by local rural residents engaged in subsistence uses is permitted within Alaska National Wildlife Refuges except at those times and in those areas restricted or closed by the Refuge Manager.

...

(d) Snowmobiles, motorboats, dog teams and other means of surface transportation traditionally employed by local rural residents engaged in subsistence uses shall be operated (1) in compliance with applicable State and Federal law, (2) in such a manner as to prevent waste or damage to the refuge, and (3) in such a manner as to prevent the herding, harassment, hazing or driving of wildlife for hunting or other purposes.

36 CFR 13.460 (Alaska National Park System) Use of snowmobiles, motorboats, dog teams, and other means of surface transportation traditionally employed by local rural residents engaged in subsistence uses.

(a) Notwithstanding any other provision of this chapter, the use of snowmobiles, motorboats, dog teams, and other means of surface transportation traditionally employed by local rural residents engaged in subsistence uses is permitted within park areas except at those times and in those areas restricted or closed by the Superintendent.

...

(d) Motorboats, snowmobiles, dog teams, and other means of surface transportation traditionally employed by local rural residents engaged in subsistence uses shall be operated:

- (1) In compliance with applicable State and Federal law;*
- (2) In such a manner as to prevent waste or damage to the park areas; and*
- (3) In such a manner as to prevent the herding, harassment, hazing or driving of wildlife for hunting or other purposes.*

43 CFR 8341.1 (Bureau of Land Management)

(f.) No person shall operate an off-road vehicle on public lands: ... (4) In a manner causing or likely to cause significant, undue damage to or disturbance of ... wildlife

Extent of Federal Public Lands

Unit 9B is comprised of approximately 34% Federal public lands and consist of 26% National Park Service (NPS) managed lands, and 8% BLM managed lands.

Unit 9C is comprised of approximately 85% Federal public lands and consist of 78% NPS managed lands, 4% BLM managed lands, and 4% U.S. Fish and Wildlife Service managed lands (USFWS). Katmai National Park lands are closed to subsistence hunting.

Unit 17B is comprised of approximately 8% Federal public lands and consist of 6% NPS managed lands, 1% BLM managed lands, and < 1% USFWS managed lands.

Unit 17C is comprised of approximately 25% Federal public lands and consist of 15% USFWS managed lands and 10% BLM managed lands.

Customary and Traditional Use Determination

The Federal Subsistence Board has not made a customary and traditional use determination for wolverines in Unit 9 or Unit 17. Therefore, all rural residents of Alaska may harvest this species in these units.

Rural residents of Units 6, 9, 10 (Unimak Island only), 11-13, Chickaloon, and 16-26 have a customary and traditional use determination for wolves in Units 9 and 17.

Regulatory History

In 1995, Proposal P95-52 requested that snowmachines and motor-driven boats be allowed in the taking of caribou and moose in Unit 25 during established seasons, except shooting from a snowmachine in motion was prohibited. There was no existing regulation on the use of motorized vehicles in Unit 25 prior to this. The Federal Subsistence Board (Board) adopted the recommendation of the Eastern Interior Alaska and Southcentral Alaska Subsistence Regional Advisory Councils who

supported the proposal in recognition that methods change over time and because it supported subsistence uses.

In 2000, the Board adopted Proposal P00-53 with modification allowing the use of snowmachines to position a hunter and select individual caribou for harvest in Units 22 and 23. The Board did this to recognize a longstanding customary and traditional practice in the region (FWS 2000). However, the proponent had asked to position a caribou, not a hunter. The Interagency Staff Committee provided a rationale for the modification:

Following the Regional Council winter meetings, the Deputy Regional Director of the U.S. Fish and Wildlife Service (FWS), Alaska Region, met with the Assistant Regional Director for Law Enforcement, the Staff Committee member for FWS, the Refuge Supervisor for Northern Refuges, and the Native Liaison and, after lengthy discussion, agreed to recommend substituting “a hunter” for “caribou” in the proposal language. They agreed that this is consistent with conservation principles and existing agency regulations as long as herding does not occur and shooting from a moving snowmachine is prohibited (FWS 2000:13).

In 2012, Proposal WP12-53 was submitted by the Yukon Delta National Wildlife Refuge, and requested unit specific regulation prohibiting a hunter in Unit 18 from pursuing an ungulate that is “fleeing” with a motorized vehicle. The Board adopted the proposal with modification and prohibited the pursuit with a motorized vehicle of an ungulate that was “at or near a full gallop” in Unit 18, providing greater clarity of allowable methods of harvest (FWS 2012).

At its March 2014 meeting, the Alaska Board of Game adopted Proposal 177, which allows a hunter to use a snowmachine in Units 22, 23 and 26A to position a caribou, wolf, or wolverine for harvest, as long as these animals are shot from a stationary snowmachine (see 5 AAC 92.080(4)(B)(i) at **Appendix 1**). The purpose of the proposal was to allow the use of snowmachines to track these animals.

In 2016, Proposal WP16-48, submitted by the Native Village of Kotzebue, requested that Federally qualified subsistence users be allowed to use snowmachines to position a caribou, wolf, or wolverine for harvest in Unit 23. The Board adopted the proposal with modification to allow this method of harvest only on those lands managed by the Bureau of Land Management. The Board recognized uses of snowmachines to position animals as customary and traditional practice. However, positioning animals by snowmachine is prohibited on National Park Service and U.S. Fish and Wildlife Service lands under agency-specific regulations. Bureau of Land Management regulatory language does not specifically prohibit the use of snowmachines to position animals for hunting and this harvest method is allowed on some State managed lands.

In the spring of 2017, Kenneth Nukwak of Manokotak submitted Proposal WP18-24 requesting that Federally qualified subsistence users be allowed to use a snowmachine to position caribou, wolves, and wolverines for harvest in Unit 17, provided the animals were not shot from a moving vehicle. During the fall 2017 meeting cycle, the Bristol Bay Subsistence Regional Advisory Council voted to oppose Proposal WP18-24, noting a lack of clear definitions for positioning and chasing of an animal.

At its February 2018 meeting in Dillingham, the Alaska Board of Game (BOG) adopted Proposal 148, also submitted by Kenneth Nukwak of Manokotak, with modification. The original proposal requested that Federally qualified subsistence users be allowed to use a snowmachine to position caribou, wolves, and wolverines for harvest in Unit 17, provided the animals would not be shot from a moving vehicle. The modified regulation was limited to caribou and stated that a snowmachine may be used in Unit 17 to assist in the taking of a caribou, and caribou may be shot from a stationary snowmachine, with further clarification describing exactly how the snowmachine may be used for assistance (see 5 AAC 92.080(4)(B)(viii) at **Appendix 1**).

At its winter meeting in March of 2018, the Bristol Bay Subsistence Regional Advisory Council voted to request Proposal WP18-24 be removed from the consensus agenda at the next Board meeting. Reasoning for this included providing an opportunity for the Board to deliberate the proposal on record, in light of BOG deliberation, modification, and adoption of the same proposal on State lands in Unit 17. During the April 2018 Board meeting, Proposal WP18-24 was taken off the consensus agenda. Some public testimony was received in support of the proposal. The Board deliberated the proposal on record and rejected it.

In 2020, the Council submitted Proposals WP20-26 and WP20-27. Proposal WP20-26 requested that Federally qualified subsistence users be allowed to use a snowmachine to position wolves, and wolverines for harvest on BLM managed lands only in Units 9B, 9C, 17B, and 17C, provided the animals are not shot from a moving snowmachine. Proposal WP20-27, also submitted by the Council, requested a unit-specific regulation for Unit 17 allowing use of a snowmachine to assist in taking caribou and allowing caribou to be shot from a stationary snowmachine, using the regulatory language adopted by the BOG in February 2018. That regulatory language read:

In Unit 17, a snowmachine may be used to assist in the taking of a caribou and caribou may be shot from a stationary snowmachine. "Assist in the taking of a caribou" means a snowmachine may be used to approach within 300 yards of a caribou at speeds under 15 miles per hour, in a manner that does not involve repeated approaches or that causes a caribou to run. A snowmachine may not be used to contact an animal or to pursue a fleeing caribou.

During the April 2020 regulatory Board meeting, the Board first took up Proposal WP20-27, discussed and adopted it. The Board then considered Proposal WP20-26, which was supported by the Bristol Bay, Western Interior, and Yukon-Kuskokwim Delta Councils as it increased subsistence opportunity. The Board deferred Proposal WP20-26 and suggested further consideration of the proposal by the Council working group to 1) expand the analysis to include all Federal lands in Units 9B, 9C, 17B, and 17C; 2) identify specific language that may reduce complexity between State and Federal regulations; and 3) anticipate and address regulatory conflicts between the proposed regulatory language and agency specific regulations.

Current Events

The Nushagak Fish and Game Advisory Committee (AC) submitted Proposal 23 to the BOG for consideration at their January 2022 meeting. Proposal 23 requested allowing the use of a snowmachine

to position wolves or wolverines for harvest in Unit 17, and that they may be shot from a stationary snowmachine. The Nushagak AC stated that Proposal 23 seeks to eliminate current conflicts between regulatory prohibitions and common local hunting practices and that this opportunity is already available to users in Units 18, 22, 23, and 26A.

Following direction from the Board, a working group of Bristol Bay Council members, Federal agency and ADF&G staff formed to develop recommendations for deferred Proposal WP20-26. The working group met several times via teleconference between July 2020 and May 2021. At the February 2021 Council meeting the working group reported to the Council an agreement to expand the analysis to include all Federal public lands in Units 9B, 9C, 17B, and 17C. The working group met again in May and agreed to further clarify the term “position” using the same regulatory language as proposed in Proposal WP20-27.

Biological Background

Wolves and wolverines are present throughout Units 9 and 17. As with other furbearers in Alaska, there is scant objective data on abundance of these animals. Rather, relative abundance has typically been estimated using the results of trapper questionnaires, as well as incidental observations by biologists, hunters, trappers, guides, and others.

Wolves

Historically, wolf density has varied in response to harvest pressure, prey availability, and disease. In Unit 9, wolf densities were low in the early 1980s following the end of the Federal wolf control program. Abundance appears to have increased during the 1990s. Currently, the population is believed to be relatively stable, and monitoring efforts in Units 9C and 9E indicate that the population is 250 – 550 wolves, or 16-18 wolves/1,000 mi² (Crowley and Peterson 2018). Wolf dynamics in Unit 17 have been similar to those in Unit 9, with abundance increasing during the mid-1980s and early 1990s (Barten 2018). Recent observations suggesting that the population is relatively stable (Spivey 2019).

Wolverines

Compared to other furbearers, wolverines occur at low densities (Copeland and Whitman 2003). Though wolverine abundance remains unquantified due to the impracticality of formal assessment (Crowley 2013), low densities appear to be confirmed by local trappers, who report that wolverines in Units 9 and 17 are scarce but stable (Spivey 2019).

Cultural Knowledge and Traditional Practices

During his study years in 1964 and 1965, VanStone (1967:134) documented winter travel along the Nushagak River occurring almost exclusively by dog team. During the winter months dog teams were used to harvest caribou, access trap lines, and provide for the transportation of supplies and people throughout the region. Hunters used traditional methods to harvest wildlife. These methods included a hunter moving animals towards another hunter’s position (Nelson 1983 [1899] and Oswalt 1990). At

the time of his study, VanStone was only aware of a few Bristol Bay residents that possessed snowmachines. Approximately 10 years later, when ADF&G first began conducting research on subsistence harvest activities, dog teams were barely mentioned. Instead, reports noted that the communities of Nushagak Bay had mostly transitioned to the use of boats, aircrafts, and snowmachines as a preferred means of travel and for accessing animals for harvest (Coiley-Kenner et al. 2003; Evans et al. 2013; Fall et al. 1986; Holen et al. 2012; Holen et al. 2005; Krieg et al. 2009; Schichnes and Chythlook 1988; Seitz 1996; Wolfe et al. 1984; Wright et al. 1985).

In the past, prior to the use of snowmachines, people in the region were more nomadic. Residents of Southwest Alaska practiced an annual round of harvest activities that allowed them to effectively position themselves in proximity to important resources that supported their families through extended travel to seasonal subsistence camps. In La Vine and Lisac (2003), elders describe a harvest year that began at fish camp in the early summer, moved up the river to hunting and trapping camps for the fall and winter, traveled through mountain passes and down rivers to bays and estuaries for the spring harvest of migratory waterfowl and eggs, finally returning to fish camp once again in early summer. A trip such as this required travel by boat, sled, and foot and took the family hundreds of miles and 12 months to complete. As village life solidified around schools and economic opportunities, technological advances like boats with outboard motors and snowmachines allowed people to travel further over shorter periods of time in order to access resources they once had to follow over seasons instead of hours.

Wolves and Wolverine

Across Alaska, both wolves and wolverines are highly prized for their fur, which is used to trim locally made parkas and other items of clothing or handicrafts. While not as prominent an activity as in the past, rural residents still participate in trapping as a source of income in the Bristol Bay region, particularly for wolverine, which continues to fetch a high price for quality fur (Woolington 2013). Snowmachines were the primary means of transportation used by hunters and trappers for taking wolves and furbearers in Unit 17 from 2008 through 2012 (Woolington 2012 and 2013). Most wolves were harvested by firearm between the regulatory years of 1992 and 2010, while wolverines were more frequently taken by trap or snare.

The Division of Subsistence at ADF&G conducts household subsistence harvest surveys periodically throughout Alaska. Though this survey data is only available for some communities in some years, it is an additional source for documenting patterns of use in rural Alaska. The most recent surveys conducted in the Bristol Bay region describe the harvest and use of wolves and wolverines as varied between communities and study years (Evans et al. 2013; Holen et al. 2012; Holen et al. 2011; Holen et al. 2005; Krieg et al. 2009). A common pattern described in most reports is that a smaller percentage of households in each community report harvest or attempted harvest and use of furbearers than those reporting harvest and use of salmon or large land mammals like moose and caribou. In most cases only a few households are responsible for the majority of the harvest and use of furbearers, likely in association with keeping a trap line.

Harvest History

Wolves

Harvest of wolves is influenced by weather and travel conditions, which can result in variable harvest from year to year. Alaska Department of Fish and Game sealing records indicate that from 2010 to 2014, the most recent five-year period for which unit-specific sealing data is available, reported harvest ranged from 44 to 142 wolves in Unit 9. On average 64 wolves were harvested annually (Crowley and Peterson 2018).

Reported harvest was also variable in Unit 17, where between 6 and 105 wolves were harvest annually from 2010 to 2014. During that period, annual harvest averaged 47 wolves. In Unit 17, 70% of harvested wolves were shot, 18% were trapped or snared, and 69% of hunters and trappers used snowmachines to harvest wolves (Barten 2018).

Wolverines

Like wolf harvest, wolverine harvest can vary from year to year, reflecting trapper effort that varies with travel conditions. For 2007 – 2016, the most recent ten-year period for which unit-specific sealing data is available, reported harvest ranged from 9 to 36 wolverines in Unit 9. On average, annual reported harvest was 25 wolverines, 89% of which were trapped or snared, and 10% of which were shot. Snowmachines were used in 28% of wolverines harvested during this period (Crowley 2013; Rinaldi 2019, pers. comm.).

In Unit 17, sealing records indicate that reported harvest ranged from 8 to 63 wolverines annually during 2007 – 2016, averaging 37 wolverines annually. During this time period, 79% of wolverines were trapped or snared and 17% were shot. Snowmachines were used 46% of the time (Woolington 2013; Rinaldi 2019, pers. comm.).

Other Alternatives Considered

When Proposal WP20-26 was proposed, it requested changes to regulations on BLM lands only in Units 9 and 17. BLM lands only occur in Subunits 9B, 9C, 17B, and 17C. When the proponent submitted Proposal WP22-40, the request was expanded to include all Federal public lands in the same subunits as before. An alternative to consider is that leaving out Unit 17A was an oversight, and the proposed regulatory changes should take place on all Federal public lands in Units 9B, 9C, and all of Unit 17. The Council may want to further consider this alternative.

Effects of the Proposal

If adopted, Proposal WP22-40 would allow hunters to use a snowmachine to position wolves and wolverines for selection and harvest, as long as they are not shot from a moving snowmachine. The most recent available reports suggest that, in the Bristol Bay region, the majority of wolves are harvested by firearm, while the majority of wolverine are harvested by trapping. The proposed

regulation may not result in an increase in harvest of wolves and wolverines by trap or snare. However, such regulatory changes could increase the take of wolves and wolverines by firearm and may result in more opportunistic harvest. Currently, the wolf population is believed to be stable. Less is known about the resident wolverine population. However, as this is a traditional and common local practice, adopting the proposal may simply legalize a practice that is already occurring, therefore resulting in minimal changes in harvest.

Regulations for the use of snowmachines when harvesting wolves or wolverines would be different on State managed lands. However, this is already the case and should the proposal be adopted, it does not add regulatory complexity that does not already exist. Specifically, in State regulations, a snowmachine may be used to position a hunter to select an individual wolf for harvest, and wolves may be shot from a stationary snowmachine; in Federal regulations, a snowmachine could be used to position a wolf or wolverine for harvest, and shot from a stationary snowmachine. If both this proposal and State Proposal 23 are adopted, then State and Federal regulations would align in Units 17B and 17C but remain disparate in Units 9 and 17A.

OSM PRELIMINARY CONCLUSION

Support Proposal WP22-40 **with modification** to utilize the same regulatory language the Board adopted in Proposal WP20-27, and to include all Federal public lands in Unit 17.

The modification should read:

§ ____ .26(n)(9)(iii) Unit 9—Unit-specific regulations

...

(I) In Units 9B and 9C, on Federal-managed lands, a snowmachine may be used to assist in the taking of a wolf or wolverine and a wolf or wolverine may be shot from a stationary snowmachine. "Assist in the taking of a wolf or wolverine" means a snowmachine may be used to approach within 300 yards of a wolf or wolverine at speeds under 15 miles per hour, in a manner that does not involve repeated approaches or that causes the animal to run. A snowmachine may not be used to contact an animal or to pursue a fleeing animal.

...

§ ____ .26(n)(17)(iii) Unit 17—Unit-specific regulations

...

(D) In Unit 17, on Federal-managed lands, a snowmachine may be used to assist in the taking of a wolf or wolverine and a wolf or wolverine may be shot from a stationary snowmachine. "Assist in the taking of a wolf or wolverine" means a snowmachine may be used to approach within 300 yards of a wolf or wolverine at speeds under 15 miles per hour,

in a manner that does not involve repeated approaches or that causes the animal to run. A snowmachine may not be used to contact an animal or to pursue a fleeing animal.

Justification

Hunters using snowmachines to position wolves and wolverines for harvest is a traditional practice in the Bristol Bay area. While methods and means for taking wildlife in ethnographic literature describe hunters employing traditional strategies that might affect game behavior, until the 1960s hunters largely used dog sled or walked (Nelson 1983 [1899]; Oswalt 1990; VanStone 1967). As means for travel, access, and harvest continue to change over time, hunters persist in using traditional methods purposefully meant to alter the behavior of wildlife and position them for harvest because these methods are efficient. Additionally, the Board adopted a similar regulation in Unit 23, in recognition of the snowmachine as a customary and traditional harvest method. The proposed regulation change might increase opportunity through a more efficient method to harvest wolverines and could result in more harvest. Impacts to wolverine populations are unknown at this time and are difficult to track.

Finally, the proposed modification would align with similar regulations for hunting caribou on Federal public lands in all of Unit 17 as well as comply with agency specific regulations.

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APPENDIX 1

5 AAC 92.080. Unlawful methods of taking game; exceptions

The following methods of taking game are prohibited:

...

(4) unless otherwise provided in this chapter, from a motor-driven boat or a motorized land vehicle, unless the motor has been completely shut off and the progress from the motor's power has ceased, except that a

...

(B) motorized land vehicle may be used as follows:

i) In Units 22, 23, and 26(A), a snowmachine may be used to position a caribou, wolf, or wolverine, for harvest, and caribou, wolves and wolverines may be shot from a stationary snowmachine.

(ii) notwithstanding any other provision in this section, in the wolf control implementation areas specified in 5 AAC 92.111 - 5 AAC 92.113, 5 AAC 92.118, and 5 AAC 92.121 - 5 AAC 92.124, a snowmachine may be used to position a hunter to select an individual wolf for harvest, and wolves may be shot from a stationary snowmachine;

(iii) notwithstanding any other provision in this section, in Units 9(B), 9(C), 9(E), 17, 18, 19, 21, 22, 24, 25(C) and 25(D), except on any National Park Service or National Wildlife Refuge lands not approved by the federal agencies, a snowmachine may be used to position a hunter to select an individual wolf for harvest, and wolves may be shot from a stationary snowmachine;

(iv) notwithstanding any other provision in this section, in the bear control implementation areas specified in 5 AAC 92.111 - 5 AAC 92.113, 5 AAC 92.118, and 5 AAC 92.121 - 5 AAC 92.124, a snowmachine may be used to position a hunter to select an individual bear for harvest, and bears may be shot from a stationary snowmachine;

(v) notwithstanding any other provision in this section, in Units 9(B), 9(C), 9(E), 17, 22 and 25(C), except on any National Park Service or National Wildlife Refuge lands not approved by the federal agencies, an ATV may be used to position a hunter to select an individual wolf for harvest, and wolves may be shot from a stationary ATV;

(vi) under authority of a permit issued by the department;

(vii) in Unit 18, a snowmachine may be used to position a wolf or wolverine for harvest, and wolves or wolverines may be shot from a stationary snowmachine;

(viii) in Unit 17, a snowmachine may be used to assist in the taking of a caribou and caribou may be shot from a stationary snowmachine. "Assist in the taking of a caribou" means a snowmachine may be used to approach within 300 yards of a caribou at speeds under 15 miles per hour, in a manner that does not involve repeated approaches or that causes a caribou to run. A snowmachine may not be used to contact an animal or to pursue a fleeing caribou.

(5) except as otherwise specified, with the use of a motorized vehicle to harass game or for the purpose of driving, herding, or molesting game;

(6) with the use or aid of a machine gun, set gun, or a shotgun larger than 10 gauge;

(7) with the aid of

(A) a pit;

(B) a fire;

(C) artificial light, except that artificial light may be used.

WP22-50 Executive Summary	
General Description	Wildlife Proposal WP22-50 requests the beaver harvest limit be changed from 50 and 30 beaver in Unit 23, Kobuk and Selawik River drainages and Unit 23 remainder, respectively, to no harvest limit in both trap areas. <i>Submitted by: Northwest Arctic Subsistence Regional Advisory Council</i>
Proposed Regulation	<p style="text-align: center;">Unit 23—Beaver Trapping</p> <p><i>Unit 23, the Kobuk and Selawik River drainages— July 1-June 30 50 beaver No limit</i></p> <p><i>Unit 23, remainder—30 beaver No limit July 1-June 30</i></p>
OSM Preliminary Conclusion	<p>Support Proposal WP22-50 with modification to combine Unit 23 trap areas.</p> <p>The modified regulations should read:</p> <p style="text-align: center;">Unit 23—Beaver Trapping</p> <p><i>Unit 23, the Kobuk and Selawik River drainages—50 beaver No limit July 1-June 30</i></p> <p><i>Unit 23, remainder—30 beaver— July 1-June 30</i></p>
Northwest Arctic Subsistence Regional Advisory Council	
North Slope Subsistence Regional Advisory Council	
Kodiak/Aleutians Subsistence Regional Advisory Council	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

**DRAFT STAFF ANALYSIS
WP22-50**

ISSUES

Proposal WP22-50, submitted by the Northwest Arctic Subsistence Regional Advisory Council, requests the beaver harvest limit be changed from 50 and 30 beaver in Unit 23, Kobuk and Selawik River drainages and Unit 23 remainder, respectively, to no harvest limit in both trap areas.

DISCUSSION

The proponent states that the proposed changes would align Federal beaver trapping regulations with the more liberal State regulations as well as provide increased harvest opportunity for Federally qualified subsistence users.

Existing Federal Regulation

Unit 23—Beaver Trapping

Unit 23, the Kobuk and Selawik River drainages—50 beaver *July 1-June 30*

Unit 23, remainder—30 beaver *July 1-June 30*

Proposed Federal Regulation

Unit 23—Beaver Trapping

*Unit 23, the Kobuk and Selawik River drainages—~~50 beaver~~ **No limit*** *July 1-June 30*

*Unit 23, remainder—~~30 beaver~~ **No limit*** *July 1-June 30*

Existing State Regulation

Unit 18, 22, and 23—Beaver Trapping

Residents and Non-residents: No Limit

No Closed Season

Extent of Federal Public Lands

Federal public lands comprise approximately 70.53% of Unit 23 and consists of 9.14% U.S. Fish and Wildlife Service (FWS) managed lands, 21.77% Bureau of Land Management (BLM) managed lands, and 39.61% National Park Service (NPS) managed lands.

Customary and Traditional Use Determinations

The Federal Subsistence Board has not made a customary and traditional use determination for beaver in Unit 23. Therefore, all rural residents of Alaska may harvest this species in this unit.

Regulatory History

There has been a general trend for liberalize trapping and hunting regulation in Unit 23. Federal regulations for beaver trapping in Unit 23 Kobuk and Selawik River drainages (Unit 23 Kobuk/Selawik) and Unit 23 remainder were adopted from State regulations in 1990. The season for both trap areas ran from Nov. 1-June 10. The harvest limits for Unit 23 Kobuk/Selawik and Unit 23 remainder were 50 and 30 beaver per season, respectively.

In 1992, Proposal P92-096 was submitted requesting an increase of harvest limits for beaver in Unit 23 remainder from 50 beaver to a harvest limit of 75 beaver per season. The intent of the proposal was to reduce the number of beaver and the associated dams that were thought to be impacting whitefish. The proposal was not based on subsistence need, but on a desire to control one animal population for the benefit of another. Federal subsistence management regulations govern the take and use of wildlife for subsistence uses only and, as a result, the proposal was rejected as outside the authority of the Federal Subsistence Board (Board).

In 1993, the Federal Subsistence Board (Board) adopted Proposal P93-009 requesting to place the dates of all seasons in which beavers could be taken with firearms within the same sections to make the regulations easier to read. Adopting the proposal did not change subsistence seasons, harvest limits, or methods and means.

In 1999, the Alaska Board of Game (BOG) during their fall meeting adopted a year-round hunting season for beaver in Unit 23 with no harvest limit or sealing requirement. In addition, the trapping season was extended to year round with no harvest limit and no sealing requirement. At the spring 2000 BOG meeting beaver was defined as a ‘fur animal’ and adopted in regulation. The designation of beaver as a ‘fur animal’, as well as a ‘furbearer’, allows take under hunting and trapping regulations, respectively. These regulations went into effect July 1, 2000.

In 2007, the Board adopted Proposal WP07-51 requesting a hunting season for beaver in Unit 23 with no closed season, and no harvest limit. The intent of the proposal was to accommodate subsistence hunting during the spring, summer and fall for food and fur and to align Federal and State regulations.

Biological Background

State management goals and objectives for furbearers in Unit 23 are as follows (Harper and McCarthy 2013):

- Maintain viable numbers of furbearers to provide for subsistence, commercial and recreational uses of furbearers.
- Monitor harvest through the fur sealing program, annual hunter/trapper questionnaires and community-based harvest assessments
- Actively work to increase the number of license vendors and fur sealers in Unit 23
- Improve compliance with current sealing requirements through increased public communication and education.

Arctic landscapes are in transition due to changes in the climate. Increased warmth in the summers and longer growing seasons are contributing to increasing tundra productivity and shrub-dominated vegetation. Beavers have increasingly moved into tundra areas during the past 20 years. The abundance of beaver colonization into the tundra is increasing beavers' influences on waterbodies (Jones et al 2020).

Beaver numbers remain high in Unit 23, particularly in the Selawik and Kobuk river drainages. In these drainages, beavers have fully occupied high quality habitat and now widely occur in marginal areas as well. Local residents are concerned about beavers damming streams important for subsistence fishing and about the threat of giardia in their drinking water (Harper and McCarthy 2013).

Harvest History

Current harvest data is limited because few people have sealed pelts since the Alaska Department of Fish and Game (ADF&G) made beaver sealing requirements voluntary for Unit 23 in 2000 (**Figure 1**). The most recent community harvest surveys in the ADF&G Community Subsistence Information System is 2014 (**Table 1**, ADF&G. 2021), which demonstrates that the reported harvest greatly underestimates actual harvest (ADF&G 2010, 2012, 2013a, 2013b, Parr 2016, 2017, 2018, Spivey 2019, 2020). The data suggests that beaver harvesting varies greatly by year and community.

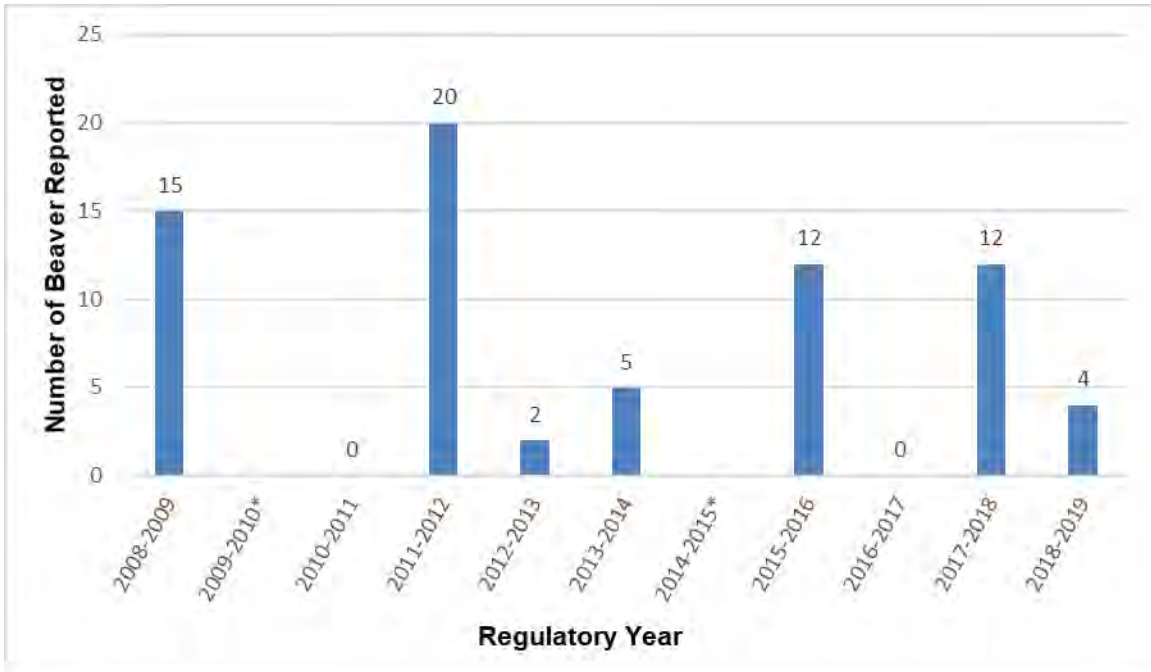


Figure 1. Number of beavers reported harvested in Unit 23 (ADF&G 2010, 2012, 2013a, 2013b, Parr 2016, 2017, 2018, Spivey 2019, 2020). *No report was written for 2009/10, 2014/2015.

Table 1. ADF&G Community subsistence harvest reported in Unit 23 (ADF&G 2021)

Year	Community	Reported Harvest
2010	Kivalina	0
2010	Noatak	4
2011	Selawik	120
2012	Ambler	116
2012	Kobuk	56
2012	Noovik	110
2012	Shungnak	68
2013	Deering	0
2014	Kotzebue	85
2014	Point Hope	0

Effects of the Proposal

If this proposal is adopted, the beaver harvest limit would be changed from 50 and 30 beaver per season in Unit 23 Kobuk/Selawik and Unit 23 remainder, respectively, to no harvest limit in both trap areas.

No impacts to the beaver population or user groups is expected as Federally qualified subsistence users can already trap an unlimited number of beavers on most (non-National Park) Federal lands under the more liberal State regulations. Additionally, adoption of this proposal would align Federal and State regulations, reducing the regulatory complexity for users.

OSM PRELIMINARY CONCLUSION

Support Proposal WP22-50 with **modification** to combine Unit 23 trap areas.

The modified regulations should read:

Unit 23—Beaver Trapping

Unit 23, the Kobuk and Selawik River drainages—50 beaver **No limit** *July 1-June 30*

Unit 23, remainder—30 beaver— *July 1-June 30*

Justification

Beaver populations appear stable at high levels (or even expanding) in Unit 23, and harvest levels do not appear to be having any negative impacts on beaver populations. Federally qualified subsistence users are already able to trap on most Federal public lands under the more liberal State regulations. Adopting this proposal would provide Federally qualified subsistence users with additional harvest opportunities for beaver trapping under Federal regulations. Combining Unit 23 Kobuk/Selawik and Unit 23 remainder trap areas would help simplify Federal regulations. Additionally, Federal and State regulations for beaver trapping in Unit 23 would be aligned, reducing regulatory complexity.

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Spivey, T. J. 2020. 2018 Alaska trapper report: 1 July 2018–30 June 2019. ADF&G, Division of Wildlife Conservation, Wildlife Management Report ADF&G/DWC/WMR-2020-1, Juneau. AK

WP22-53 Executive Summary	
General Description	Proposal WP22-53 requests establishing a trapping season for Arctic fox (<i>Vulpes lagopus</i>) in Unit 25. <i>Submitted by: Heimo Korth of Fort Yukon.</i>
Proposed Regulation	<p>Unit 25—Arctic Fox Trapping</p> <p><i>Fox, Arctic- No limit</i> <i>No season</i> <i>Nov. 1- last day of Feb.</i></p>
OSM Preliminary Conclusion	Support Proposal WP22-53
Eastern Interior Subsistence Regional Advisory Council	
Kodiak/Aleutians Subsistence Regional Advisory Council	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

**DRAFT STAFF ANALYSIS
WP22-53**

ISSUES

Proposal WP22-53, submitted by Heimo Korth of Fort Yukon, requests establishing a trapping season for Arctic fox (*Vulpes lagopus*) in Unit 25.

DISCUSSION

The proponent states that Arctic foxes are trapped in Unit 25, and in some years, they are trapped more than red, cross, or silver foxes. The State currently has an Arctic fox trapping season in Unit 25 and the proponent would like a Federal season to legalize take as well since many are already incidentally caught in Unit 25 in traps intended for other species.

Existing Federal Regulation

Unit 25—Arctic Fox Trapping

No Federal regulation

Proposed Federal Regulation

Unit 25—Arctic Fox Trapping

Fox, Arctic- No limit

~~No season~~ Nov. 1- last day of Feb.

Existing State Regulation

Unit 25 – Arctic Fox Trapping

Units 24 and 25: (White and blue color phases)

No limit

Nov. 1 – Feb. 28

Extent of Federal Public Lands

Unit 25 is comprised of 72.6% Federal public lands and consist of 56.4% U.S. Fish and Wildlife Service (USFWS) managed lands, 13.9% Bureau of Land Management (BLM) managed lands and, 2.3% National Park Service (NPS) managed lands.

Customary and Traditional Use Determinations

The Federal Subsistence Board has not made a customary and traditional use determination for Arctic fox in Unit 25. Therefore, all rural residents of Alaska may harvest this species in this unit.

Regulatory History

Currently there are no Federal subsistence trapping regulations for Arctic fox in Unit 25. The State of Alaska established a season for arctic fox in Unit 25 in 2004. The initial season was from Nov. 1 – Apr. 15 with no harvest limit. Since then, the State made one season dates modification, in 2006, to the trapping regulation of reducing the season to Nov. 1 – Feb. 28. The State has not changed the ‘no limit’ regulation since establishing the Arctic fox trapping season.

Biological Background

Population dynamics of Arctic fox in Unit 25 are not documented. The arctic fox is found in treeless coastal areas of Alaska from the Aleutian Islands north to Point Barrow and east to the Canada border. They prefer tundra habitat, usually near rocky shores, and have been observed ranging far out onto pack ice in winter. They are considered to have stable and sometimes abundant populations in their home range (ADF&G 2021). Young transient Arctic foxes have been known to cross the Brooks Range outside their home range to Unit 25 and other adjacent units in search of prey (Anthony 1997).

Harvest History

There was no reported Arctic fox harvest prior to 2018. For the trapping season of 2018-2019, 53 Arctic foxes were reported harvested in Unit 25 (Spivey 2020). However, harvest numbers may be higher since sealing of Arctic foxes is not required and incidental take in red fox traps is likely. The Alaska trapper report estimates the presence of Arctic fox as scarce in Unit 25 and other units south of the Brooks Range (Spivey 2020).

Effects of the Proposal

If this proposal is adopted, no impacts to the Arctic fox population or user groups is expected as Federally qualified subsistence users can already trap an unlimited number of Arctic foxes on all Federal lands in Unit 25 under the State regulations. Additionally, adoption of this proposal would align Federal and State trapping regulations, reducing the regulatory complexity for users. Incidental take of Arctic foxes on Red fox traps is unavoidable. The change in regulations would increase trapping opportunity for Federal qualified subsistence users and legalize the incidental take of Arctic fox under Federal regulations.

OSM PRELIMINARY CONCLUSION

Support Proposal WP22-53.

Justification

Population dynamics of Arctic fox in Unit 25 are not documented. However, Arctic fox populations in their home ranges seem to be stable. Unit 25 is not within the primary range and habitat for Arctic fox, and any Arctic fox harvested in this unit are likely transient individuals. Federally qualified subsistence users are already able to trap on Federal public lands under the State regulations. Adopting this proposal would provide Federally qualified subsistence users with additional harvest opportunities for Arctic fox trapping under Federal regulations. Additionally, Federal and State regulations for Arctic fox trapping in Unit 25 would be aligned, reducing regulatory complexity, and the incidental take of Arctic fox would become legal under Federal regulations.

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ANNUAL REPORT REPLY PROCESS REVISION

During the Federal Subsistence Board's (Board) August 2021 work session, the Board reviewed and discussed the annual report reply process and agreed to add this topic to the Regional Advisory Councils (Councils) Fall meeting agendas to get Council input on proposed revisions.

ANILCA, Section 805 gives authority to the Councils to prepare an annual report containing information related to current and future subsistence uses of fish and wildlife populations, an evaluation of current and future subsistence needs for these populations, a strategy for their management, and recommendations related to policies, standards, guidelines, and regulations to implement the strategy. These reports are invaluable as they provide the Board with a broad, holistic picture of local resource conditions, and the needs and challenges facing communities across rural Alaska. With this knowledge, the Board can make more informed decisions.

Historically, the Federal Subsistence Management Program has strived to provide responses to every topic listed in annual reports, developed by a diverse group of Federal staff. While all topics can be important to the Board in understanding local conditions, it is unclear if the responses on all matters warrant the use of often very limited staff capacity. Furthermore, the same or similar topics are often repeated in subsequent years with no resolution, and many topics are on issues over which the Board has no regulatory authority.

Importantly, ANILCA does not require replies to annual reports from the Councils and currently the Code of Federal Regulations state that the Board "consider the reports and recommendations of the Regional Councils." Instead of replying to every topic in an annual report, the Board believes it would be more beneficial to use other communication methods when Councils request a response from the Board, or from others who may have better technical understanding of each issue. Often this is already accomplished by Councils writing letters to these entities, including to the Board. This proposed revision will allow for more substantive and timely responses from the Board on topics most critical to the Councils. We propose that Councils consider letter writing as the most appropriate means for requesting a response to topics of concern, and that the annual report process be streamlined as a mechanism for informing the Board of local conditions and needs. Under this scenario, Councils could ask their Coordinators to write a letter to the Board if there are annual report topics to which they are specifically requesting a response. Any other topics, such as those outside the regulatory authority of the Board, can be addressed to the appropriate Federal agency staff at Council meetings, or Councils can write letters requesting a response directly from them, thus streamlining the response process and encouraging direct agency communications with the Councils.

The suggested revision is not intended to diminish the ability of the Councils to report to the Board on topics of concern, and Councils will still receive responses when requested from the Board. At this time, the Board is seeking input from the Councils on this proposed change to the annual report process. Council feedback on this issue is critical as the Board moves forward to make the reply process more efficient and responsive. The Board will consider Council input on this revision at its winter work session at the end of January 2022.

ANNUAL REPORTS

Background

ANILCA established the Annual Reports as the way to bring regional subsistence uses and needs to the Secretaries' attention. The Secretaries delegated this responsibility to the Board. Section 805(c) deference includes matters brought forward in the Annual Report.

The Annual Report provides the Councils an opportunity to address the directors of each of the four Department of Interior agencies and the Department of Agriculture Forest Service in their capacity as members of the Federal Subsistence Board. The Board is required to discuss and reply to each issue in every Annual Report and to take action when within the Board's authority. In many cases, if the issue is outside of the Board's authority, the Board will provide information to the Council on how to contact personnel at the correct agency. As agency directors, the Board members have authority to implement most of the actions which would effect the changes recommended by the Councils, even those not covered in Section 805(c). The Councils are strongly encouraged to take advantage of this opportunity.

Report Content

Both Title VIII Section 805 and 50 CFR §100.11 (Subpart B of the regulations) describe what may be contained in an Annual Report from the councils to the Board. This description includes issues that are not generally addressed by the normal regulatory process:

- an identification of current and anticipated subsistence uses of fish and wildlife populations within the region;
- an evaluation of current and anticipated subsistence needs for fish and wildlife populations from the public lands within the region;
- a recommended strategy for the management of fish and wildlife populations within the region to accommodate such subsistence uses and needs related to the public lands; and
- recommendations concerning policies, standards, guidelines, and regulations to implement the strategy.

Please avoid filler or fluff language that does not specifically raise an issue of concern or information to the Board.

Report Clarity

In order for the Board to adequately respond to each Council's annual report, it is important for the annual report itself to state issues clearly.

- If addressing an existing Board policy, Councils should please state whether there is something unclear about the policy, if there is uncertainty about the reason for the policy, or if the Council needs information on how the policy is applied.
- Council members should discuss in detail at Council meetings the issues for the annual report and assist the Council Coordinator in understanding and stating the issues clearly.

- Council Coordinators and OSM staff should assist the Council members during the meeting in ensuring that the issue is stated clearly.

Thus, if the Councils can be clear about their issues of concern and ensure that the Council Coordinator is relaying them sufficiently, then the Board and OSM staff will endeavor to provide as concise and responsive of a reply as is possible.

Report Format

While no particular format is necessary for the Annual Reports, the report must clearly state the following for each item the Council wants the Board to address:

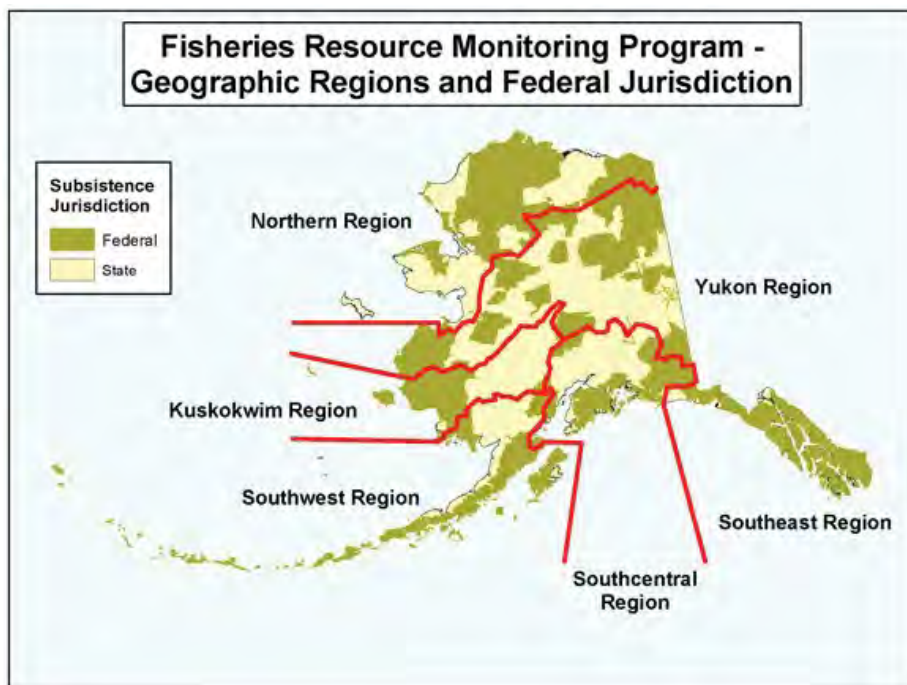
1. Numbering of the issues,
2. A description of each issue,
3. Whether the Council seeks Board action on the matter and, if so, what action the Council recommends, and
4. As much evidence or explanation as necessary to support the Council's request or statements relating to the item of interest.

FISHERIES RESOURCE MONITORING PROGRAM

BACKGROUND

Section 812 of the Alaska National Interest Lands Conservation Act (ANILCA) directs the Departments of the Interior and Agriculture, cooperating with other Federal agencies, the State of Alaska, and Alaska Native and other rural organizations, to research fish and wildlife subsistence uses on Federal public lands and to seek data from, consult with, and make use of the knowledge of local residents engaged in subsistence. When the Federal government assumed responsibility for management of subsistence fisheries on Federal public lands and waters in Alaska in 1999, the Secretaries of the Interior and Agriculture made a commitment to increase the quantity and quality of information available to manage subsistence fisheries, to increase quality and quantity of meaningful involvement by Alaska Native and other rural organizations, and to increase collaboration among Federal, State, Alaska Native, and rural organizations. The Fisheries Resource Monitoring Program (Monitoring Program) is a collaborative, interagency, interdisciplinary approach to enhance fisheries research and data in Alaska and effectively communicate information needed for subsistence fisheries management on Federal public lands and waters.

Every two years, the Office of Subsistence Management announces a funding opportunity for investigation plans addressing subsistence fisheries on Federal public lands. The 2022 Notice of Funding Opportunity focused on priority information needs developed by the Subsistence Regional Advisory Councils with input from strategic plans and subject matter specialists. The Monitoring Program is administered through regions to align with stock, harvest, and community issues common to a geographic area. The six Monitoring Program regions are shown below.



Strategic plans sponsored by the Monitoring Program have been developed by workgroups of fisheries managers, researchers, Subsistence Regional Advisory Councils, and by other stakeholders for three of the six regions: Southeast, Southcentral (excluding Cook Inlet Area), and Southwest Alaska, and for Yukon and Kuskokwim drainages whitefish (available for viewing at the Monitoring Program webpage at <https://www.doi.gov/subsistence/frmp/plans>). These plans identify prioritized information needs for each major subsistence fishery. Individual copies of plans are available from the Office of Subsistence Management by calling (907) 786-3888 or toll Free: (800) 478-1456 or by email subsistence@fws.gov. An independent strategic plan was completed for the Kuskokwim Region for salmon in 2006 and can be viewed at the Alaska-Yukon-Kuskokwim Sustainable Salmon Initiative website at <https://www.aykssi.org/salmon-research-plans/>.

Investigation plans are reviewed and evaluated by Office of Subsistence Management and U.S. Forest Service staff, and then scored by the Technical Review Committee. The Technical Review Committee's function is to provide evaluation, technical oversight, and strategic direction to the Monitoring Program. Each investigation plan is scored on the following five criteria: strategic priority, technical and scientific merit, investigator ability and resources, partnership and capacity building, and cost/benefit.

Project executive summaries are assembled into a draft 2022 Fisheries Resources Monitoring Plan. The draft plan is distributed for public review and comment through Subsistence Regional Advisory Council meetings, beginning in September 2021. The Federal Subsistence Board will review the draft plan and will accept written and oral comments at its January 2022 meeting. The Federal Subsistence Board forwards its comments to the Assistant Regional Director of the Office of Subsistence Management. Final funding approval lies with the Assistant Regional Director of the Office of Subsistence Management. Investigators are subsequently notified in writing of the status of their proposals.

HISTORICAL OVERVIEW

The Monitoring Program was first implemented in 2000 with an initial allocation of \$5 million. Since 2000, a total of \$127 million has been allocated for the Monitoring Program to fund a total of 494 projects (**Figure 1** and **Figure 2**).

During each two-year funding cycle, the Monitoring Program budget funds ongoing multi-year projects (2, 3, or 4 years) as well as new projects. Budget guidelines are established by geographic region (**Table 1**). The regional guidelines were developed using six criteria that included level of risk to species, level of threat to conservation units, amount of subsistence needs not being met, amount of information available to support subsistence management, importance of a species to subsistence harvest, and level of user concerns regarding subsistence harvest. Budget guidelines provide an initial target for planning; however, they are not final allocations and are adjusted annually as needed (**Figure 3**).

Figure 1. Monitoring Program Funds Distributed, by Organization Type, Since 2000

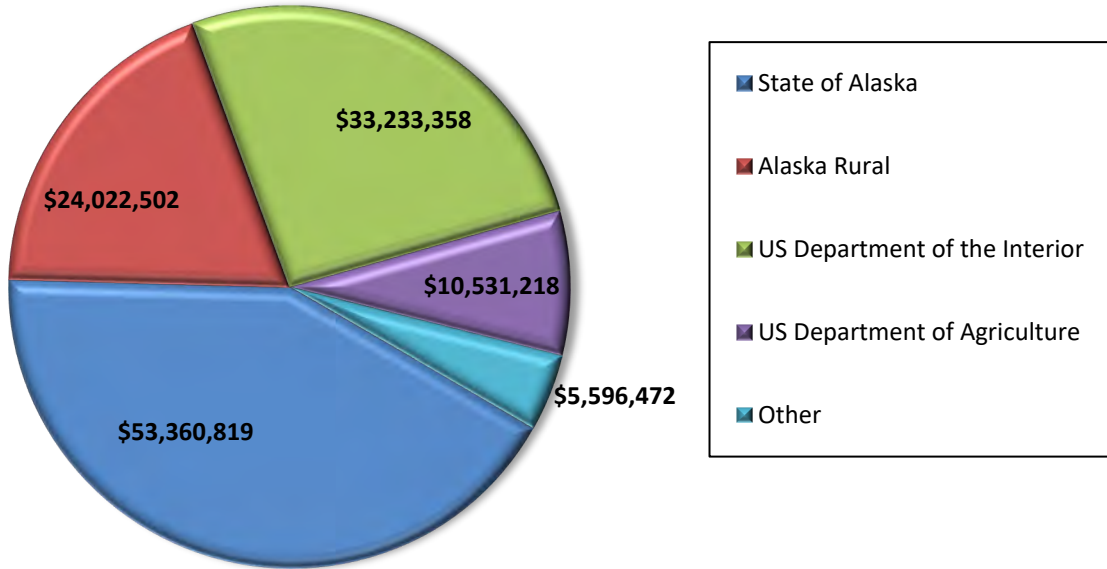


Figure 2. Number of Monitoring Program Projects Funded, by Organization Type, since 2000

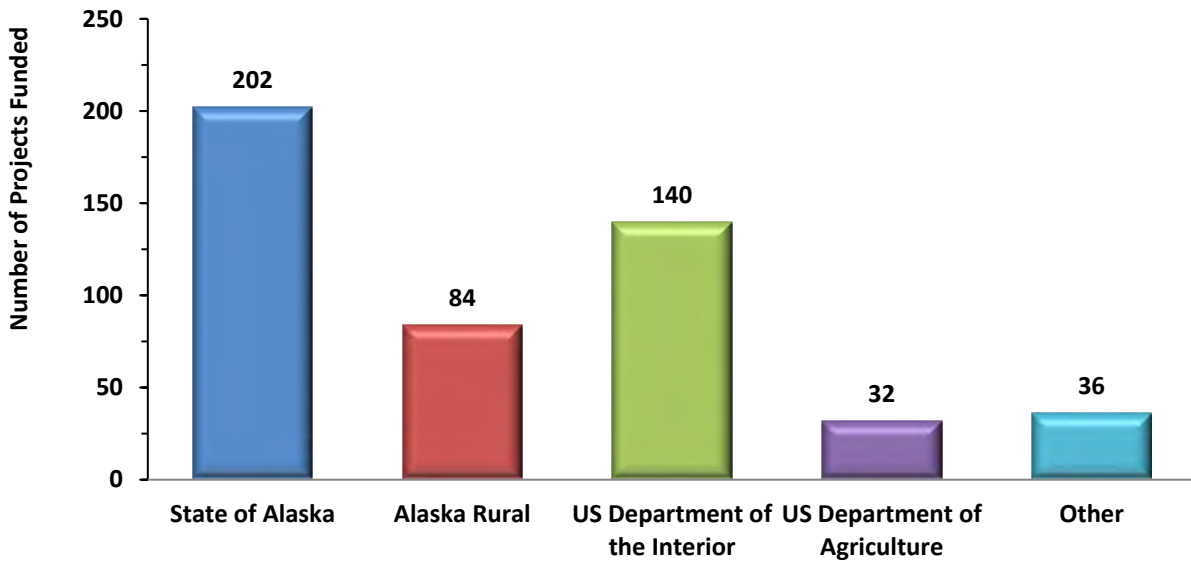
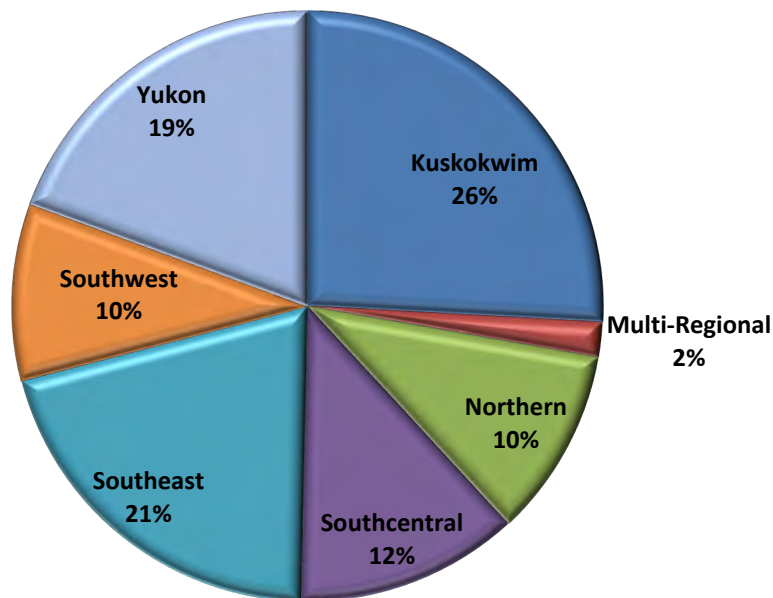


Table 1. Regional allocation guideline for Fisheries Resource Monitoring Program Funds.

Region	U.S. Department of the Interior Funds	U.S. Department of Agriculture Funds
Northern Alaska	17%	0%
Yukon Drainage	29%	0%
Kuskokwim Drainage	29%	0%
Southwest Alaska	15%	0%
Southcentral Alaska	5%	33%
Southeast Alaska	0%	67%
Multi-Regional	5%	0%

Figure 3. Percentage of Monitoring Program Funding Distributed to Each Region since 2000



The following three broad categories of information that are solicited for the Monitoring Program: (1) harvest monitoring, (2) traditional ecological knowledge, and (3) stock status and trends. Projects that combine these approaches are encouraged. Definitions of these three categories of information are listed below.

Harvest monitoring studies provide information on numbers and species of fish harvested, locations of harvests, and gear types used. Methods used to gather information on subsistence harvest patterns may include harvest calendars, mail-in questionnaires, household interviews, subsistence permit reports, and telephone interviews.

Traditional ecological knowledge studies are investigations of local knowledge directed at collecting and analyzing information on a variety of topics such as the sociocultural aspects of subsistence, fish ecology, species identification, local names, life history, taxonomy, seasonal movements, harvests, spawning and rearing areas, population trends, environmental observations, and traditional management systems. Methods used to document traditional ecological knowledge include ethnographic fieldwork, key respondent interviews with local experts, place name mapping, and open-ended surveys.

Stock status and trends studies provide information on abundance and run timing; age, size, and sex composition; migration and geographic distribution; survival of juveniles or adults; stock production; genetic stock identification; and mixed stock analyses. Methods used to gather information on stock status and trends include aerial and ground surveys, test fishing, towers, weirs, sonar, video, genetics, mark-recapture, and telemetry.

PROJECT EVALUATION PROCESS

The Monitoring Program prioritizes high quality projects that address critical subsistence and conservation concerns. Projects are selected for funding through an evaluation and review process that is designed to advance projects that are strategically important for the Federal Subsistence Management Program, technically sound, administratively competent, promoting partnerships and capacity building, and are cost effective. Projects are first evaluated by a panel called the Technical Review Committee. This committee is a standing interagency committee of senior technical experts. The Technical Review Committee reviews, evaluates, and makes recommendations about proposed projects that are consistent with the mission of the Monitoring Program. Fisheries and Anthropology staff from the Office of Subsistence Management provide support for the Technical Review Committee. Recommendations from the Technical Review Committee provide the basis for further comments from Subsistence Regional Advisory Councils, the public, the Interagency Staff Committee, and the Federal Subsistence Board, with final approval of the Monitoring Plan by the Assistant Regional Director of the Office of Subsistence Management.

To be considered for funding under the Monitoring Program, a proposed project must have a nexus to Federal subsistence fishery management. Proposed projects must have a direct association to a Federal subsistence fishery, and the subsistence fishery or fish stocks in question must occur in or pass-through waters within or adjacent to Federal public lands in Alaska (National Wildlife Refuges, National Forests, National Parks and Preserves, National Conservation Areas, National Wild and Scenic River Systems, National Petroleum Reserves, and National Recreation Areas). A complete project package must be submitted on time and must address the following five specific criteria to be considered a high-quality project.

1. **Strategic Priorities**—Studies should be responsive to information needs identified in the 2022 Priority Information Needs available at the Monitoring Program webpage at <https://www.doi.gov/subsistence/frmp/funding>. All projects must have a direct linkage to Federal public lands and/or waters to be eligible for funding under the Monitoring Program. To assist in evaluation of submittals for projects previously funded under the Monitoring Program, investigators must summarize project findings in their investigation plans. This summary should clearly and concisely document project performance, key findings, and uses of collected information for Federal subsistence management. Projects should address the following topics to demonstrate links to strategic priorities:

- Federal jurisdiction—The extent of Federal public waters in or nearby the project area
- Direct subsistence fisheries management implications
- Conservation mandate—Threat or risk to conservation of species and populations that support subsistence fisheries
- Potential impacts on the subsistence priority—Risk that subsistence harvest users’ goals will not be met
- Data gaps—Amount of information available to support subsistence management and how a project answers specific questions related to these gaps
- Role of the resource—Contribution of a species to a subsistence harvest (number of villages affected, pounds of fish harvested, miles of river) and qualitative significance (cultural value, unique seasonal role)
- Local concern—Level of user concerns over subsistence harvests (upstream vs. downstream allocation, effects of recreational use, changes in fish abundance and population characteristics)

2. **Technical-Scientific Merit**—Technical quality of the study design must meet accepted standards for information collection, compilation, analysis, and reporting. To demonstrate technical and scientific merit, applicants should describe how projects will:

- Advance science
- Answer immediate subsistence management or conservation concerns
- Have rigorous sampling and/or research designs
- Have specific, measurable, realistic, clearly stated, and achievable (attainable within the proposed project period) objectives
- Incorporate traditional knowledge and methods

Data collection, compilation, analysis, and reporting procedures should be clearly stated. Analytical procedures should be understandable to the non-scientific community. To assist in evaluation of submittals for continuing projects previously funded under the Monitoring

Program, summarize project findings and justify continuation of the project, placing the proposed work in context with the ongoing work being accomplished.

3. **Investigator Ability and Resources**—Investigators must show they are capable of successfully completing the proposed project by providing information on the ability (training, education, experience, and letters of support) and resources (technical and administrative) they possess to conduct the work. Investigators that have received funding in the past, via the Monitoring Program or other sources, are evaluated and scored on their past performance, including fulfillment of meeting deliverable and financial accountability deadlines. A record of failure to submit reports or delinquent submittal of reports will be taken into account when rating investigator ability and resources.
4. **Partnership and Capacity Building**—Investigators must demonstrate that capacity building has already reached the communication or partnership development stage during proposal development and, ideally, include a strategy to develop capacity building to higher levels, recognizing, however, that in some situations higher level involvement may not be desired or feasible by local organizations.

Investigators are requested to include a strategy for integrating local capacity development in their study plans or research designs. Investigators should inform communities and regional organizations in the area where work is to be conducted about their project plans. They should also consult and communicate with local communities to ensure that local knowledge is utilized and concerns are addressed. Investigators and their organizations should demonstrate their ability to maintain effective local relationships and commitment to capacity building. This includes a plan to facilitate and develop partnerships so that investigators, communities, and regional organizations can pursue and achieve the most meaningful level of involvement. Proposals demonstrating multiple, highly collaborative efforts with rural community members or Alaska Native Organizations are encouraged.

Successful capacity building requires developing trust and dialogue among investigators, local communities, and regional organizations. Investigators need to be flexible in modifying their work plan in response to local knowledge, issues, and concerns, and must also understand that capacity building is a reciprocal process in which all participants share and gain valuable knowledge. The reciprocal nature of the capacity building component(s) should be clearly demonstrated in proposals. Investigators are encouraged to develop the highest level of community and regional collaboration that is practical including joining as co-investigators.

Capacity can be built by increasing the technical capabilities of rural communities and Alaska Native organizations. This can be accomplished via several methods, including increased technical experience for individuals and the acquisition of necessary gear and equipment. Increased technical experience would include all areas of project management including logistics, financial accountability, implementation, and administration. Other examples may include internships or providing opportunities within the project for outreach, modeling, sampling design,

or project specific training. Another would be the acquisition of equipment that could be transferred to rural communities and tribal organizations upon the conclusion of the project.

A “meaningful partner” is a partner that is actively engaged in one or more aspects of project design, logistics, implementation and reporting requirements. Someone who simply agrees with the concept or provides a cursory look at the proposal is not a meaningful partner.

5. **Cost/Benefit**—This criterion evaluates the reasonableness (what a prudent person would pay) of the funding requested to provide benefits to the Federal Subsistence Management Program. Benefits could be tangible or intangible. Examples of tangible outcomes include data sets that directly inform management decisions or fill knowledge gaps and opportunities for youth or local resident involvement in monitoring, research and/or resource management efforts. Examples of possible intangible goals and objectives include enhanced relationships and communications between managers and communities, partnerships and collaborations on critical resource issues, and potential for increased capacity within both communities and agencies.

Applicants should be aware that the Government shall perform a “best value analysis” and the selection for award shall be made to the applicant whose proposal is most advantageous to the Government. The Office of Subsistence Management strives to maximize program efficiency by encouraging cost sharing, partnerships, and collaboration.

POLICY AND FUNDING GUIDELINES

Several policies have been developed to aid in implementing funding. These policies include:

- Projects of up to four years in duration may be considered
- Proposals requesting Monitoring Program funding that exceeds \$215,000 in any one year are not eligible for funding
- Studies must not duplicate existing projects
- Long term projects will be considered on a case-by-case basis

Activities that are not eligible for funding include:

- Habitat protection, mitigation, restoration, and enhancement
- Hatchery propagation, restoration, enhancement, and supplementation
- Contaminant assessment, evaluation, and monitoring
- Projects where the primary or only objective is outreach and education (for example, science camps, technician training, and intern programs), rather than information collection

The rationale behind these policy and funding guidelines is to ensure that existing responsibilities and efforts by government agencies are not duplicated under the Monitoring Program. Land management or regulatory agencies already have direct responsibility, as well as specific programs, to address these activities. However, the Monitoring Program may fund research to determine how these activities affect Federal subsistence fisheries or fishery resources.

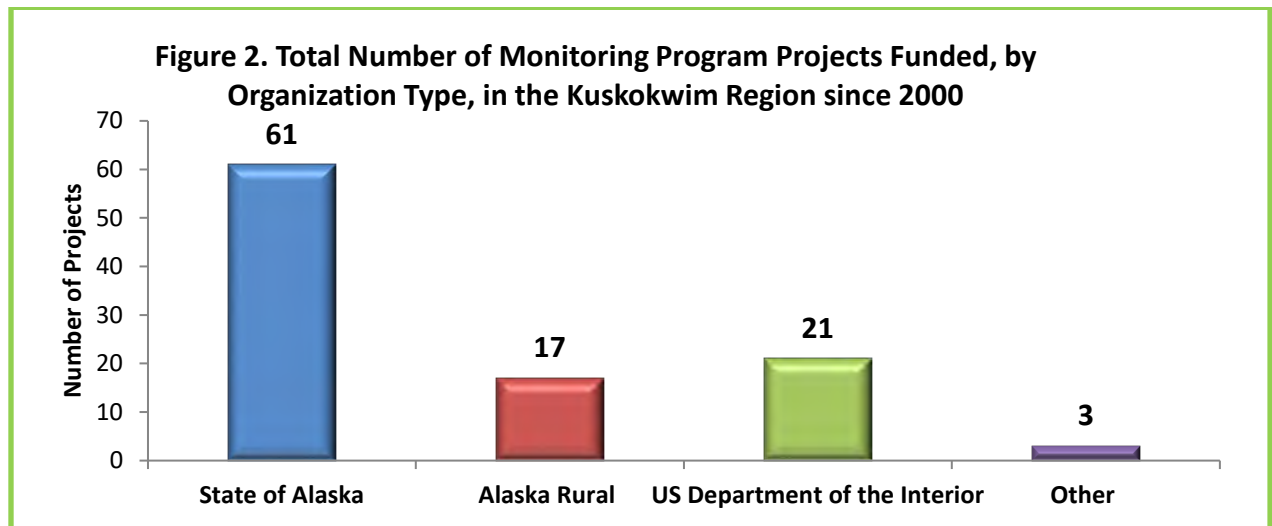
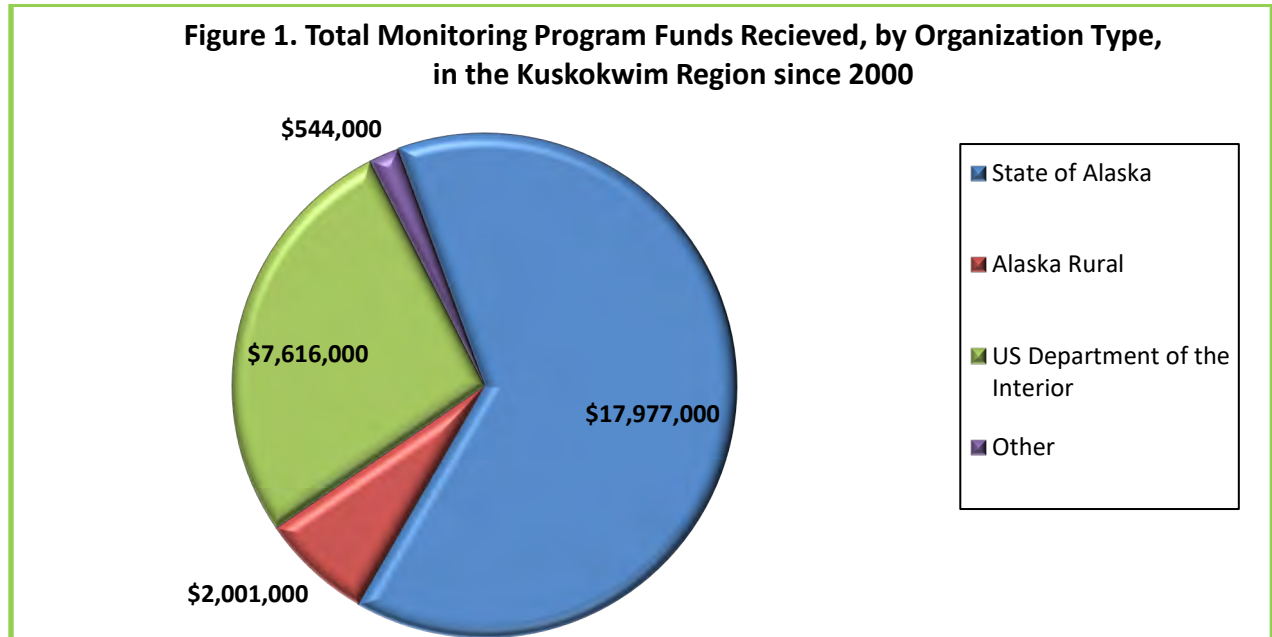
The Monitoring Program may fund assessments of key Federal subsistence fishery stocks in decline or that may decline due to climatological, environmental, habitat displacement, or other drivers; however, applicants must show how this knowledge would contribute to Federal subsistence fisheries management. Similarly, the Monitoring Program may legitimately fund projects that assess whether migratory barriers (e.g., falls, beaver dams) significantly affect spawning success or distribution; however, it would be inappropriate to fund projects to build fish passes, remove beaver dams, or otherwise alter or enhance habitat.

2022 FISHERIES RESOURCE MONITORING PLAN

For 2022, a total of 42 investigation plans were received and all are considered eligible for funding. For 2022, the Department of the Interior, through the U.S. Fish and Wildlife Service, will provide an anticipated \$1.5 million in funding for new projects. The U.S. Department of Agriculture, through the U.S. Forest Service, will provide an anticipated \$750,000 in funding.

FISHERIES RESOURCE MONITORING PROGRAM KUSKOKWIM REGION OVERVIEW

Since the inception of the Monitoring Program in 2000, a total of 102 projects have been undertaken in the Kuskokwim Region costing \$28.1 million (**Figure 1**). Of these, the State of Alaska received funds to conduct 61 projects, Alaska rural organizations conducted 17 projects, the U.S. Department of the Interior conducted 21 projects, and other organizations conducted 3 projects (**Figure 2**). See **Appendix 1** for more information on Kuskokwim Region projects completed since 2000.



PRIORITY INFORMATION NEEDS

The 2022 Notice of Funding Opportunity for the Kuskokwim Region identified the following 15 priority information needs:

- Impacts of climate change in continued harvest and use of fish; and impacts of climate change on fish, for example fish migration, spawning, and life cycle.
- Knowledge of population, reproduction, and health of spawning habitat for declining Humpback Whitefish populations.
- Documentation of oral histories describing salmon harvest methods in the Kuskokwim River drainage, specifically the period before the development of the modern commercial fishery.
- Reliable quantitative and/or qualitative estimates of salmon run size, escapement, and harvest in the Kuskokwim River drainage including Kuskokwim Bay tributaries.
- Explore new and cost effective methods for conducting in-season salmon run and harvest assessments in the Kuskokwim River drainage, with an emphasis on community-based monitoring.
- Estimates of “quality of escapement” measures to help inform salmon stock assessments, for example potential egg deposition, age, sex, and size composition of spawners, advancing genetic baselines.
- Improved Kuskokwim River drainage-wide and sub-stock specific salmon run size and timing forecasts.
- Distribution, abundance, condition, and survival of juvenile and out-migrating salmon in the Kuskokwim River drainage.
- Traditional ecological knowledge of fishes.
- Information sharing between stakeholders and agencies concerning salmon conservation in the Kuskokwim River drainage, for example outreach to villages using the media and other methods.
- The meaning and significance of sharing, barter, and/or customary trade of subsistence foods in the context of the social, cultural, and economic life of people in the lower Kuskokwim drainage.
- Effects of environmental stressors, such as heat stress, on salmon mortality during adult upriver migration and/or pre-spawn mortality within spawning tributaries.
- Effects of Ichthyophonous infection on Chinook and Chum Salmon mortality and spawning success.
- Assessment of incidental Chinook Salmon mortality with gillnets, with particular consideration for delayed mortality from entanglement or direct mortality from drop-outs (for example, loss of Chinook Salmon from 6-inch mesh nets).

- Collect baseline information on the resident fish community to better understand potential impacts and to assess impacts of proposed development projects.

AVAILABLE FUNDS

Federal Subsistence Board guidelines direct initial distribution of funds among regions. Regional budget guidelines provide an initial target for planning. For 2022, the U.S. Department of the Interior and U.S. Department of Agriculture, through the U.S. Fish and Wildlife Service and the U.S. Forest Service, will provide an anticipated \$2.25 million in funding statewide for new projects.

ROLE OF THE TECHNICAL REVIEW COMMITTEE

The mission of the Monitoring Program is to identify and provide information needed to sustain subsistence fisheries on Federal public lands for rural Alaskans through a multidisciplinary and collaborative program. It is the responsibility of the Technical Review Committee to develop the strongest possible funding plan for each region and across the entire state.

For the 2022 Monitoring Program, eight proposals were submitted for the Kuskokwim Region. The Technical Review Committee evaluated and scored each proposal on Strategic Priority, Technical and Scientific Merit, Investigator Ability and Resources, Partnership and Capacity Building, and Cost/Benefit (**Table 1**). These scores remain confidential. An executive summary for each proposal submitted to the 2022 Monitoring Program for the Kuskokwim Region is in **Appendix 2**.

Table 1. Projects submitted for the Kuskokwim Alaska Region, 2022 Monitoring Program, including total funds requested and average annual funding requests.

Project Number	Title	Total Project Request	Average Annual Request
22-300	Takotna River Weir Salmon Run Timing and Abundance	\$176,256	\$44,064
22-301	Kuskokwim River Broad Whitefish subsistence harvest and spawning abundance	\$800,084	\$200,021
22-304	George River Salmon Weir	\$733,900	\$183,475
22-350	Bethel Subsistence Harvest Surveys	\$372,134	\$93,034
22-351	Kuskokwim Management Area Postseason Subsistence Salmon Harvest Survey	\$859,011	\$214,753
22-352	Local and Traditional Knowledge of Salmon Harvest and Use for Subsistence in the Lower Kuskokwim River Drainage	\$366,440	\$183,220
22-353	Natural Indicators of Salmon in the Upper Kuskokwim River	\$180,055	\$90,028
22-354	Community-Based Harvest Monitoring Network for Kuskokwim River Chinook Salmon	\$254,795	\$63,699
Total		\$3,742,675	\$1,072,294

TECHNICAL REVIEW COMMITTEE JUSTIFICATIONS FOR PROPOSAL SCORES

Project Number: 22-300

Project Title: Takotna River Weir Salmon Run Timing and Abundance

Technical Review Committee justification: The investigation plan requests four years of funding to operate a community based weir project on the Takotna River to index Chinook and Chum salmon escapement to the headwaters of the Kuskokwim River drainage. The Federal nexus is clear and this project addresses multiple 2022 Priority Information Needs for the Kuskokwim Region. The Takotna River weir provides the only long-term weir data for a headwater tributary of the Kuskokwim River and is one of the few long-term ground-based projects that monitor less abundant/less productive tributaries in the drainage. Escapement data are used as inputs in the Chinook Salmon run reconstruction model and can be used to evaluate the effects of the early season closure on headwater stocks. While the methods for collecting biological data are technically sound, some of the objectives were vague and the data analysis section lacked the detail required to evaluate the proposed analytical procedures. In recent years, this project has been operated entirely by local residents which has demonstrated that a weir can be successfully run by a small community and operated to meet scientific standards. Overall, project costs are low relative to other weirs in the region and in-kind contributions provided by the Kuskokwim River Inter-Tribal Fish Commission exceed the funds requested from the Monitoring Program. Letters of support were received from the Alaska Department of Fish and Game, Bering Sea Fishermen's Association, Tanana Chiefs Conference, Takotna Tribal Council, and Yukon Delta National Wildlife Refuge.

Project Number: 22-301

Project Title: Kuskokwim River Broad Whitefish Subsistence Harvest and Spawning Abundance

Technical Review Committee Justification: The proposed project requests four years of funding to estimate population size, harvest rates and population demographics of Broad Whitefish in the Kuskokwim River using mark-recapture/mark-recovery techniques. The Federal nexus is clear and this project addresses a 2022 Priority Information Need for the Kuskokwim Region. Broad Whitefish are an important subsistence resource in the Kuskokwim River but local users have expressed concern that they may be over-exploited. If funded, this project could provide some of the most complete information regarding Broad Whitefish in the Kuskokwim River to date, which could be used to establish population baselines and develop management strategies. The Native Village of Napaimute and the Orutsararmut Native Council play meaningful roles in the project and are essential for achieving study objectives. Capacity will be built with Orutsararmut Native Council biologists who will learn the intricacies of mark recapture projects and electrofishing techniques. Study costs are high. However, contributing funds will be provided by the Kenai Fish and Wildlife Field Office to offset project costs. In addition, the level of requested funding is justifiable when considering the large geographic scale of the study and the potential diversity of results that will add substantially to the knowledge of Broad Whitefish harvest rates, abundance, and population demographics in the Kuskokwim River. Letters of support were received from the Native Village of Napaimute, Orutsararmut Native Council, and Yukon Delta National Wildlife Refuge.

Project Number: 22-304

Project Title: George River Salmon Weir

Technical Review Committee Justification: The investigation plan requests four years of funding to continue weir operations on the George River to index Chinook, Chum, and Coho salmon escapement to the middle portion of the Kuskokwim River drainage and conduct a high school internship program to build local capacity. The Federal nexus is clear and this project addresses a 2022 Priority Information Need for the Kuskokwim Region. Currently, the George River weir provides the only ground-based index of salmon escapement in the middle portion of the Kuskokwim River. Escapement data from this project are used as inputs in the reconstruction model, which estimates total annual abundance and escapement of Kuskokwim River Chinook Salmon. In addition, age-sex-length data are used to reconstruct brood year returns and monitor population production for Chinook and Coho salmon. The Native Village of Napaimute will conduct an internship program that provides high school students with experiences aimed at teaching watershed concepts, physical habitat assessment, biological sampling, and data analysis. Project costs are comparable to other weirs in the region and are reasonable for the proposed work. Letters of support were received from the Kuskokwim River Salmon Management Working Group, Orutsararmiut Native Council, and Yukon Delta National Wildlife Refuge.

Project Number: 22-350

Project Title: Bethel Subsistence Harvest Surveys

Technical Review Committee Justification: This four-year project will rely on subsistence salmon fishers in the Bethel area to gain reliable monitoring data on two components of the lower Kuskokwim subsistence fishery: (1) inseason subsistence harvest estimates for salmon and (2) Chinook age-sex-length sampling. Funding would continue work going back to the 1990s; similar research has been funded by the Monitoring Program since 2001. The proposal addresses two Priority Information Needs in the Kuskokwim Region identified in the 2022 Notice of Funding Opportunity. Federal nexus is provided by the Yukon Delta National Wildlife Refuge. Sizes of recent Chinook Salmon runs have been some of the lowest on record, resulting in fishery managers implementing harvest restrictions. Drainage residents are highly dependent on local salmon runs. This project has received Monitoring Program funding since 2001 and has been successfully re-conceived to address comments from the Technical Review Committee and better address information needs in the Kuskokwim Region. The project now includes the objective of calculating catch per unit effort by gear type. The project makes near real-time harvest estimates for the Bethel area available to fishery managers, contributing to better in-season management of the Chinook Salmon run. The project provides a strong and meaningful partnership between the Alaska Department of Fish and Game and the Orutsararmiut Native Council, which administers much of the project.

Project Number: 22-351

Project Title: Kuskokwim Management Area Postseason Subsistence Salmon Harvest Survey

Technical Review Committee Justification: The primary goal of the project is to estimate the harvest of salmon, by species, for subsistence purposes at 27 communities within the Kuskokwim Management Area, including a meaningful 20-year partnership with Orutsararmiut Native Council. The Federal nexus and high strategic priority are clear. The investigation plan is well-written, no substantial performance issues exist with this continuation project, investigators have adequate training to conduct the research,

project costs are reasonable for the work proposed, Division of Subsistence is contributing significant in-kind support.

Project Number: 22-352

Project Title: Local and Traditional Knowledge of Salmon Harvest and Use for Subsistence in the Lower Kuskokwim River Drainage

Technical Review Committee Justification: The project addresses two Priority Information Needs identified in the 2022 Notice of Funding Opportunity. The study area, the lower Kuskokwim River drainage, is within the Yukon Delta National Wildlife Refuge. The Federal nexus is clear. Technical and Scientific Merit is lacking, objectives are not clearly stated, and the description of mapping methodology is missing, making the project hard to evaluate. Five local assistants will be hired. Five letters of support were provided.

Project Number: 22-353

Project Title: Natural Indicators of Salmon in the Upper Kuskokwim River

Technical Review Committee Justification: The project addresses a Priority Information Need identified in the 2022 Notice of Funding Opportunity. Residents of study communities McGrath, Takotna, and Nikolai hold knowledge of fishes not documented in existing literature; however, investigators should provide better justification of the strategic importance of documenting this knowledge. Descriptions of mapping and interviewing methodology are lacking, making the project hard to evaluate. Local hire of research assistants is planned. Five letters of support were provided.

Project Number: 22-354

Project Title: Community-Based Harvest Monitoring Network for Kuskokwim River Chinook Salmon

Technical Review Committee Justification: This project integrates community-based harvest information (surveys and age-sex-length data collection) in the lower Kuskokwim River villages with similar data collected by ONC in the Bethel area (proposal 22-350) and aerial boat surveys to create near real-time harvest data for inseason management of the Kuskokwim River Chinook Salmon subsistence fishery. Because of the pressure on this system, managers need to ensure that inseason data is available for rapid decision-making. The project directly addresses three priority information needs for the Kuskokwim River. Overall, the methods for this project have been well-developed and tested. A previous version of this proposal was submitted in 2020. At that time, the Technical Review Committee raised concerns that the project's technical and scientific merit depended on Orutsararmiut Native Council's surveys also being funded, as well as to the high cost of the project. In comparison to the previous proposal, this proposed project has been developed into a partnership between the lead organization, Kuskokwim River Inter-Tribal Fish Commission, Bechtol Research, and Yukon Delta National Wildlife Refuge. The budget has also been reduced. However, it appears that the project's technical and scientific merit is still in large part based on Orutsararmiut Native Council's project (22-350) also being funded. The project's activities will support local capacity building through training harvest monitors in lower Kuskokwim villages; two-way information transfer will also be facilitated by monitors, who will act as intermediaries between fishers and managers. Letters of support were provided by Bering Sea Fishermen's Association, Orutsararmiut Native Council, and the Yukon Delta National Wildlife Refuge. Letters of support were not provided by the candidate villages to be included.

APPENDIX 1
PROJECTS FUNDED IN THE KUSKOKWIM REGION SINCE 2000

Project Number	Project Title	Investigators
Salmon Projects		
00-007	Tatlawiksuk River Salmon Weir	ADF&G, KNA
00-008	Bethel Inseason Subsistence Harvest Data	ONC
00-009	Bethel Postseason Harvest Monitoring	ADF&G, ONC
00-019	Kwethluk River Salmon Weir	USFWS, OVK
00-027	Goodnews River Salmon Weir	ADF&G
00-028	Kanektok River Salmon Weir	ADF&G, USFWS
00-029	Documentation/Communication on Floating Weirs	AVCP
00-030	Kuskokwim Salmon Project Site Surveys	ADF&G, USFWS
01-019	Planning Meetings in AVCP Region	AVCP, KNA
01-023	Upper Kuskokwim River Inseason Data	ADF&G, MNVC
01-024	Bethel Postseason Fishery Household Surveys	ADF&G, ONC
01-053	Tuluksak River Salmon Weir	USFWS, TNC
01-070	Kuskokwim River Chinook Salmon Genetic Diversity	ADF&G, USFWS
01-086	Kuskokwim River Escapement Project Technician	ONC
01-088	Natural Resource Internship Program	KNA
01-116	Kuskokwim River Salmon Work Group support	ADF&G
01-117	Kuskokwim Salmon Age-Sex-Length Assessment	ADF&G
01-118	Kanektok River Salmon Weir	ADF&G, BSFA
01-132	Bethel Inseason Subsistence Salmon Harvest Data	ONC, ADF&G
01-141	Holitna River Chinook, Chum and Coho Telemetry	ADF&G
01-147	Aniak River Sport Fisheries Survey	ADF&G, KNA
01-225	Middle Kuskokwim River Inseason Salmon Harvest	KNA, ADF&G, USFWS
01-226	Subsistence Fisheries Research Capacity Building	ADF&G
02-036	Aniak Postseason Subsistence Fishery Surveys	ADF&G, KNA
02-046	Kuskokwim River Chinook Salmon Inriver Abundance	ADF&G
03-030	Kuskokwim River Salmon Mark-Recapture	ADF&G, KNA
03-041	Kuskokwim Coho Salmon Genetics	ADF&G, USFWS
03-931	Kuskokwim Science Plan	BSFA
04-301	Kwethluk River Salmon Weir	USFWS, OVK
04-302	Tuluksak River Salmon Weir	USFWS, TNC
04-305	Kanektok River Salmon Weir	ADF&G, BSFA
04-310	Tatlawiksuk River Salmon Weir	ADF&G, KNA
04-311	Kuskokwim Coho Salmon Genetic Mixed Stock Assessment	USFWS
04-312	Goodnews River Coho Salmon Weir	ADF&G
04-351	Kuskokwim Bay Traditional Ecological Knowledge and Oral History	USFWS

Project Number	Project Title	Investigators
04-353	Bethel Inseason Subsistence Salmon Data Collection	ADF&G, ONC
04-359	Kuskokwim Postseason Salmon Subsistence Harvest Surveys	ADF&G, KNA, ONC
05-302	Kuskokwim River Chinook Salmon Inriver Abundance	ADF&G
05-304	George and Takotna River Salmon Weirs	ADF&G
05-305	Kuskokwim Chinook Salmon Genetic Stock Identification	ADF&G
05-306	Kuskokwim River Inseason Subsistence Harvest Data Collection	ADF&G, ONC
05-307	Lower Kuskokwim Subsistence Fisheries Catch Monitoring	ONC
05-353	Nunivak Island Subsistence Cod Fisheries	NPT
05-356	Kuskokwim Area Postseason Subsistence Salmon Harvest Survey	ADF&G
06-306	Lower Kuskokwim Salmon Inseason Subsistence Catch Monitoring	ADF&G
06-307	Kuskokwim River Salmon Management Working Group	ADF&G
07-302	Kuskokwim River Chum Salmon Run Reconstruction	ADF&G, BC
07-303	Kuskokwim River Salmon Age-Sex-Length Assessment	ADF&G
07-304	Tatlawiksuk River Salmon Weir	ADF&G, KNA
07-305	Kanektok-Goodnews River Salmon and Dolly Varden Weirs	ADF&G
07-306	Kwethluk River Salmon Weir	USFWS, OVK
07-307	Tuluksak River Salmon Weir	USFWS, TNC
08-302	Lower Kuskokwim Subsistence Chinook Salmon Age-Sex-Length	ADF&G
08-303	George River Salmon Weir	ADF&G
08-304	Takotna River Salmon Weir	ADF&G
08-351	Tuluksak River Subsistence Chinook Salmon Age-Sex-Length	USFWS
08-352	Bethel and Aniak Postseason Subsistence Salmon Harvest Surveys	ADF&G
10-300	Kanektok and Goodnews River Salmon Assessment	ADF&G
10-303	Kuskokwim River Salmon Age Sex Length Assessment	ADF&G
10-304	Tatlawiksuk River Salmon Assessment	ADF&G
10-306	Kwethluk River Salmon Assessment	USFWS
10-307	Tuluksak River Salmon Assessment	USFWS
10-352	Kuskokwim Salmon Postseason Harvest Monitoring	ADF&G
10-353	Kuskokwim Salmon Working Group Support	ADF&G
10-354	Kuskokwim Salmon Inseason Harvest Monitoring	ADF&G
12-302	Lower Kuskokwim River Subsistence Chinook Salmon Harvest ASL	ADF&G, ONC
12-303	George River Salmon Weir	ADF&G, KNA
12-304	Takotna River Salmon Weir	ADF&G, TCA
12-309	Kwethluk River Salmon Weir	USFWS
14-302	Tatlawiksuk River Salmon Weir	ADF&G
14-303	George River Salmon Weir	ADF&G

Project Number	Project Title	Investigators
14-306	Tuluksak River Salmon Weir	USFWS
14-308	Kwethluk River Salmon Weir	USFWS
14-351	Kuskokwim Delta Chinook Salmon Non-local Harvesters	USFS
14-352	Kuskokwim Area Salmon Post-season Subsistence Harvest Surveys	ADF&G
14-353	Kuskokwim River Salmon Inseason Subsistence Survey	ADF&G
14-354	Kuskokwim River Support for Cooperative Management	ADF&G
16-301	Lower Kuskokwim River Subsistence Chinook Salmon Harvest ASL	ADF&G, ONC
16-302	Salmon River of the Pitka Fork Weir	ADF&G, MTNT
16-351	Middle Kuskokwim River In season Subsistence Salmon Harvest Monitoring and estimation	ADF&G, NVN
18-304	George River Salmon Weir	ADF&G
18-350	Bethel Subsistence Harvest Surveys	ONC, ADF&G
18-351	Kuskokwim Area Salmon Post Season Subsistence Harvest Surveys	ADF&G, ONC
20-301	Salmon River of the Pitka Fork Chinook Salmon Escapement Monitoring	ADF&G, ONC
20-302	Salmon River of the Pitka Fork Chinook Salmon Escapement Monitoring	ADF&G, MTNT
20-303	Middle Kuskokwim River Chinook and Chum Salmon In-Season Assessment	NVN
20-308	Kwethluk River Salmon Run Timing and Abundance	USFWS, OVK, KRITFC, BSFA
Resident Species		
01-052	Whitefish Lake Humpback & Broad Whitefish	USFWS, KNA
01-112	Aniak River Subsistence Fisheries Study	ADF&G, KNA
01-235	Upper Kuskokwim Community Use Profiles	ADF&G
04-304	Whitefish Lake Whitefish Telemetry	USFWS
05-301	Whitefish PIT Tags	USFWS
06-303	Kuskokwim River Whitefish Migratory Behavior	USFWS, KNA
06-305	Kuskokwim River Inconnu Spawning Distribution	ADF&G
06-351	Lower Kuskokwim Non-salmon Harvest and TEK	ADF&G, AVCP
08-300	Aniak River Rainbow Trout Seasonal Distribution	ADF&G
10-305	Kuskokwim River Sheefish Spawning, Distribution and Timing	ADF&G
12-312	Status of sheefish in Highpower Creek and Upper Kuskokwim River	ADF&G
12-313	Location, Migration Timing, and Description of Kuskokwim River Bering Cisco Spawning Origins	KNA, USFWS
12-352	Whitefish Trends on the Upper Kuskokwim, Alaska	ADF&G
14-301	Kuskokwim River Broad Whitefish Spawning above McGrath	USFWS
14-307	Upper Kuskokwim River Sheefish Enumeration	USFWS
14-356	Lower Kuskokwim Villages Whitefish	CEC

Project Number	Project Title	Investigators
16-303	Enumeration and spawning area characterization of Sheefish in the Upper Kuskokwim River	ADF&G

Abbreviations: AC = Alaskan Connections, ADF&G = Alaska Department of Fish and Game, AVCP = Association of Village Council Presidents, AV = Arctic Village, BF = Bill Fliris, BUE = Bue Consulting, BLM = Bureau of Land Management, BSFA = Bering Sea Fisherman's Association, CATG = Council of Athabaskan Tribal Governments, CEC = Calista Education and Culture, COK = City of Kaltag, DFO = Department of Fisheries and Oceans, EMV = Emmonak Village Council, KAL = City of Kaltag, NPS = National Park Service, LTC = Louden Tribal Council, NVE = Native Village of Eagle, NVHB = Native Village of Hooper Bay, NVV = Native Village of Venetie, RN = Research North, RW = Robert Wolfe and Associates, SVNRC = Stevens Village, SZ=Stan Zuray, TCC = Tanana Chiefs Conference, TTC = Tanana Tribal Council, UAF = University of Alaska Fairbanks, USFWS = U.S. Fish and Wildlife Service, USGS = U.S. Geological Survey, UW = University of Washington, and YRDFA = Yukon River Drainage Fisheries Association.

APPENDIX 2 EXECUTIVE SUMMARIES

The following executive summaries were written by principal investigators and were submitted to the Office of Subsistence Management as part of proposal packages. They may not reflect the opinions of the Office of Subsistence Management or the Technical Review Committee. Executive summaries may have been altered for length.

Project Number:	22-300			
Title:	Takotna River Salmon Run Timing and Abundance			
Geographic Region:	Kuskokwim			
Data Types:	Stock Status and Trends			
Principal Investigator:	Kevin Whitworth, Kuskokwim River Inter-Tribal Fish Commission			
Co-investigator:	William Bechtol, Bechtol Research			
Project Cost:	2022: \$42,515	2023: \$43,527	2024: \$44,570	2025: \$45,644
Total Cost:	\$176,256			

Overview: This project focuses on strategic priority information needs identified for the Kuskokwim Region in the 2022 Fisheries Resource Monitoring Program by providing reliable escapement estimates for Chinook salmon *Oncorhynchus tshawytscha* and chum salmon *O. keta* in the Takotna River. Management of Kuskokwim Area salmon fisheries is complex because of variability in run size, timing, and harvest of mixed stocks, overlapping runs of multiple species, allocation issues, and the immense size of the Kuskokwim River drainage. Chinook salmon of the Kuskokwim River watershed spawn in over 25 distinct areas, with each spawning subpopulation likely adapted to local, sub-watershed, conditions through traits such as juvenile behavior and residence time, and adult spawning duration and timing. These adaptations result in different productive capacities (i.e., average number of adult recruits expected per spawner), different carrying capacities (i.e., maximum number of spawners or juveniles a freshwater habitat can support), and different responses or tolerances to fishing pressure and environmental change. This variability in productivity and adaptation is critical to supporting resilience to environmental change

and to dampening variability in fishery harvests. This diversity, or portfolio, of subpopulations with different characteristics allows some stock components to flourish when other components have responded negatively to environmental conditions or harvest pressures.

Specific issues important to Federal management in support of subsistence fisheries include:

- Maintaining salmon diversity/biocomplexity is critically important for Federal subsistence management.
- It is important to maintain the full complement of salmon diversity, including those stocks which are currently less productive or small in size that migrate through Federal waters and help support subsistence needs.
- Weir-based stock assessments typically focus on more abundant or more productive Chinook populations. This focus can introduce bias in the spawner/recruit analysis in an anti-precautionary direction, providing a more optimistic perception of watershed productivity than is warranted
- The Takotna River weir is the only project in the watershed that monitors the dynamics of small populations of salmon species, and therefore functions as a sentinel with a long-term time series for dozens of discrete smaller, less productive populations in the Kuskokwim region.
- Based on these considerations, this project has disproportional benefits and addresses diversity mandates within the Yukon Delta National Wildlife Refuge.

In conjunction with salmon escapement data, there is a need to assess and evaluate the impacts of climate change on the Kuskokwim River ecosystem. Assessment of climate change impacts depends on long-term environmental data to provide a meaningful timeframe for comparison.

Objectives: The overarching project goal is to continue a long-term, ground-based project that will adequately index escapement to the headwaters of the Kuskokwim River, continuing the only long-term data set evaluating Chinook and chum salmon escapement to a headwater tributary, while also continuing the time series of environmental data to provide researchers and managers with indices useful to understanding local impacts of climate change. Given the aspects of local hire and simplified logistics due to having the weir located adjacent to a community, this project is intended to serve as a relatively low-cost assessment platform compared to similar projects. Specific project objectives include:

1. Enumerate the daily passage and characterize the run timing of Chinook salmon through a resistance board weir from July 1 to August 10.
2. Enumerate the daily passage and characterize the run timing of chum salmon, and resident fish species through a resistance board weir from July 1 to August 10.
3. Estimate the weekly age, sex, and length composition of Chinook salmon such that the simultaneous 95% confidence intervals have a maximum width of 0.20.
4. Collect information on seasonal passage of other fish species.
5. Collect environmental data.
6. Serve as a platform to develop local talent in a community-based stock assessment project, conduct community outreach, and engage local Alaska Native and rural communities in fisheries partnership projects.
7. Serve as a platform for future research projects such as tagging studies, collection of genetics data, heat stress monitoring, and monitoring of environmental data.

Methods: A resistance board weir will be installed several hundred meters above the Takotna River Bridge near the community of Takotna. The target operational period of July 1 to August 10

encompasses the bulk of Chinook and chum salmon returns and provides insights into seasonal passage of other fish species. A live trap allows fish to freely pass during counting, or to be retained for collection of age, sex, and length data (ASL) or genetic samples. Daily weir operation will involve a 2-member locally hired weir crew with oversight by a local crew leader or local assistant crew leader. Counts of passing fish will be made at a frequency of four to eight shifts per day between 0700 and 2400 hours. Counting effort will increase during times of high fish passage to reduce stress to fish held in the live box. Counts by species will be transferred to a logbook, with total daily and cumulative counts and other weir operation information, then transferred to a Google Drive account at the end of each day. The weir will be cleaned daily, or as needed, and inspected for holes with potential missed passage documented; carcasses will be identified and counted by species and sex. Chinook salmon escapement will be sampled daily for ASL in proportion to the observed passage abundance, but with an overall target sample size of 190 fish. To do this, weir crew members will use a short-handled dipnet to remove fish from the live trap and place them into a partially submerged fish “cradle.” Sex (determined visually by external examination) and length (mid-eye to tail fork; nearest mm) will be recorded on standardized numbered data sheets that correspond to numbers on gummed scale cards, and fish scales will be removed from the preferred area above the lateral line, cleaned, and placed on the gummed cards.

Partnerships and Capacity Building: The Takotna River hosts the only weir in the Kuskokwim watershed entirely installed and operated by local technicians and supervised by a professional local fisheries biologist. Partnerships are crucial to effective weir installation and operation. The Takotna Tribal Council, Nikolai Edzeno Village Council, and the community of Takotna have partnered with previous Takotna River escapement projects and will be consulted regarding weir operation and potential crew hires. The Alaska Department of Fish & Game (ADF&G) has entered into cooperative agreements with the Kuskokwim River Inter-Tribal Fish Commission (KRITFC) to operate the weir. Furthermore, this weir project will continue the efforts to operate the weir as a community assessment project, which builds local capacity by involving local residents in weir operation and involving both residents and Alaska Native/Village councils in data collection that affects fishery management. Local hires from the communities of Takotna and Nikolai comprised all the staff operating the Takotna River weir during the 2017 and 2020 field seasons, and this trend will continue in this project. Administrative support will be provided by the Takotna Village Council, Bering Sea Fishermen’s Association (BSFA), and KRITFC.

Project Number:	22-301			
Title:	Kuskokwim River Broad Whitefish Subsistence Harvest and Spawning Abundance			
Geographic Region:	Kuskokwim			
Data Types:	Stock Status and Trends and Harvest Monitoring			
Principal Investigator:	Frank Harris, U.S. Fish and Wildlife Service, Kenai Fish and Wildlife Conservation Office			
Co-investigator:	Gary Decossas, U.S. Fish and Wildlife Service, Yukon Delta National Wildlife Refuge			
	Dan Gillikin, Native Village of Napaimute			
	Danielle Lowrey, Orutsararmiut Native Council			
Project Cost:	2022: \$174,380	2023: \$205,590	2024: \$208,826	2025: \$211,288
Total Cost:	\$800,084			

Statement of Need/Issue Addressed: This project specifically addresses the following Kuskokwim River Region Priority Information Needs (PINs) identified by the Notice of Funding Opportunity for the 2022 Fisheries Resource Monitoring Program (FRMP): (1) Collect baseline information on the resident fish community to better understand potential impacts and to assess impacts of proposed development projects; (2) Impacts of climate change in continued harvest and use of fish; and impacts of climate change on fish, for example fish migration, spawning, and life cycle.

Objectives:

1. Estimate subsistence harvest rates in the Kuskokwim River for the Broad Whitefish population segment that spawns near McGrath, Alaska.
2. Estimate population demographics including abundance, emigration rates, age, sex, length, and weight for the Broad Whitefish population that spawns near McGrath, Alaska.
 - a. Precision of abundance estimates rely heavily on recovery of marked Broad Whitefish from subsistence harvest and spawning season mark-recapture events.
 - b. Estimate the proportional age and sex composition of mature Broad Whitefish spawning above McGrath, Alaska such that estimates are within 5% of the actual true population proportions 95% of the time.
 - c. Estimate the mean length and weight of mature Broad Whitefish spawning above McGrath, Alaska such that estimates are within 10% of the actual population means 95% of the time.
3. Describe times and areas of Broad Whitefish harvest throughout the Kuskokwim River drainage through tag recovery of marked Broad Whitefish caught by subsistence fishers.

General Study: This study will employ a mark-recapture/mark-recovery modeling framework to estimate population size, harvest rates and population demographics of Broad Whitefish. The project will be implemented for four years, including harvest recovery and live resights after the fourth spawning season. Since Broad Whitefish are suspected of being skip spawners (spawn every other year), sampling for four years ensures that the whole spawning population is available for capture, not just one spawning sub- population. Harvest occurs throughout the Kuskokwim River drainage year around, therefore recovery of marked fish caught by subsistence users can occur at any time. Mark-recapture of fish will occur in a relatively short period of time during the fall spawning migration near McGrath, Alaska—approximately August 20 to October 10. Inferences from this study will pertain solely to the spawning population of Broad Whitefish near McGrath. Ultimately if successful, a basin wide estimate of harvest/exploitation and abundance of mature spawning Broad Whitefish could be achieved.

Project Number:	22-304			
Title:	George River Salmon Weir			
Geographic Region:	Kuskokwim			
Data Types:	Stock Status and Trends			
Principal Investigator:	Bobette Dickerson, Alaska Department of Fish and Game			
Co-investigator:	Sean Larson, Alaska Department of Fish and Game Dan Gillikin Native Village of Napaimute			
Project Cost:	2022: \$214,882	2023: \$182,695	2024: \$186,624	2025: \$149,699
Total Cost:	\$733,900			

Issue: We propose to continue operations of a weir on the George River to index Chinook (*Oncorhynchus tshawytscha*), chum (*O. keta*), and coho (*O. kisutch*) salmon escapement to the middle portion of the Kuskokwim River drainage, as well as conduct a high school internship program as part of our long-term efforts to build local capacity. Our proposal is in response to the priority information needs identified in the 2022 FRMP request for proposals to obtain reliable quantitative and/or qualitative estimates of salmon run size, escapement, and harvest in the Kuskokwim River drainage, including Kuskokwim Bay tributaries. This proposal would continue a 25-year dataset used to evaluate the size and composition of Chinook, chum, and coho salmon escapements to the middle Kuskokwim River. Annual monitoring is needed to evaluate if escapements are within the bounds of the established Chinook salmon escapement goal on the George River. In addition, escapement at the George River weir is used to inform a model that estimates total annual abundance and escapement for Kuskokwim River Chinook salmon. The success of the George River weir has made it an integral component of the broader salmon escapement monitoring program on the Kuskokwim River. Apart from its utility to the management of the Kuskokwim River subsistence fishery, the George River weir has been important in fostering community awareness, understanding, and direct involvement in fisheries assessment. Since 2005, the George River weir has been the site of high school mentorship and college internship programs sponsoring hundreds of high school age students and multiple college interns from throughout the Kuskokwim Region. The internship program has proven to be highly successful. In recent years, many of the fisheries technicians and crew leaders working on Kuskokwim River weir projects are past graduates of the high school and college internship programs. Several are currently pursuing degrees in fisheries science.

Objectives:

Our overall project goals are to index escapement of Chinook, chum, and coho salmon to the middle portion of the Kuskokwim River drainage and provide capacity building and education opportunities for local stakeholders. Specific objectives of this project are to:

1. Estimate the daily and total annual Chinook, chum, and coho salmon escapements from 15 June to 20 September.
2. Collect age, sex, and length (ASL) data from Chinook, chum, and coho salmon using weir traps, such that the number of samples collected will allow for future estimates of age composition with 95% confidence intervals no wider than $\pm 10\%$ ($\alpha=0.05$, $d=0.10$).
3. Operate a high school internship program for 10 students for 8 days to foster local interest in natural resource management and field biology and expose high school students to employment and post-secondary education possibilities.

Methods: We will conduct daily visual counts of salmon escapement to the George River from 15 June to 20 September and collect ASL samples from 230 Chinook salmon, 400 chum salmon, and 400 coho salmon throughout the run, in proportion to run abundance. All data will be uploaded to a publicly accessible database and made available weekly at inseason meetings to inform fisheries management decisions. Final results will be published in the ADF&G Fishery Data Series. An 8-day internship will be provided for up to 10 students.

Partnerships/Capacity Building: Staff from ADF&G and NVN will conduct this project in partnership. Of particular interest is the internship program which provides students from communities in the area with the opportunity to interact with biologists, ADF&G staff, and professional educators acting as mentors. Throughout this project, ADF&G and NVN will work together to disseminate project results and related fisheries management issues to middle river communities during quarterly stakeholder newsletters and community meetings in the middle river.

Project Number:	22-350			
Title:	Bethel Subsistence Harvest Surveys			
Geographic Region:	Kuskokwim			
Data Types:	Harvest Monitoring			
Principal Investigator:	Danielle Lowrey, Orutsararmut Native Council			
Co-investigator:	Janessa Esquible, Orutsararmut Native Council Sean Larson, Alaska Department of Fish and Game			
Project Cost:	2022: \$91,388	2023: \$91,973	2024: \$93,320	2025: \$95,453
Total Cost:	\$372,134			

Issue: The proposed project will collect detailed quantitative and qualitative subsistence harvest and age-sex-length (ASL) information in the Bethel area to quantify subsistence harvest effort and catch composition during the Chinook salmon (*Oncorhynchus tshawytscha*), chum salmon (*O. keta*), and sockeye salmon (*O. nerka*) runs. Data collected in this project addresses the 2022 priority information needs by 1) providing reliable quantitative and qualitative estimates of salmon harvests by conducting inseason harvest surveys in the Bethel area from late-May through mid-July and producing inseason harvest estimates, and 2) sharing information between stakeholders and agencies concerning salmon conservation via various outreach methods. This project will also collect Chinook salmon ASL data to measure the quality of escapement in which the state and Federal agencies can utilize for management of the subsistence fishery.

The overarching goal of this project is to provide state and Federal managers and stakeholders with relevant subsistence harvest effort, catch, and composition information collected from a representative subset of families who harvest salmon for subsistence purposes in the Bethel area. Continuous contact with subsistence fishing work groups during the fishing season provides a meaningful opportunity for subsistence users to share their perspectives on the annual salmon runs, harvest needs, and personal impacts of management decisions. This time also allows ONC staff to provide a communication channel between subsistence users and fishery management agencies, by sharing information about management decisions, conservation efforts, and other relevant information. Inseason subsistence harvest data that's collected will be utilized to inform inseason harvest models and decisions while also serving as a time-series that provide insight into trends in gear usage, fishing effort, and subsistence fleet timing. These long-term datasets can ultimately improve our understanding of Chinook salmon subsistence harvest patterns and the resulting impact on escapement and run dynamics. All goals and outcomes will be achieved through a collaborative

effort between Orutsararmiut Native Council (ONC) and Alaska Department of Fish & Game (ADF&G) to collect, process, and analyze all data.

Objectives:

1. Determine Bethel area subsistence users' relative change in salmon harvest goals for Chinook, chum, and sockeye salmon compared to the prior year, and monitor weekly progress towards achieving annual salmon harvest goals.
2. Document subsistence fishing activity in the Bethel area, including when families begin subsistence fishing, weekly participation, catch per unit effort by gear type, catch composition to provide reliable quantitative estimates of salmon harvests and utilize this data collected to produce inseason harvest estimates in collaboration with Kuskokwim River Intertribal Fish Commission (KRITFC).
3. Estimate the annual ASL composition of Chinook salmon harvested in the Bethel area subsistence fishery.
4. Improve information sharing between stakeholders and agencies concerning salmon conservation in the Kuskokwim River drainage.

Methods: Subsistence harvest information and comments made upon salmon conservation and/or management from fishers will be collected through weekly visits to surrounding Bethel fish camps and opportunistic encounters at the Bethel Boat Harbor in the months of June and July by trained ONC Fisheries Technicians. ONC Fisheries Technicians will also provide information updates from fisheries managers and an informational flyer to the fishers they survey to ensure there is two-way information sharing. The harvest data collected will be utilized to produce inseason harvest estimates in collaboration with KRITFC. Harvest data collected each week by ONC technicians in addition to any comments from fishers regarding conservation or management will be composed into weekly reports and presented at weekly Kuskokwim River Salmon Management Working Group (Working Group) meetings to promote information sharing between stakeholder and agencies. ASL information will be obtained through concerted recruitment efforts of fishers in the Bethel area that will voluntarily sample their Chinook salmon harvest, and be compensated for their efforts. ADF&G and ONC will host preseason ASL training and train interested samplers in properly collecting samples.

Partnerships/Capacity Building: This project demonstrates capacity building and new leadership taken on by ONC, a tribal government organization. ADF&G and ONC have been partnering for over 20 years to conduct inseason harvest surveys, but it was not until 2018 that ONC became the principal investigator on this project. ONC has built the capacity to have the necessary equipment and staff to lead this project with support from ADF&G as the critical co-PI. ONC has increased capacity through developing professional staff to run the project, developing and educating local youth to move into leadership roles in fisheries management, and training local students with hands-on biological experience at the high school and university levels. ADF&G has the capacity and will continue to archive physical ASL data collected through this project and make the data publicly available via the Arctic Yukon Kuskokwim Database Management System.

In addition to the capacity that ONC has built, ONC and ADF&G collaborate with the KRITFC, Bering Sea Fishermen's Association (BSFA), and the Yukon Delta National Wildlife Refuge (YDNWR) to collect subsistence harvest data to produce inseason harvest estimates. In the 2021 season, ONC and KRITFC are expanding their collective capacity and leadership by having their biologists learn and utilize a new model with the program R, designed by a KRITFC contractor, to produce the inseason harvest estimates that were

previously produced by staff at YDNWR. These harvest estimate models directly contribute to inseason fisheries management and are critically important as credible, near real-time indexes of fish harvests. This demonstrates strong tribal leadership in fisheries management and encourages ongoing capacity building.

This project has been well received by local residents in the past and is viewed as an important project supporting management by providing fundamental insights into issues such as the achievement of subsistence needs and the timing of subsistence activities. ONC has long standing ties with fish camp families in conducting the inseason subsistence harvest surveys. The survey instrument utilized in this project ensures protection of privacy, dignity, and confidentiality by all respondents and will continue to do so in the future. This project values and acknowledges local contributions in which all results are conveyed back to participants of the project on a weekly basis. Furthermore, local participation in ASL sampling provides an opportunity for education and outreach on salmon biology and management issues. These interactions are two-way; project participants receive timely fishery updates from agency staff and agency staff receive weekly reports on fishing activities and perspectives on the social effects of management decisions.

Project Number:	22-351			
Title:	Kuskokwim Management Area Postseason Subsistence Salmon Harvest Survey			
Geographic Region:	Kuskokwim			
Data Types:	Harvest Monitoring			
Principal Investigator:	Chris McDevitt, Alaska Department of Fish and Game, Division of Subsistence			
Co-investigator:	David Koster, Alaska Department of Fish and Game, Division of Subsistence Danielle Lowrey, Orutsararmiut Native Council			
Project Cost:	2022: \$214,571	2023: \$214,656	2024: \$214,833	2025: \$214,951
Total Cost:	\$859,011			

Issue Addressed: We propose to continue operation of the Kuskokwim Management Area (KMA) Postseason Subsistence Salmon Harvest Survey. This proposal is in response to the priority information needs identified in the 2021 Fisheries Resource Monitoring Program (FRMP) request for proposals to obtain reliable quantitative estimates of subsistence salmon harvests in the Kuskokwim River drainage and Kuskokwim Bay tributaries. The proposed work would continue a 29-year dataset of subsistence salmon harvests in the Kuskokwim Area.

Objectives:

1. Administer harvest surveys to document the number of Chinook, chum, sockeye, coho, and pink salmon harvested for subsistence uses by residents of Bethel.
2. Administer harvest surveys to document the number of Chinook, chum, sockeye, coho, and pink salmon harvested for subsistence uses by residents of at least 27 remaining KMA communities.
3. Analyze harvest data to produce community estimates of salmon harvest by species.

Methods: Household harvest data will be collected using a survey instrument. The survey instrument is designed to elicit a variety of data from participating households. The primary goal of the instrument is to record subsistence salmon harvest data. In addition, the survey instrument also asks for basic household information, such as the total number of people living in the household. Moreover, the survey asks about gear types used; harvest locations; lost fish (due to spoilage or otherwise); fish shared, received, or both;

fish harvested for dogs; nonsalmon fish harvests; and whether or not a household was able to meet their subsistence salmon needs for the season.

The Division of Subsistence will utilize a consistent harvest estimation methodology for all communities except Bethel. The survey design in each community will be either census (100% survey) or stratified sampling design, depending on community size.

Subsistence harvest of Bethel residents will be estimated by employing a simple random sample harvest survey method. We will use the Bethel city planner’s office/fire department occupant dwellings map/list. Before the survey, surveyors will update the map/list by driving through the community to confirm or update its accuracy. Based on the updated map, 30–50% of occupant dwellings will be randomly selected for survey. Rigorous protocols will be implemented to ensure that selected households are contacted if possible. Surveyors will attempt visits to households a minimum of three different times on different dates and different times of day. Households that are not successfully contacted will be set aside and new households will be randomly selected to replace them.

Partnerships and Capacity Building: ADF&G and ONC will partner to complete the Bethel portion of the project. This relationship represents close collaboration as principal investigators and has been in place since 1999. This mutually productive partnership has created a level of dialogue, feedback, and synergy that benefits each organization and the public. Formal and informal discussions between project staff and associated communities have helped to create a level of public awareness about salmon management and subsistence harvests. The interaction has also built significantly on the level of trust between the public and ADF&G. Through operation of this project and sharing of the resulting information at management and research forums, ONC and the community of Bethel have gained a feeling of ownership and meaningful involvement in terms of their participation in management decision making processes as they relate to the subsistence salmon fishery. Continuation of this project will strengthen the capacity of the Orutsarmiut Native Council to carry out subsistence fisheries harvest assessment projects in the region. Subsistence fishing households throughout the Kuskokwim River drainage will have an opportunity to talk to staff that come to their house and share personal observations about the subsistence salmon fishery. Households will have an opportunity to identify qualitative aspects the subsistence salmon fishing season such as if a household was able to meet their harvest goals for the season.

Project Number:	22-352			
Title:	Local and Traditional Knowledge of Subsistence Salmon Harvest and Use in the Lower Kuskokwim River			
Geographic Region:	Kuskokwim			
Data Types:	Traditional Ecological Knowledge			
Principal Investigator:	David Runfola, Alaska Department of Fish and Game, Division of Subsistence			
Co-investigator:	Gayle Neufeld, Alaska Department of Fish and Game, Division of Subsistence			
Project Cost:	2022: \$132,792	2023: \$107,114	2024: \$126,535	2025: \$0
Total Cost:	\$366,440			

Issue: The Alaska Department of Fish and Game (ADF&G) Division of Subsistence is proposing to conduct key respondent interviews and participant observations that explore subsistence fishers' traditional ecological knowledge of Pacific salmon *Oncorhynchus spp.* (hereinafter salmon) in the lower Kuskokwim River communities of Napakiak, Nunapitchuk, Kasigluk, Tuntutuliak, and Eek. The study will focus on fisher knowledge of salmon patterns of movement through customary and traditional fishing areas and the ways in which fishers use this knowledge to effectively harvest salmon in a section of the lower Kuskokwim River within the Yukon Delta National Wildlife Refuge. Each region of the Kuskokwim River area can be characterized by locally specific fishing patterns, environmental conditions, challenges, and adaptations. This project is designed to investigate lower river patterns, especially as they relate to management and regulatory issues. This study has the goal of collaborating with key respondents in communities of the lower Kuskokwim River to document information regarding their historical and contemporary salmon fishing and processing methods, and how fishers have adapted those methods to changes occurring within the fishery.

A severe decline of Chinook salmon *O. tshawytscha* abundance in the Kuskokwim River has resulted in unprecedented fishing restrictions. These have had profound effects on subsistence salmon fishing communities in the Kuskokwim Area. Many fishers have described in public meetings, that their households have faced challenges in effectively harvesting and processing enough salmon for use throughout the year. The proposed study has several applications. First, documenting fishers' experiences of these changes and the effects on their households' ability to obtain the salmon they need each year will broaden managers' understanding of the lower Kuskokwim River salmon fishery. The study will provide fishers with the opportunity to systematically describe their novel experiences under an extremely conservative management regime and document how they have adapted fishing and processing techniques. The ethnographic methods of this study will allow subsistence salmon fishing households to share this TEK with management agencies in a way that informs or directs management decisions that better accommodate fishers' needs and experiences. The final reporting for this project will include a summary of recommendations to OSM and USFWS and ADF&G fisheries management staff regarding the continued monitoring of issues and community concerns related to the lower Kuskokwim River subsistence salmon fishery. Finally, a textured description of specific fishing patterns in the lower Kuskokwim River region along with a detailed accounting of local concerns and adaptations will strengthen the communities' engaged participation in research and management processes.

Objectives:

1. Document historical and contemporary salmon fishing methods practiced by subsistence fishers, including how fishers apply their knowledge of fish movements and river morphology to effectively harvest salmon.
2. Document fishers' adaptations to increased restrictions to the subsistence salmon fishing schedule during times of Chinook salmon conservation.
3. Document socioeconomic and cultural impacts to study communities because of restricted subsistence fishing during times of Chinook salmon conservation.

Methods: Researchers will consult with communities prior to and during all phases of the project. Research staff will request guidance from community tribal councils on development of ethnographic

data collection methods and selection of knowledgeable key respondents. Community consultations will also include coordinating with tribal councils and other community members to inform them of study progress and results, and to facilitate communication between communities and fishery management agency staff.

During project fieldwork, key respondent interviews and participant observations will document local and traditional knowledge related to the customary and traditional harvests and uses by residents of the five study communities. Research staff will record interviews digitally, document participant observation activities in detailed written notes, and document geographic locations of salmon harvest areas and other places of significance to salmon fishers and their households. Ethnographic interviews will be analyzed using qualitative data analysis software. Ethnographic fieldwork will produce detailed maps in digital and paper formats. Data from maps produced in the field will be analyzed using ArcGIS software.

The Principal Investigators will write a final technical report of two years of ethnographic data collection and analysis that will be published in the ADF&G Division of Subsistence technical paper series, submitted to OSM on or before June 30, 2024. Copies will be sent to the tribal governments and key respondents. Technical report authors will also write a summary report pamphlet and mail a copy to all post office boxholders in each study community in June 2024.

Partnerships/Capacity Building: Following recommendations of tribal councils, project staff will identify a corps of key respondents in each community. Key respondents will aid in the development of participant-observation objectives. Participant-observation field operations can only be planned and executed with significant guidance from participating key respondents. As such, these key respondents will be active contributors to achievement of study objectives. The purpose of such partnerships will be to engage community members in development of research that is relevant to fishers and their communities. Ethnographic interview and participant-observation key respondents will be compensated for their expertise and contribution to the study.

Project Number:	22-353			
Title:	Natural Indicators of Salmon in the Upper Kuskokwim River			
Geographic Region:	Kuskokwim			
Data Types:	Traditional Ecological Knowledge			
Principal Investigator:	Chris McDevitt, Alaska Department of Fish and Game, Division of Subsistence			
Co-investigator:	Ann Fienup-Riordan, Independent Contractor			
Project Cost:	2022: \$71,190	2023: \$55,126	2024: \$53,739	2025: \$0
Total Cost:	\$180,055			

Issue Addressed: This project seeks to understand the historical abundance, distribution, and health of salmon populations in subsistence fishing communities in the upper Kuskokwim River drainage through the documentation and incorporation of local and traditional ecological knowledge (TEK). Principal Investigators will focus ethnographic research on documenting the use of natural indicators of salmon run characteristics to explore patterns in Chinook, chum, sockeye, and coho salmon runs. For the purposes of this project, natural indicators are defined as empirical observations that correlate with specific ecological phenomena. As such, this proposal addresses one of the research needs described in the Priority Information Needs document for the Kuskokwim River region of the Federal Subsistence Fisheries 2022 Fisheries

Resource Monitoring Program: Traditional Ecological Knowledge of Fishes. Although the upper portion of the Kuskokwim River drainage is situated upriver and outside of the Yukon Delta National Wildlife Refuge (YDNWR) boundary, the salmon harvested for subsistence by upper river communities pass through waters within or adjacent to federal public lands in the lower and middle river. Management decisions made in the lower and middle sections of the river necessarily affect what happens in the upper river; as a result, appropriate and sustainable management by federal and state agencies must attend to the knowledge and experiences of all subsistence fishers.

Objectives:

1. Document local and traditional ecological knowledge of Chinook, chum, sockeye, and coho natural indicators in three upper Kuskokwim River communities: McGrath, Takona, and Nikolai.
2. Map locally significant salmon habitats (migratory routes, spawning, juvenile rearing, etc.), fishing locations, historical and contemporary fish camps, and other areas of ecological importance used in observing the landscape for natural indicators.
3. Promote capacity building among local communities, management agencies, tribal organizations, and nonprofit governmental organizations.

Methods: For each community, researchers will attempt to conduct three to five group gathering discussions over the course of four to six days. Each gathering will include at least four to six respondents who represent a cross-section of the community, including age, gender, and experiential differences. The group gathering protocol will be designed to elucidate natural indicators and other techniques utilized in locally assessing the run itself as well as harvesting or processing salmon during the run. Based on previous participant observation and TEK-based research, these natural indicators may include such variables as the seasonal prevalence of nonsalmon fish species, the timing of waterfowl migration, the emergence of specific species of plants and insects, and the date of river freeze-up in the fall or break-up in the spring.

Researchers will also use visual aids such as maps and pictures of fish species and historical photographs to enhance discussion (e.g., Brown et al. 2005). Researchers will make audio recordings of group gatherings and interviews and take photographs when appropriate and if consent is received from respondents. We will also ask respondents to mark fishing areas or other observations regarding salmon natural indicators on USGS 1:250,000 maps. These maps are critical visual representations of local knowledge possessed within a community or across a region; more than simply mapped representations of utilized areas or significant habitats, these maps represent the on-the-ground connections between individuals and the land that characterize subsistence economies.

Partnerships & Capacity Building: Researchers will work closely with local communities throughout the development, data collection, and analysis stages of this study. Community representatives will be directly involved with the development of an interview guide which will be used to facilitate group gathering discussions. Community representatives will also help determine the specific topics of discussion for group gatherings and will take lead responsibilities in identifying potential key respondents who could participate in the research. In addition, community representatives will help identify local community members who would act as local research assistants (LRAs) alongside Division researchers for the purpose of aiding with the research. Upon completion of data analysis and preliminary report writing, Division research staff will return to each participating upper Kuskokwim River community to present preliminary findings and allow for community comments before submission of the final report. At that time, we will also present the Tribal

Council and key respondents with the GIS-based maps we have generated and describe the results of our research.

Division researchers’ direct collaboration with community representatives and local residents will help to establish and/or build upon effective working relationships that are based on trust and mutual understanding. Invaluable information regarding TEK associated with salmon natural indicators will be documented, and this information will be made available to study communities and managers. Documentation of this information will further help to inform management decisions so that management actions reflect and accommodate the realities of salmon fishing in this unique and largely understudied portion of the Kuskokwim River drainage.

Project Number:	22-354			
Title:	Community-Based Harvest Monitoring Network for Kuskokwim River Chinook Salmon			
Geographic Region:	Kuskokwim			
Data Types:	Harvest Monitoring			
Principal Investigator:	Kevin Whitworth, Kuskokwim River Inter-Tribal Fish Commission			
Co-investigator:	Dr. Joseph Spaeder, Kuskokwim River Inter-Tribal Fish Commission LaMont Albertson, Kuskokwim River Inter-Tribal Fish Commission Dr. William Bechtol, Bechtol Research Spencer Rearden, U.S. Fish and Wildlife Service Aaron Moses, U.S. Fish and Wildlife Service			
Project Cost:	2022: \$61,965	2023: \$63,094	2024: \$64,263	2025: \$65,473
Total Cost:	\$254,795			

Issue: The subsistence Chinook salmon fishery in the Kuskokwim River drainage is the largest in Alaska, historically producing over 50% of Alaska’s annual Chinook salmon subsistence harvests. Historically, approximately 90% or more of all Chinook salmon subsistence harvests from the Kuskokwim River drainage occurred within waters of the Yukon Delta National Wildlife Refuge. Communities in the watershed have a very high long-term traditional subsistence dependence on Chinook salmon. Prior to the prolonged Chinook decline beginning the early 2000’s, communities in the Kuskokwim River drainage had an average annual subsistence harvest of 88,500 Chinook salmon for the period 1990-2009. In response to this severe and prolonged decline of Chinook salmon, *a primary subsistence species*, the Federal Subsistence Management Program has limited subsistence harvests for Chinook salmon over the past seven years to Federally qualified users under the provisions of the Alaska National Interest Lands Conservation Act (ANILCA) Section 804. Due to the poor run in 2020, it is anticipated that the fishery will again be restricted to Federally qualified users in 2021 and be placed under the management authority of the Federal designated inseason manager.

Subsistence harvest assessments have historically been based on postseason household surveys, with no availability of reliable inseason harvests prior to 2016. Robust harvest estimates for each opening is critically important given the severe lack of high quality inseason data on run abundance and run timing to guide decision-making by federal managers. Through the delivery of near real-time harvest data from lower river subsistence communities, this project addresses a critical information need and directly

supports federal management of Chinook salmon subsistence fisheries in federal waters of the Kuskokwim River by providing catch and effort data necessary for inseason estimation of subsistence harvests.

In his project addresses the following priority information needs for the Kuskokwim region as identified by the Yukon-Kuskokwim Delta Regional Advisory Council and the Western Interior Regional Advisory Council:

- *Reliable quantitative and/or qualitative estimates of salmon run size, escapement, and harvest in the Kuskokwim River drainage including Kuskokwim Bay tributaries.*
- *New methods for conducting inseason salmon run assessments in the Kuskokwim River drainage, for example community-based harvest monitoring, sonar, and village test fisheries.*
- *Information sharing between stakeholders and agencies concerning salmon conservation in the Kuskokwim river drainage, for example outreach to villages using the media and other methods.*

Additional support for the need for this project is specified in the letter of support, dated March 10, 2021, from the designated Federal inseason manager, YDNWR Refuge Manager, Boyd Blihovde.

Objectives: The overall project goals are to: (1) continue to develop and implement a framework for a community-based harvest monitoring network to inform inseason management with data on abundances, and species compositions and ratios in subsistence harvests; (2) collect age, sex, and length (ASL) data from Chinook salmon harvested in the lower portion of the Kuskokwim River; and (3) contribute to capacity building and data transparency into the future (Figure 4). It is intended that the monitoring network protocols developed over the past four years be continued and refined as needed to continue project success. Project objectives are to:

1. Identify participant villages willing to support community-based monitors in interview sampling.
2. Train village monitors to respectfully conduct harvest interviews.
3. Collect subsistence harvest data from subsistence fishing opportunities during early June to the end of the lower river Chinook salmon run in July, including catch by species and fishing effort.
4. Electronically transfer data within 12 hours of the end of a fishing opportunity for compilation to inform managers regarding run strength and composition.
5. Collect biological data (ASL) from Chinook salmon harvested in subsistence fisheries.
6. Through community monitors, relay information on subsistence fishing opportunities to local community members, and relay local concerns to inseason managers
7. Work with other agency and NGO staff to compile, review, and report on inseason and post-season harvest summaries as collected from this and related projects including aerial surveys.

Methods: This project follows a pilot study in 2017–2020 during which the methods, data collection, and capacity building components were fully implemented and field tested. We propose to hire seven

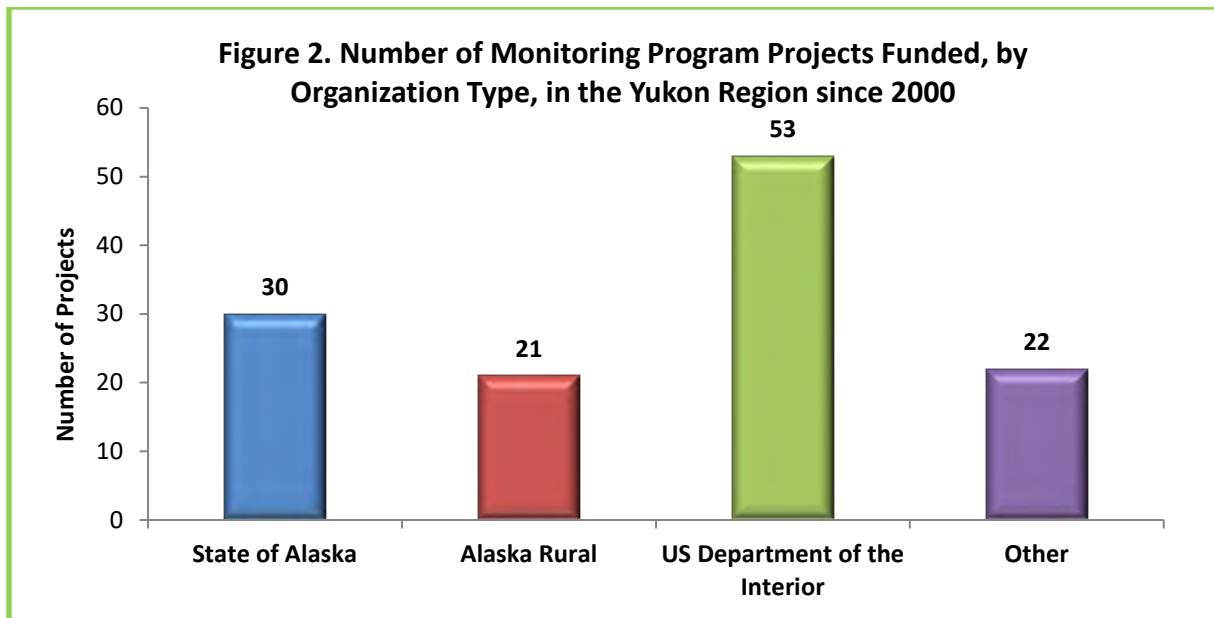
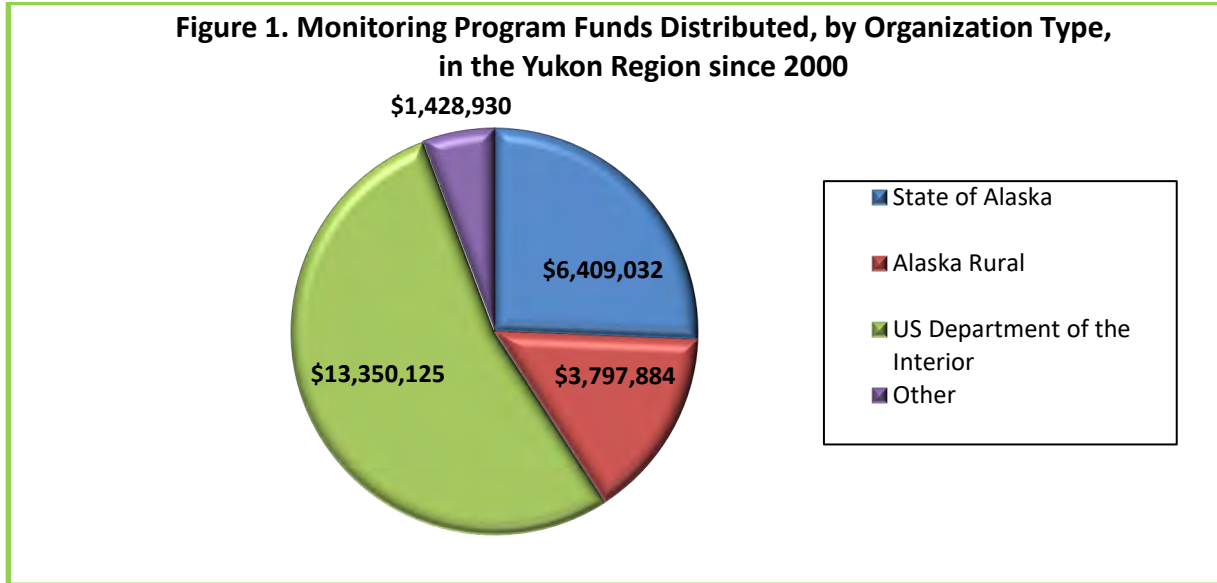
harvest monitors from 4 lower river communities where we have been implementing the project since 2017: Akiak, Kwethluk, Akiachak, Napaskiak, and Tuntutuliak.

The core data collection involves opportunistic interviews conducted by community monitors of subsistence harvesters after returning from fishing. Interviews are confidential in adherence to the Principles for Conducting Research in the Arctic and follow a set of standardized survey questions with answers recorded on waterproof paper. Interview data include aspects such as: date and time trip started and ended, general fishing area, gear used, time with net in the water, catch by species, and comments for managers. Data are uploaded via smart phone app to a data coordinator for quality control before being transferred to a USFWS biometrician who compares interview data, along with data from ONC interviewers in the Bethel area, to aerial survey observations of fishing nets in order to appropriately expand interview catch and effort. Interviewers will also opportunistically sample Chinook salmon for age, sex, and length (ASL) data.

Partnerships/Capacity Building: This project is strongly linked to rural villages on the Kuskokwim River. During its initial pilot project phase over the past four years, this project has made significant direct contributions to capacity building through hiring, training, and mentoring of young village residents working in fisheries monitoring. Through this project, we will build on these early contributions in a number of ways. Prior to the Chinook salmon return, local residents will be hired as community-based monitors to conduct harvest interviews and collect biological data. After individual monitors are identified, hiring protocols are implemented and monitors brought to Bethel for training involving USFWS, ADF&G, KRITFC, BSFA, and ONC. This includes training and practice with the survey instrument, data transfer by cell phone app, and collection and transfer of ASL data. Monitors will be guided in how to serve as information conduits to relay information on upcoming subsistence opportunities, and to relay concerns of village members to managers. Through this process, we aim to inspire and help equip these young people to further explore careers in fisheries research and monitoring.

FISHERIES RESOURCE MONITORING PROGRAM YUKON REGION OVERVIEW

Since the inception of the Monitoring Program in 2000, a total of 126 projects have been undertaken in the Yukon Region costing \$25 million (**Figure 1**). Of these, the State of Alaska received funds to conduct 30 projects, Alaska rural organizations conducted 21 projects, the Department of the Interior conducted 53 projects, and other organizations conducted 22 projects (**Figure 2**). See **Appendix 1** for more information on Yukon Region projects completed since 2000.



PRIORITY INFORMATION NEEDS

The 2022 Notice of Funding Opportunity for the Yukon Region identified the following 13 priority information needs:

- Impacts of climate change in continued harvest and use of fish; and impacts of climate change on fish, for example, impacts to fish migration, spawning, and life cycle.
- Effects of environmental stressors, such as heat stress, on salmon mortality during adult upriver migration and/or pre-spawn mortality within spawning tributaries.
- Effects of Ichthyophonus infection on Chinook Salmon mortality and spawning success.
- Knowledge of population, reproduction, and health of spawning habitat for Bering Cisco and Humpback Whitefish.
- Reliable estimates of Chinook, Summer Chum, Fall Chum, and Coho Salmon escapements and/or harvests, particularly sub-stocks in District 5 that are large contributors to the total run, for example in the Chandalar and Sheenjek Rivers.
- Distribution, abundance, condition, and survival of juvenile and out-migrating salmon in the Yukon River drainage.
- Estimates of “quality of escapement” measures for Chinook Salmon, for example, potential egg deposition, age, sex, and size composition of spawners, percentage of females, percentage of jacks, and spawning habitat utilization, with an emphasis on Canadian-origin stocks.
- Reliable in-season estimates of salmon harvests in the lower, middle, and upper Yukon River subsistence fisheries.
- Reliable estimates of age-sex-length and genetic composition of salmon harvested in the subsistence fishery, with emphasis on Chinook and Fall Chum Salmon.
- In-season estimates of genetic stock composition of Chinook, Summer Chum, and Fall Chum Salmon runs and harvests.
- Reliable methods of forecasting Chinook, Summer Chum, Fall Chum, and Coho Salmon run abundance.
- Assessment of incidental mortality with gillnets, dip nets, and seines, with particular consideration for delayed mortality from entanglement from drop-outs and live release of Chinook Salmon (for example, loss of Chinook Salmon from 6-inch mesh nets during Chum Salmon fisheries and the live release of Chinook Salmon from dip nets and seines).
- Traditional ecological knowledge of fishes.

AVAILABLE FUNDS

Federal Subsistence Board guidelines direct initial distribution of funds among regions. Regional budget guidelines provide an initial target for planning. For 2022, the U.S. Department of the Interior and U.S. Department of Agriculture, through the U.S. Fish and Wildlife Service and the U.S. Forest Service, will provide an anticipated \$2.25 million in funding statewide for new projects.

ROLE OF THE TECHNICAL REVIEW COMMITTEE

The mission of the Monitoring Program is to identify and provide information needed to sustain subsistence fisheries on Federal public lands for rural Alaskans through a multidisciplinary and collaborative program. It is the responsibility of the Technical Review Committee to develop the strongest possible Monitoring Plan for each region and across the entire state.

For the 2022 Monitoring Program, seven proposals were submitted for the Yukon Region. The Technical Review Committee evaluated and scored each proposal on Strategic Priority, Technical and Scientific Merit, Investigator Ability and Resources, Partnership and Capacity Building, and Cost/Benefit (**Table 1**). These scores remain confidential. An executive summary for each proposal submitted to the 2022 Monitoring Program for the Yukon Region is in **Appendix 2**.

Table 1. Projects submitted for the Yukon Region, 2022 Monitoring Program, including total funds requested and average annual funding requests.

Project Number	Title	Total Project Request	Average Annual Request
22-201	East Fork Andreafsky River Weir Chinook and Summer Chum Salmon Abundance and Run Timing Assessment	\$701,347	\$175,336
22-202	Gisasa River Weir Chinook and Summer Chum Salmon Abundance and Run Timing Assessment	\$342,652	\$171,826
22-203	Outmigrating Chinook Salmon and Prey Species Assessment in the Lower Yukon River	\$304,642	\$152,321
22-204	Western Alaska Coho Salmon Genetic Baseline Development	\$116,782	\$58,491
22-251	Presence and Use of Salmon in the Pastolik and Pastoliak Rivers	\$204,603	\$102,301
22-252	Humpback Whitefish and other Nonsalmon Fishes Traditional Ecological Knowledge and Biological Sampling in the Upper Koyukuk Region	\$231,952	\$115,976
22-253	Yukon River Nonsalmon Subsistence Survey	\$219,342	\$54,835
Total		\$2,121,320	\$796,986

TECHNICAL REVIEW COMMITTEE JUSTIFICATION FOR PROPOSAL SCORES

Project Number: 22-201

Project Title: East Fork Andreafsky River Weir Chinook and Summer Chum Salmon Abundance and Run Timing

Technical Review Committee Justification: The investigation plan outlines the continuation of a successfully implemented project that uses weir and video technology to collect fish passage counts and estimate annual escapement for Chinook and summer Chum salmon in the East Fork Andreafsky River. The Federal nexus is clear and this project addresses a 2022 Priority Information Need for the Yukon Region. Escapement estimates from this project are used in run reconstructions and forecasts, and to inform in-season management decisions and post-season evaluations. While this project provides important data and is technically sound, the investigation plan did not outline any meaningful consultations with local communities or provide examples of long-term capacity building. However, a letter of support was received from St. Mary's Native Corporation. Letters of support were also received from the Alaska Department of Fish and Game (Division of Commercial Fisheries), University of Alaska Fairbanks (Institute of Arctic Biology), and Yukon Delta National Wildlife Refuge. Four years of funding are requested to complete the proposed work and matching funds will be provided to offset project costs. Project costs are comparable to other weirs in the region and are reasonable for the proposed work.

Project Number: 22-202

Project Title: Gisasa River Weir Chinook and Summer Chum Salmon Abundance and Run Timing Assessment

Technical Review Committee Justification: The Gisasa River weir is an established monitoring project that has operated since 1994 and has been funded by the Monitoring Program since 2003. The Federal nexus is clear and this project addresses multiple 2022 Priority Information Needs for the Yukon Region. The methods used in this project have consistently achieved results and the investigators have the experience needed to conduct this research. Data collected by this project are used to inform in-season management decisions and produce annual escapement estimates, assess in-season management actions, and develop run reconstructions for the Yukon River basin. The previous relationship between the Fairbanks Fish and Wildlife Conservation Office and the Tanana Chiefs Conference will be expanded in order for the Tanana Chiefs Conference to build the capacity needed to serve as the principal investigator after the 2023 season. Matching funds will be provided to offset project costs and the funds requested to complete this project are comparable to other weirs in the region and are reasonable for the proposed work. This project received letters of support from the Koyukuk/Nowitna/Innoko National Wildlife Refuges, Tanana Chiefs Conference, and University of Alaska Fairbanks.

Project Number: 22-203

Project Title: Outmigrating Chinook Salmon and Prey Species Assessment in the Lower Yukon River

Technical Review Committee Justification: The investigation plan requests two years of funding to evaluate the composition, spatial variation, and temporal variation in fish and invertebrate prey for juvenile Chinook Salmon, and assess the quality of prey resources in relation to juvenile Chinook Salmon condition in the Yukon Delta. The investigation plan does not clearly articulate its relevance to Federal subsistence management but this project does address a 2022 Priority Information Need for the Yukon

Region. This study may shed light on juvenile Chinook Salmon survival by identifying factors contributing to variation in individual size and energetic status just prior to transitioning to the marine phase of their life history. Study objectives are clear and measurable but it is difficult to determine if they are achievable due to methods and procedures that are not described in sufficient detail. This project would continue a multi-year history of research and engagement with the residents of the lower Yukon River. Local capacity will be built by presenting information about juvenile fish to science classes in Emmonak and Alakanuk. The investigation plan mentions that the Yukon Delta Fisheries Development Association intends on hosting an Alaska Native Science and Engineering Program intern. However, a letter of recommendation was not received from the Alaska Native Science and Engineering Program and salary/scholarship information was not included in the Budget Table. While this project leverages substantial contributions from the Yukon Delta Fisheries Development Association for field sample collections, more detail is needed for DNA analyses that make up a large proportion of the requested funds. No letters of support were received for this project.

Project Number: 22-204

Project Title: Western Alaska Coho Salmon Genetic Baseline Development

Technical Review Committee Justification: The primary goal of this proposal is to develop a high-resolution genetic baseline for Yukon River and Coastal Western Alaska Coho Salmon populations. Currently, during years where Chinook and Chum salmon abundance are low, subsistence harvests are beginning to increase on other species such as Coho Salmon. This proposed work is timely to help inform in-season managers to give them an additional information to assess forecasted run strength. This proposed work, would provide the needed genetic baseline to someday begin the development of a juvenile-based run assessment to forecast adult returns of Coho Salmon in the Yukon River. Alaska Department of Fish and Game have already collected the necessary tissue samples needed across 18 Federal public lands and waters, which includes 43 spawning sites. Once completed, this newly developed genetic baseline will enhance mixed-stock assessments across Western Alaska for various fisheries stakeholders.

Project Number: 22-251

Project Title: Presence and Use of Salmon in the Pastolik and Pastoliak Rivers

Technical Review Committee Justification: Investigators responded to two Priority Information Needs identified in the 2022 Notice of Funding Opportunity. The project is within the Yukon Delta National Wildlife Refuge. The Federal nexus is clear. Objectives are clearly stated and the investigation plan is well-written. Investigators appear qualified to do the work, and the budget is reasonable for the work being proposed. Results from this research will contribute to two long-term data sets. Investigators say they will work with three local Tribal governments in Kotlik through a cooperative agreement to provide logistical help; however, funding was not provided in the budget for these tasks. Local hires to assist with field work are planned. Four letters supporting this project were provided.

Project Number: 22-252

Project Title: Humpback Whitefish and Other Nonsalmon Fishes Traditional Ecological Knowledge and Biological Sampling in the Upper Koyukuk Region

Technical Review Committee Justification: Investigators responded to three Priority Information Needs identified in the 2022 Notice of Funding Opportunity and in other ways make a good case for the need for this research. The project area is most closely associated with the Kanuti National Wildlife Refuge. The Federal nexus is clear. Investigators intend a strong partnership with Tanana Chiefs Conference. The investigation plan is well-written including extensive background information and inventory of previous research conducted on this topic in this area. Investigators describe a well thought out, collaborative and interdisciplinary study plan. Two letters of support were provided.

Project Number: 22-253

Project Title: Yukon River Nonsalmon Fish Harvest Survey

Technical Review Committee Justification: This project is attempting to address two priority information needs identified in the 2022 Notice of Funding Opportunity. Research funded by the Monitoring Program to identify information needed for whitefish includes collection of high-quality annual harvest estimates as well as traditional ecology knowledge. In contrast, the focus of this project is harvest monitoring, which is not an identified priority information need in either document. Project objectives and plans to achieve those objectives need more work. Study communities have not been chosen. Some budgeted costs appear to duplicate those in another Monitoring Program project implemented by this organization. Five letters of support were provided.

**APPENDIX 1
PROJECTS FUNDED IN THE YUKON REGION SINCE 2000**

Project Number	Project Title	Investigators
Salmon Projects		
00-003	Effects of <i>Ichthyophonus</i> on Chinook Salmon	UW
00-005	Tanana Upper Kantishna River Fish Wheel	NPS
00-018	Pilot Station Sonar Upgrade	ADF&G
00-022	Hooper Bay Test Fishing	ADF&G, NVHB
00-024	Pilot Station Sonar Technician Support	AVCP
00-025	Henshaw Creek Salmon Weir	USFWS
00-026	Circle and Eagle Salmon and Other Fish TEK	NVE
01-014	Yukon River Salmon Management Teleconferences	YRDFA
01-015	Yukon River Salmon TEK	YRDFA
01-018	Pilot Station Sonar Technician Support	AVCP
01-026	East Fork Andreafski River Salmon Weir	BSFA
01-029	Nulato River Salmon Weir	BSFA
01-032	Rampart Rapids Tagging Study	USFWS
01-038	Kateel River Salmon Weir	USFWS
01-048	Innoko River Drainage Weir Survey	USFWS
01-050	Kaltag Chinook Salmon Age-Sex-Length Sampling	COK

Project Number	Project Title	Investigators
01-058	East Fork Andreafsky Weir Panel Replacement	USFWS
01-122	Lower Yukon River Salmon Drift Test Fishing	ADF&G, EMV
01-141	Holitna River Chinook, Chum and Coho Telemetry	ADF&G
01-177	Rampart Rapids Extension	USFWS
01-197	Rampart Rapids Summer CPUE Video	SZ
01-199	Tanana Fisheries Conservation Outreach	TTC
01-200	Effects of Ichthyophonous on Chinook Salmon	USGS
01-211	Upper Yukon, Porcupine, & Black River Salmon TEK	CATG
02-009	Pilot Station Sonar Technician Support	AVCP
02-011	Rampart Rapids Fall Chum Handling/mortality	USFWS
02-097	Kuskokwim & Yukon Rivers Sex-ratios of Juvenile & Adult Chinook	USFWS
02-121	Yukon River Chinook Salmon Genetics	USFWS, ADF&G, DFO
02-122	Yukon River Chinook & Chum Salmon In-season Subsistence	USFWS
03-009	Tozitna River Salmon Weir	BLM
03-013	Gisasa River Salmon Weir	USFWS
03-015	Phenotypic Characterization of Chinook Salmon Subsistence Harvests	YRDFA, USFWS
03-034	East Fork Andreafsky River Salmon Weir	USFWS
03-038	Yukon River Sub-district 5-A Test Fishwheel	BF
04-206	Tozitna River Salmon Weir	BLM
04-208	East Fork Andreafsky River Salmon Weir	USFWS
04-209	Gisasa River Salmon Weir	USFWS
04-211	Henshaw Creek Salmon Weir	USFWS
04-217	Rampart Rapids Fall Chum Salmon Abundance	USFWS
04-228	Yukon River Chum Salmon Genetic Stock Identification	USFWS
04-229	Lower Yukon River Salmon Drift Test Fishing	ADF&G
04-231	Yukon River Chinook Salmon Telemetry	ADF&G
04-234	Kaltag Chinook Salmon Age-Sex-Length Sampling	COK
04-251	Fort Yukon Traditional Ecological Knowledge Camp	TCC,CATG, ADF&G
04-255	Yukon River Salmon Fishery Traditional Ecological Knowledge	NPS
04-256	Tanana Conservation Outreach	TTC, USFWS
04-263	Yukon River Salmon Management Teleconferences	YRDFA
04-265	Yukon River TEK of Customary Trade of Subsistence Fish	YRDFA
04-268	Hooper Bay Subsistence Monitoring	ADF&G, HBTC
05-203	Yukon River Coho Salmon Genetics	USFWS
05-208	Anvik River Salmon Sonar Enumeration	ADF&G
05-210	Tanana River Fall Chum Salmon Abundance	ADF&G
05-211	Henshaw Creek Salmon Weir	TCC, USFWS
05-254	Yukon River Salmon Inseason Subsistence Harvest Monitoring	USFWS
06-205	Yukon River Chum Salmon Mixed Stock Analysis	USFWS
07-202	East Fork Andreafsky River Salmon Weir	USFWS

Project Number	Project Title	Investigators
07-204	Lower Yukon River Salmon Drift Test Fishing	ADF&G
07-207	Gisasa River Salmon Weir	USFWS
07-208	Tozitna River Salmon Weir	BLM
07-209	Yukon River Salmon Management Teleconferences	YRDFA
07-210	Validation of DNA Gender Test Chinook Salmon	USFWS
07-211	Kaltag Chinook Salmon Age-Sex-Length Sampling	COK
07-253	Yukon River Salmon Harvest Patterns	RWA, AC
08-200	Kaltag Chinook Salmon Age-Sex-Length Sampling	COK
08-201	Henshaw Creek Salmon Weir	TCC
08-202	Anvik River Chum Salmon Sonar Enumeration	ADF&G
08-253	Yukon River Teleconferences and Inseason Management	YRDFA
10-200	Yukon River Chinook Salmon Run Reconstruction	BUE
10-205	Yukon River Chum Salmon Mixed-stock Analysis	USFWS
10-206	Nulato River Salmon Assessment	TCC
10-207	Gisasa River Chinook and Summer Chum Salmon Assessment	USFWS
12-202	Henshaw Creek Abundance and run timing of adult salmon	TCC
12-204	Anvik River Sonar Project	ADF&G
12-205	Kaltag Chinook Salmon Sampling Project	KAL
12-251	In-season Salmon Teleconferences and Interviews	YRDFA
14-201	Gisasa R Salmon Video	USFWS
14-202	E Fork Andreafsky Salmon	USFWS
14-203	Gisasa R Salmon	USFWS
14-206	Yukon R Coho Salmon	USFWS
14-207	Yukon R Chum Salmon	USFWS
14-208	Koyukuk R Chum Salmon	USFWS
14-209	Henshaw Crk Salmon	TCC
16-204	Henshaw Creek Abundance and run timing of adult salmon.	TCC
16-251	Seasonal habitats, migratory timing and spawning populations of mainstem Yukon River Burbot	ADF&G
16-255	Yukon River In-Season Community Surveyor Program	YRDFA, USFWS
16-256	In Season Salmon Management Teleconferences	YRDFA
18-201	East Fork Andreafsky River Chinook and summer Chum Salmon abundance and run timing, Yukon Deltan National Wildlife Refuge	USFWS
18-202	Gisasa River Chinook and summer Chum Salmon abundance and run timing assessment, Koyukuk National Wildlife Refuge, Alaska	USFWS
18-250	Documentation of salmon spawning and rearing in the Upper Tanana River Drainage	ADF&G
18-251	Traditional knowledge of anadromous fish in the Yukon Flats with a focus on the Draanjik Basin	TCC
18-252	Subsistence salmon networks in Yukon River communities	ADF&G
20-200	Yukon River Coho Salmon Radio Telemetry	ADF&G, USFWS
20-201	Application of mixed-stock analysis for Yukon River chum salmon	USFWS

Project Number	Project Title	Investigators
20-204	Abundance and Run Timing of Adult Salmon in Henshaw Creek, Kanuti National Wildlife Refuge, Alaska	TCC
20-251	In-season Yukon River Subsistence Salmon Survey Program	YRDFA, USFWS
20-252	Customary Trade in the Lower and Middle Yukon River	ADF&G
20-256	Yukon River In-Season Salmon Management Teleconferences	YRDFA
Nonsalmon Fish Projects		
00-004	Humpback Whitefish/Beaver Interactions	USFWS, CATG
00-006	Traditional Ecological Knowledge Beaver/Whitefish Interactions	ADF&G, CATG
00-021	Dall River Northern Pike	ADF&G, SV
00-023	Upper Tanana River Humpback Whitefish	USFWS
01-003	Old John Lake TEK of Subsistence Harvests and Fish	ADF&G, AV, USFWS
01-011	Arctic Village Freshwater Fish Subsistence Survey	ADF&G, AV, USFWS
01-100	Koyukuk Non-salmon Fish TEK and Subsistence Uses	ADF&G, TCC
01-140	Yukon Flats Northern Pike	ADF&G, SV
01-238	GASH Working Group	USFWS
02-006	Arctic Village Freshwater Fish Subsistence	ADF&G, NVV
02-037	Lower Yukon River Non-salmon Harvest Monitoring	ADF&G, TCC
02-084	Old John Lake Oral History and TEK of Subsistence	USFWS, AV, ADF&G
04-253	Upper Tanana Subsistence Fisheries Traditional Ecological Knowledge	USFWS,UAF, ADF&G
04-269	Kanuti NWR Whitefish TEK and Radio Telemetry	USFWS, RN
06-252	Yukon Flats Non-salmon Traditional Ecological Knowledge	ADF&G, BLM, USFWS, CATG
06-253	Middle Yukon River Non-salmon TEK and Harvest	ADF&G, LTC
07-206	Innoko River Inconnu Radio Telemetry	USFWS, ADF&G
08-206	Yukon and Kuskokwim Coregonid Strategic Plan	USFWS, ADF&G
08-250	Use of Subsistence Fish to Feed Sled Dogs	RN, AC
10-209	Yukon Delta Bering Cisco Mixed-stock Analysis	USFWS
10-250	Yukon Climate Change Impacts on Subsistence Fisheries	RN
12-200	Alatna River Inconnu Population Structure	USFWS
12-207	Yukon Bering Cisco Spawning Origins Telemetry	USFWS
14-252	Lower Yukon Whitefish	ADF&G
14-253	Upper Yukon Customary Trade	YRDFA
16-203	Bering Cisco Spawning Abundance in the Upper Yukon Flats, 2016-2017	ADF&G, USFWS
16-205	Burbot Population Assessments in lakes of the Upper Tanana and Upper Yukon River Drainages	NPS
20-202	Evaluating dart and telemetry tags in an effort to track run timing and migration patterns of Yukon River Arctic lamprey	USFWS, UAF, ADF&G

Abbreviations: AC = Alaskan Connections, ADF&G = Alaska Department of Fish and Game, AVCP = Association of Village Council Presidents, AV = Arctic Village, BF = Bill Fliris, BUE = Bue Consulting, BLM = Bureau of Land Management, BSFA = Bering Sea Fisherman's Association, CATG = Council of Athabascan Tribal Governments, COK = City of Kaltag, DFO = Department of Fisheries and Oceans, EMV = Emmonak Village Council, KAL = City of Kaltag, NPS = National Park Service, LTC = Louden Tribal Council, NVE = Native Village of Eagle, NVHB = Native Village of Hooper Bay, NVV = Native Village of Venetie, RN = Research North, RW = Robert Wolfe and Associations, SVNRC = Stevens Village, SZ=Stan Zuray, TCC = Tanana Chiefs Conference, TTC = Tanana Tribal Council,

UAF = University of Alaska Fairbanks, USFWS = U.S. Fish and Wildlife Service, USGS = U.S. Geological Survey, UW = University of Washington, and YRDFA = Yukon River Drainage Fisheries Association.

APPENDIX 2 EXECUTIVE SUMMARIES

The following executive summaries were written by principal investigators and were submitted to the Office of Subsistence Management as part of proposal packages. They may not reflect the opinions of the Office of Subsistence Management or the Technical Review Committee. Executive summaries may have been altered for length.

Project Number:	22-201			
Title:	East Fork Andreafsky River Chinook and summer Chum Salmon abundance and run timing, Yukon Delta National Wildlife Refuge, Alaska			
Geographic Region:	Yukon			
Data Types:	Stock Status and Trends			
Principal Investigator:	Jeff Melegari, U.S. Fish and Wildlife Service, Fairbanks Fish and Wildlife Conservation Office			
Co-investigator:	None			
Project Cost:	2022: \$162,978	2023: \$182,274	2024: \$174,915	2025: \$181,180
Total Cost:	\$701,347			

Issue: The Alaska National Interest Lands Conservation Act (ANILCA) specifies that salmon populations in federal conservation units are to be managed to conserve natural diversity, fulfill international treaty obligations, and maintain a priority for subsistence harvest opportunities. Run sizes and production rates in Yukon Chinook and Chum salmon populations have been lower than expected in a number of years over the recent two decades.

The primary function of the East Fork Andreafsky River weir project is to collect fish passage counts and estimate annual escapement for Chinook and summer Chum salmon in this tributary. Estimates of age, sex, size composition of these escapements are also provided by the project. The Andreafsky River is the lowest major salmon producing tributary in the Yukon river drainage and contributes a major proportion of lower Yukon River Chinook and summer Chum salmon stocks. Salmon escapement data from East Fork Andreafsky River provide a valuable early indicator of run strength and timing to fishery managers. In addition, these escapement estimates are the only measure of salmon abundance below the Pilot Station sonar and fill a critical gap in data needed for estimating total Chinook and summer Chum salmon run sizes for the Yukon River. The estimates are necessary to evaluate Chinook and summer Chum salmon escapement goals established by the Alaska Department of Fish and Game (ADF&G) and are an essential component of drainagewide run reconstructions and forecasts.

The Andreafsky River is the first major tributary encountered by salmon migrating up the Yukon River. Salmon fisheries below that point encounter essentially all the Yukon River salmon stocks as they migrate through the area. All communities in the lower Yukon area depend on reliable, large salmon harvests for

sustenance in this remote area, where the costs of imported fuel and groceries are exorbitant and supplies of fresh, healthful foods are limited. Recent Chinook and summer Chum salmon harvests in this area have been lower than historic averages; Chinook Salmon subsistence harvests have been among the lowest on record. The Pilot Station sonar project, situated about 30 rkm upriver from the Andreafsky River confluence, and which provides estimates of total salmon run sizes of all species at that point in the river, does not include the Andreafsky River salmon stocks. Andreafsky River Chinook and summer Chum salmon stocks are not represented in mixed-stock samples collected at the sonar project site for genetic analysis of the Chinook and Chum salmon runs. This underscores the importance of the East Fork Andreafsky weir project in assessing the status of salmon runs which are not represented in other run size and stock group estimates.

A recent review of long-term project data indicated that East Fork Andreafsky Chinook and summer Chum salmon escapements have remained stable over the lifetime of the project, as has run timing for both species. This stability indicates resilience in the East Fork Andreafsky River salmon populations to both environmental change and fishing. The long-term data record will be valuable for future assessments in the face of more severe climate change effects, major ocean ecosystem shifts, and freshwater warming. Recent heat stress studies show that East Fork Andreafsky River weir project is taking on a new dimension of importance in conservation in the era of accelerating anthropogenic climate change.

Objectives

1. Estimate daily and seasonal escapement and run timing of adult Chinook and summer Chum salmon (target species) between the third week of June and the end of July.
2. Estimate the age, sex, and length (ASL) composition of the adult Chinook and summer Chum salmon escapements, for which the 95% confidence intervals of age-sex proportions are no larger than ± 0.1 .
3. Identify and count other fish species passing through the weir daily (recognizing that for most species, these will be partial counts).
4. Record species, ASL information, and spawning condition for all Chinook and summer Chum salmon carcasses, and species, sex, and spawning condition for Sockeye and Coho salmon carcasses, found during daily checks on the upstream side of the weir and along both banks.
5. Measure and record water level and temperature at the fish passage chute every 4 hours, and record air temperature and other weather data at least twice daily.

Methods: The project will use same weir design and structure used in previous years. New floating weir panels were constructed and installed in 2019. The main fish passage chute is located at the deepest part of the channel and leads into a sampling trap and then a video chute, which is fitted with a glass view window and underwater video camera. The weir and video system will be operated 24 hours a day starting June 16 and continuing until the end of July. Statistical methods will be used to estimate probable passage of Chinook and summer Chum salmon after the last day of weir operation. Data and scale samples will be collected from Chinook and summer Chum salmon escapements to characterize their age, sex, and length (ASL) composition. The sample size goal for each species (Chinook and summer Chum salmon) is 220–240 fish for the season. Sampling will be suspended if water temperatures exceed specific thresholds for physiological stress in salmon. The crew will collect ASL samples and check carcasses of heat-stressed salmon near the weir for spawning condition, and log water depth and

temperature and air temperature using automated data loggers and backup manual measurements. Daily fish counts and other data will be reported to the FFWCO for distribution to managers, biologists, and stakeholders in the morning following each 24-hour day. ADF&G will analyze scales for age determination. Annual performance reports will be submitted, and project results will be published each year in the USFWS Alaska Fishery Data Series.

Partnerships/Capacity Building

Yup'it of Andreafskii (a Tribal organization in St. Mary's), Nerklukmte Corporation (a local Alaska Native organization in St. Mary's), and the City of St. Mary's have an ongoing association with the project, through hiring local crew members, leasing land for the project camp site to the USFWS, and providing services in St. Mary's. FFWCO will also continue as in recent years to contract with St. Mary's Native Corporation/SMNC Properties LLC for logistical support and services using local crews. These Tribal and local organizations have built working relationships with FFWCO staff over many years. Furthermore, residents of St. Mary's devote substantial time, expertise, and traditional knowledge, to federal, state, and international fish and wildlife regulatory processes. They hold seats on state and federal Advisory Councils, the Yukon River Panel, and the board of directors of the Yukon River Drainage Fisheries Association. In these capacities they discuss and make decisions about various research and stock assessment projects, including the East Fork Andreafsky River weir, and engage in ongoing conversations about their observations and traditional knowledge of salmon runs with agency staff.

Project Number:	22-202			
Title:	Gisasa River Chinook and summer Chum Salmon abundance and run timing assessment, Koyukuk National Wildlife Refuge, Alaska			
Geographic Region:	Yukon			
Data Types:	Stock Status and Trends			
Principal Investigator:	Jeremy Carlson, U.S. Fish and Wildlife Service, Fairbanks Fish and Wildlife Field Office			
Co-investigator:	Jeff Melegari, U.S. Fish and Wildlife Service, Fairbanks Fish and Wildlife Field Office; Robert Eric Rowe, Tanana Chiefs Conference			
Project Cost:	2022: \$168,695	2023: \$174,957	2024: \$0	2025: \$0
Total Cost:	\$343,652			

Issue: Through Section 302 of the Alaska National Interest Lands Conservation Act, the USFWS has a responsibility to ensure that salmon populations within federal conservation units are conserved in their natural diversity, that international treaty agreements are met, and subsistence opportunities are maintained. The Gisasa River provides important spawning and rearing habitat for Chinook and summer Chum salmon that contribute to complex Yukon River mixed stock subsistence and commercial fisheries. The Gisasa River weir is currently one of only two projects within the Koyukuk River drainage that provide in-season run information. The data is utilized postseason to produce an annual estimate of escapement and assess the success of management actions in-season. These data will also help evaluate long-term trends in species abundance and age, sex, and length composition.

Objectives:

1. Use video weir technology to enumerate daily passage of all fish species and forward this data on to managers and users daily.
2. Estimate seasonal escapement of adult Chinook Salmon and summer Chum Salmon using Sethi and Bradley (2016) model, as needed, and characterize their run timing.
3. Estimate the age, sex, and length (ASL) composition of the adult Chinook and summer Chum salmon escapements, for which the 95% confidence intervals of age-sex proportions are no larger than ± 0.1 .
4. Work with Tanana Chiefs Conference (TCC), as the Tribal Organization for the region, to transition operation of the project from USFWS staff to TCC.

Methods: A resistance board weir will be installed and operated on the Gisasa River from mid-June through early to mid-August during each year. A trap equipped with a video counting chute will allow all fish passing through the weir to be identified to species and counted. Count data will be provided to managers and other interested parties daily. Age (scales), sex, and length data will be collected from Chinook, and Chum salmon. Scales will be sent to Alaska Department of Fish and Game for aging. Personnel from TCC will participate in all aspects of the project to build the capacity to assume the role of principle investigator

Partnerships/Capacity Building: Project staff have worked with staff from Tanana Chiefs Conference’s (TCC) Henshaw River Weir, the other Koyukuk River monitoring project, to share knowledge, methods, and labor for weir setup. This cooperation with TCC will be expanded upon by working closely with TCC during both years of this project to familiarize them with all aspects of the project and help them build the capacity to take over as the principle investigator after the 2023 season. The FFWCO has strived for local involvement and capacity building with the project and is committed to continually promoting capacity building by describing project opportunities at RAC, YRDFA, and Refuge coordination meetings. The FFWCO has also worked with Koyukuk National Wildlife Refuge to provide field work experience for Alaska Native Science & Engineering Program students and local hires from the Refuge.

Project Number:	22-203			
Title:	Combining molecular and traditional methods to assess prey availability, prey quality, and diets in relation to size and condition of outmigrating Chinook smolts in the lower Yukon River			
Geographic Region:	Yukon			
Data Types:	Stock Status and Trends			
Principal Investigator:	Courtney Weiss, Yukon Delta Fisheries Development Association			
Co-investigator:	Daniel Bogan, Alaska Center for Conservation Science, University of Alaska Anchorage; Rebecca Shaftel, Alaska Center for Conservation Science, University of Alaska Anchorage; Katharine Miller, National Marine Fisheries Service; Ragnar Alstrom, Yukon Delta Fisheries Development Association			
Project Cost:	2022: \$165,838	2023: \$138,804	2024: \$0	2025: \$0
Total Cost:	\$304,642			

Issue: The proposed research addresses *Yukon Region 2022 Priority Information Need: Distribution, abundance, condition, and survival of juvenile and out-migrating salmon in the Yukon River drainage.*

This research will evaluate the composition, spatial variation, and temporal variation in fish and invertebrate prey for juvenile Chinook salmon in distributary habitats, and assess the quality of prey resources in relation to juvenile Chinook salmon growth and condition. Juvenile salmon migration timing has evolved in response to seasonal patterns in prey availability. To optimize growth, juvenile salmon must be capable of rapidly capitalizing on short-lived episodes ('resource pulses') of high prey availability in order to amass energy stores prior to the stressful parr-smolt transformation. Several studies indicate that juvenile growth in freshwater may influence survival during marine entry and early marine life stages, and that the quality and quantity of prey resources available during outmigration and early marine residence are crucial factors for juvenile salmon growth and survival.

The Yukon River is experiencing rapid climatic changes that are evidenced in warmer water temperatures, decreased ice periods, and reduced ice thickness. Since 2015, water temperatures in the lower Yukon River have consistently exceeded the long-term average. Less predictable inter-annual variability in environmental conditions can lead to temporal mismatches between juvenile salmon and pulsed prey resources in certain years. Such mismatches could lead to high mortality if pulses are missed during critical times for feeding.

Recent advances in the use of DNA-based diet determination provide an additional tool for accurate diet analysis. DNA-based methods can identify prey regardless of the degree of digestion. When standard morphological content analysis and DNA-based methods are combined, they can provide greater resolution of diet and trophic interactions than when either method is used in isolation. This research proposes to evaluate how seasonal patterns in resource availability interact with inter-annual environmental variation to influence the growth and energetic status of outmigrating Chinook salmon. We propose to conduct two years of prey field sampling and DNA-analysis of stomach samples. Prey field data will be compared with existing data from a pilot study of prey dynamics in 2016. Combining all three years of data will increase our understanding of mechanisms by which seasonal patterns in prey availability affect Chinook salmon growth and by extension survival rates.

Objectives:

- 1) Characterize changes in diet composition of juvenile Chinook salmon in the Yukon Delta over the duration of the outmigration season using an integrative approach.
- 2) Characterize changes in the composition and quality (lipid content) of prey available to, and changes in prey selection by, juvenile Chinook salmon across the outmigration season and across years
- 3) Relate inter-annual environmental variation to among-year differences in lipid availability (prey) and among-year differences in size and condition of juvenile Chinook salmon

Methods: Chinook salmon and weekly prey field samples will be collected using other funding. Diet analysis of individual Chinook will be assessed by excising the stomachs from frozen samples and weighing and identifying stomach contents under a microscope to the lowest taxonomic level feasible. Each taxa or prey group will be measured and enumerated, and the percent prey weight composition will be summarized. DNA samples will be extracted from the stomach contents and processed in a commercial laboratory. Drift samples will be processed by trained taxonomists at UAA's Alaska Center for Conservation Science aquatic ecology lab. Published length-weight regressions will be used to estimate biomass for all major prey taxa. Flow volume (measured during field sampling; described previously) will be multiplied by surface area to estimate water volume sampled; this estimate will be combined with biomass estimates to produce estimates of drift prey densities by taxa. Non-parametric analysis (i.e.,

PERMANOVA, MDS) will be used to investigate the relationship between biotic (e.g., Chinook body size) and abiotic (i.e., water temperature, season, year) factors and community composition of the diets. Seasonal variations in diet quality in relation to juvenile Chinook condition will be assessed by evaluating consumed energy in relation to required maintenance metabolism given Chinook size and water temperature. The result will provide information on how well diets are fulfilling Chinook energetic needs for varying sizes of salmon, and throughout the migration period.

Partnerships/Capacity Building: Project management is done by the in-region CDQ group YDFDA. This proposal continues to build on a multi-year history of research and engagement with the residents of the Lower Yukon, specifically in the communities of Emmonak, Alakanuk, and Kotlik. YDFDA has been an important lead in this research, enabling local fishermen and technicians (mostly high school students) throughout the Yukon Delta to have an active role in juvenile Chinook salmon research. Local knowledge and expertise have been invaluable in helping identify appropriate sampling locations, navigating complex waterways, and developing sampling protocols for the Yukon River environment. In exchange, local fishermen and technicians have gained first-hand knowledge of scientific research principals and processes. The project PI lives in the community during the summer and is often approached by community members to talk about the research and its importance to salmon ecology. The unique relationship between scientists and fishermen has made this research successful and is providing a valuable multi-year dataset on understudied aspects of juvenile salmon ecology in the Yukon River.

Project Number:	22-204			
Title:	Western Alaska Coho Salmon Genetic Baseline Development			
Geographic Region:	Yukon			
Data Types:	Stock Status and Trends			
Principal Investigator:	Elizabeth Lee, Alaska Department of Fish and Game, Commercial Fisheries Division, Gene Conservation Laboratory			
Co-investigator:	Tyler Dann, Alaska Department of Fish & Game, Commercial Fisheries Division, Gene Conservation Laboratory			
Project Cost:	2022: \$0	2023: \$52,348	2024: \$64,434	2025: \$0
Total Cost:	\$116,782			

Issue Addressed: Chinook salmon (*Oncorhynchus tshawytscha*) and chum salmon (*O. keta*) runs are major subsistence fishery resources for Yukon River communities (ADF&G 2013; JTC 2020). However, low productivity and poor return years have been observed for both species in recent years, resulting in economic hardships and food security issues for fishing communities throughout the region. With variable Chinook and chum salmon returns, the importance of other fishery resources is growing on the Yukon River, including coho salmon (*O. kisutch*). Coho salmon have been relatively understudied on the Yukon River compared to Chinook and chum salmon, and limited information exists on the distribution and abundance of coho salmon throughout the drainage. Nevertheless, fisheries biologists and managers are required to use the best available information to assess coho salmon abundance when managing the subsistence coho salmon fisheries on the Yukon River.

Currently, ADF&G and NOAA collaborate to conduct annual offshore trawl surveys in the Bering Sea to assess abundances of juvenile salmon species. Prior studies have demonstrated a clear relationship between juvenile abundance and future adult returns of Yukon River Chinook salmon, enabling juvenile-based forecasts of adult run sizes (Howard et al. 2020). Furthermore, an in-progress study is developing a similar forecast tool for Yukon River chum salmon. Due to a mixture of salmon stocks in the Bering Sea, genetic mixed-stock analysis (MSA) is a central component of these models and facilitates apportionment of Yukon River salmon from other Alaskan salmon stocks. These forecasts are the best available and

directly inform conservation and management of major fishery resources in the Yukon River. Coho salmon conservation and management could similarly benefit from juvenile-based forecasts of adult run sizes, since coho salmon samples and abundance data is collected during the annual Bering Sea trawl surveys. However, a genetic baseline for coho salmon that can be used for Bering Sea MSA is necessary before developing a juvenile-based forecast model for coho salmon in the Yukon River.

The proposed project addresses the following Office of Subsistence Management Priority Information Need for Federal Subsistence Fisheries in the Yukon Region: ***Baseline information about geographic distribution, migration patterns, run timing, genetic structure, and tributary escapements of Yukon River coho Salmon.*** Ultimately, the product of the proposed project will eventually contribute to a second Priority Information Need for Federal Subsistence Fisheries in the Yukon Region: ***Reliable methods of forecasting Coho salmon run abundance.***

The primary goal of this proposed project is to develop a high-resolution genetic baseline for Yukon River and Coastal Western Alaska coho salmon populations. The genetic baseline can be used to describe the genetic structure of coho salmon 1) within the Yukon River and 2) between the Yukon River and other Coastal Western Alaska populations (i.e., Norton Sound, Kuskokwim River, and Bristol Bay). Moreover, the baseline can then be used for MSA in subsistence fisheries management applications. MSA can provide federal, state, and local subsistence fisheries managers and biologists with stock composition estimates of mixed-stock catch or harvest samples, which can be utilized in interdisciplinary efforts to 1) understand population dynamics and run structures, 2) estimate escapement, harvest, and stock-specific abundances, and 3) forecast future runs of coho salmon. Project objectives include:

Objective 1: Genotype 43 Western Alaska coho salmon collections for 372 genetic markers using amplicon sequencing and a bioinformatic pipeline.

Objective 2: Construct a genetic baseline and analyze the baseline for population structure.

Objective 3: Evaluate the MSA potential of the baseline for management applications and identify missing baseline populations through engagement with subsistence fisheries stakeholders.

Methods: DNA from 3,990 coho salmon tissue samples collected from 43 spawning locations across Western Alaska (Yukon River, Norton Sound, Kuskokwim River, and Bristol Bay) will be genotyped at 372 genetic markers using novel, yet well-vetted, Genotyping-in-Thousands by Sequencing methods (GT-seq; Campbell et al. 2015), a cost-effective method for screening hundreds of genetic markers for baseline development. The GT-seq marker panel of 372 loci was developed for coastwide coho salmon collaboration by WDFW and designed to include the genetic markers used by DFO. Libraries of pooled samples will be prepared and sequenced following the GT-seq methods described in Campbell et al. (2015) with modifications as described in Barclay et al. (2019). We will examine population genetic structure among populations. We will test reporting groups by sampling individuals from the baseline without replacement to generate test mixtures and use the R package *rubias* to estimate the stock composition of test mixtures. With these methods, we will evaluate the capability of the baseline to accurately and precisely estimate Yukon River stock compositions within mixture samples. The results of these baseline tests will be shared with Yukon River Western Alaska fisheries managers and scientists and local community organizations. Discussions with these groups will us help identify missing baseline populations and recommend future avenues of improvement for a more comprehensive Western Alaska coho salmon baseline needed for Yukon River subsistence fisheries management applications.

Partnerships/Capacity Building: Our long-term vision is that the initial genetic baseline developed through our proposed project will be expanded into a more comprehensive Western Alaska baseline through partnerships and collaboration with local communities. This initial project represents the first step towards building a valuable partnership with Yukon River and Western Alaska rural communities and Alaska Native organizations to more meaningfully participate in management of subsistence fisheries.

The baseline proposed here would be a product of previous opportunistic sampling in Western Alaska. Therefore, it is an initial Western Alaska coho salmon baseline that will benefit from additional, targeted baseline sample collecting. The quantitative measures obtained through genetic structure analysis will allow us to form hypotheses about missing populations within the baseline. However, ground-truthing with local knowledge will be essential for identifying additional baseline collection sites across the vast and remote Western Alaska landscape. Partnership building with Yukon River and Western Alaska community organizations will be facilitated by ADF&G local area staff, Research Coordinators, Fisheries Managers, and Fisheries Scientists throughout the project. Formal meetings will be planned with these groups each Spring of the project duration to disseminate baseline progress, gather feedback from local community organizations, and discuss baseline improvement options with these stakeholders. Ultimately, development of a comprehensive Western Alaska coho salmon baseline will provide the foundation for more sustainable harvesting of an increasingly important fishery resource on the Yukon River.

References:

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Barclay et al. 2019. New genetic baseline for Upper Cook Inlet Chinook salmon allows for the identification of more stocks in mixed stock fisheries: 413 loci and 67 populations. Alaska Department of Fish and Game, Fishery Manuscript Series No. 19-06.
Campbell et al. 2015. Genotyping-in-Thousands by sequencing (GT-seq): A cost effective SNP genotyping method based on custom amplicon sequencing. Molecular Ecology Resources.
Howard et al. 2020. Northeastern Bering Sea juvenile Chinook salmon survey, 2017 and Yukon River adult run forecasts, 2018–2020. Alaska Department of Fish and Game, Fishery Data Series No. 19-04.
JTC. 2020. Yukon River salmon 2019 season summary and 2020 season outlook. Alaska Department of Fish and Game, RIR 3A20-01.

Project Number:	22-251			
Title:	The Presence and Use of Salmon in the Pastolik and Pastoliak Rivers			
Geographic Region:	Yukon			
Data Types:	Stock Status and Trends, Harvest Monitoring, and Traditional Ecological Knowledge			
Principal Investigator:	Alida Trainor, Division of Subsistence, Alaska Department of Fish and Game			
Co-investigator:	Nate Cathcart, Division of Sport Fish, Alaska Department of Fish and Game			
Project Cost:	2022: \$272,804	2023: \$102,301	2024: \$0	2025: \$0
Total Cost:	\$375,105			

Issue: Sustainable management of salmon fisheries requires accurate data about stock status and harvest. For two coastal rivers located in the Yukon Delta National Wildlife Refuge, this information does not exist or is very limited, outdated, or unsubstantiated. The Pastolik and Pastoliak rivers, near the north mouth of the Yukon River, have been traditionally used by residents of Kotlik and the surrounding area for subsistence salmon and nonsalmon fishing long before Alaska became a state (Wolfe 1981; Yukon Delta National Wildlife Refuge 1988; Runfola et al. 2018). Despite long-term use of these rivers, fisheries managers have no data on subsistence salmon harvests for them and maintain unresolved questions about presence or absence, abundance, and health of the salmon species in these rivers. This study seeks to address the data gaps that exist about the presence and use of salmon in the Pastolik and Pastoliak rivers.

Objectives:

- 1) Document local and traditional knowledge held by Kotlik residents about:
 - a. the presence and ecology of salmon in the Pastolik and Pastoliak rivers;
 - b. the historical and contemporary uses of these river systems for subsistence salmon fishing.
- 2) Document subsistence salmon harvests and the locations of harvest in the Pastolik and Pastoliak rivers during the 2022 fishing season to understand patterns of harvest specific to these rivers and distinct from the total harvest within the Y1 District of the Yukon River.

- 3) Substantiate presence and enhance knowledge of salmon stocks in the Pastolik and Pastoliak rivers through biological sampling methods. Specifically,
 - a. identify what species of salmon are present in what life stages, with a focus on identifying adult spawning salmon and distributions throughout both rivers of adult spawning and juvenile rearing.
 - b. document run timing.
 - c. determine if stocks identify genetically with Yukon River or other major stocks through genetic sampling.
 - d. submit detailed nominations to the AWC for waterbodies supporting anadromous species, including seasonal efforts that document the fish assemblages present, including life stages of certain species. Share results publicly through the ADF&G AFFI online mapper.

Methods: ADF&G researchers will work with the Kotlik Traditional Council to identify two local research assistants (LRAs) to help with ethnographic interviews and household surveys. Semi-structured interviews will be conducted with long-time residents who have a history of fishing on the Pastolik and Pastoliak rivers. Researchers will administer a short salmon harvest survey to households who fished for subsistence salmon in the Pastolik and Pastoliak rivers in 2021. The survey will document what species were harvested, the amounts, timing of harvest, gear types used, and location of harvest. These data will be the first attempt to quantify subsistence salmon harvest information specific to these rivers. During interviews and surveys, a map of the Pastolik and Pastoliak rivers and nearby surrounding areas will be used as a visual reference. Fishing sites, observations of salmon and salmon habitat, and other relevant information related to the topics of interest will be noted on the maps. Map data will later be digitized and formatted using ESRI ArcMap GIS software.

For biological data collection, ADF&G staff will also utilize the expertise of a LRA and local boat driver. Staff and LRAs will travel the Pastolik and Pastoliak rivers by boat and helicopter, conducting biological sampling throughout each drainage. Primary fish capture methods proposed to be used throughout the duration of field work include actively sampling with electrofishing in upper segments of the rivers and more passive sampling using gillnets in downstream reaches of each river. In each river, two 100' gillnets with 5.5" (for chum and pink salmon) and 7" (Chinook and chum) stretched mesh will be fished perpendicular to streambanks and set overnight and checked each day throughout the duration of the project. Researchers will also seek to rent fishing nets from local fishers to increase the mesh selectivity. Fishers in this area tend to use 6" or 7.5" stretched mesh to catch salmon. Opportunistic sampling methods include minnow trapping, aerial observations, and angling. Minnow traps will be set opportunistically by boat or raft-electrofishing crews in habitats able to support juvenile salmon. Trapped juveniles will be visually identified, measured to fork length (mm), and will provide verification of rearing habitat. Aerial surveys will be performed opportunistically during helicopter travel to, from, and at raft-electrofishing sites with any observations georeferenced on a handheld GPS. If salmon are observed to be abundant, angling will be used as an alternative method of capture to reduce salmon mortality during sampling. Direct and indirect genetic sampling will be performed and then analyzed by the ADF&G genetics laboratory and Jonah Ventures Lab in Boulder, CO. Captured fishes from any method will be identified, measured to fork length, photographed when necessary (such as to document identity for verification of species), and recorded. Sex will be recorded for adult salmon. Any remarkable or informative notes (e.g., sex, spawning condition, disease) for other species will be noted. In addition, in each river, researchers will collect three water samples from six locations in each river (N=36) for environmental DNA (eDNA) analysis, which will provide evidence of potential presence or absence of various salmon species to be detected. All captured adult salmon will be tissue sampled via clipping the axillary process and saved for genetic analysis, which will help determine if they are a unique stock from

other Yukon River salmon. For observations of anadromous fishes, staff will generate nominations to the AWC.

Partnerships/Capacity Building: Throughout the development of this proposal, the lead investigator was in communication with local residents of Kotlik who have expressed interest for more informed and comprehensive salmon management of the Pastolik and Pastoliak rivers. This communication helped shape project design and decide the sampling methods for household harvest surveys and traditional knowledge interviews. Through consultation with the Kotlik Traditional Council, investigators and community leaders have agreed to include local research assistants (LRAs) in all aspects of data collection. One of the main goals of this project is to facilitate information sharing between local residents and fisheries management agencies. Local residents will have the opportunity to share their knowledge of salmon in the Pastolik and Pastoliak rivers with researchers, and in return project staff will share what they learn through biological sampling with the community. This two-way information exchange will help build a relationship between the community and managers to strengthen additional partnerships in the future.

Additionally, project staff will work with the tribal council in Kotlik to hire LRAs, to select key respondents, and facilitate community meetings. The LRAs will be trained in anthropological and biological sampling methods. This training will increase the capacity for local involvement in future research opportunities. This increases coordination between agencies, tribal entities, and community members; working together in data collection increases communication and leads to better understanding of local issues and local understanding of science and management issues.

Project Number:	22-252			
Title:	Combining Traditional Ecological Knowledge & Biological Sampling to Enhance Understanding of Humpback Whitefish and other Non-salmon Fishes in the Upper Koyukuk Region			
Geographic Region:	Yukon			
Data Types:	Harvest Monitoring, Traditional Ecological Knowledge, and Stock Status and Trends			
Principal Investigator:	Brooke McDavid, Division of Subsistence, Alaska Department of Fish and Game			
Co-investigator:	Brian McKenna, Tanana Chiefs Conference; Randy J. Brown, U.S. Fish and Wildlife Service, Fairbanks Fish & Wildlife Conservation Office			
Project Cost:	2022: \$126,629	2023: \$105,323	2024: \$0	2025: \$0
Total Cost:	\$231,952			

Issue: Whitefishes and other nonsalmon fishes are an integral component of the overall subsistence harvest profile in Yukon River communities, including Allakaket and Alatna. However, despite their prolific subsistence use and commercial exploitation, there is limited information about their stock statuses, life histories, and annual subsistence harvests (Brown et al 2012). This lack of information makes managing nonsalmon fisheries extremely difficult for both federal and state managers. Using mixed qualitative and quantitative methods, the proposed research will update the documentation of TEK of nonsalmon fishes in the upper Koyukuk River area with a focus on local fishers’ observations of landscape and waterway change linked to climate effects. It will also update harvest estimates of nonsalmon species for the communities of Allakaket and Alatna in order to allow the investigation of shifting harvest patterns. The biological component of this study will address existing data gaps in humpback whitefish populations in the upper Koyukuk River drainage. Specifically, the demographic composition of humpback whitefish will be

described for spawning populations in the Alatna and South Fork Koyukuk rivers. This study will describe age, sex, and length structures, assess fish condition through weight at length relationships, and assess the reproductive health of spawning populations by analyzing the gonadosomatic index, or the relationship of ovary weight to total weight. This work will have multiple applications. Updated harvest data will assess changes in the harvest, provide managers information about important nonsalmon fish habitats (mapped data), and develop their understanding of role of nonsalmon fishes within a total context of subsistence, especially in light of declining salmon runs. Critical assessments of local experiences of and adaptations to climate, landscape-based, and economic change in the fisheries are critical inputs to management and policy.

Objectives:

1. Update documented TEK of critical nonsalmon fish populations held by Alatna and Allakaket residents with particular attention to humpback whitefish, including:
 - a. Observational knowledge about landscape and waterway change linked to climate change effects in the upper Koyukuk River region;
 - b. Observed changes to nonsalmon fish populations, their habitats, or both over time;
 - c. Adaptations in subsistence harvest practices over time due to environmental or resource change and associated regulatory, economic, or social change.
2. Estimate nonsalmon fish harvests, timing, and locations and compare with results from previous studies.
3. Describe the demographic composition (age, sex, length, weight, and gonadosomatic index) of humpback whitefish spawning populations in the Alatna and South Fork Koyukuk rivers.

Methods: This research will utilize an interdisciplinary approach to study humpback whitefish and other nonsalmon fishes in the upper Koyukuk River drainage. ADF&G staff from the Division of Subsistence will lead the ethnographic and harvest research components of this project and staff from Tanana Chiefs Conference will lead the biological components of the project. Local research assistants (LRAs) will be hired to aid both aspects of the data collection.

Division of Subsistence staff will administer a short household harvest survey to better understand harvest levels, the timing of harvest, the gear types used, and locations of harvest. A census of all households in both communities will be attempted. Ethnographic research will consist of semi-structured interviews and mapping of nonsalmon habitats. Researchers will develop an interview protocol prior to fieldwork in consultation with tribal councils and fisheries managers. Topics are expected to include traditional harvest practices; nonsalmon fish life histories and habitat; effects of climate change on nonsalmon fish, especially humpback whitefish, and their habitats; and any concerns related to fisheries management and the proposed Ambler Road development. The semi-structured protocol will help guide conversations, but it is expected that respondents will discuss additional topics related to subsistence fishing and resource management. Maps will be also be used during interviews to record information about current and historical fishing sites, nonsalmon fish habitat, and observations of environmental change.

For the biological component of the project, project investigators (PIs) will sample humpback whitefish in two locations either through acquired samples from subsistence caught fish or through direct sampling. In the Alatna River, PIs will sample whitefish harvested by subsistence fishers. In the South Fork Koyukuk River, PIs will apply for an aquatic resource permit through ADF&G to allow for the lawful collection of fish and will utilize a small mesh beach seine. All identified humpback whitefish will be measured for length, weighed, and sexed. Additionally, ovaries will be weighed, and otoliths will be collected. Fork length (FL) will be measured to the nearest 1 mm using a 100 cm soft tape measuring ruler. Wet weight will be measured to nearest 1 g using a digital hanging scale with a capacity of 50 g to 50 kg. After recording length and weight measurements, all fish will be cut open so the reproductive organs can be visually

assessed for sex identification. Otoliths (2) from each fish will be removed, stored individually, and systematically tied to the recorded data for each individual fish so that ages can be associated with fork length, wet weight, ovary weights, and sex identification records. All sampled fish will be donated to the communities of Allakaket and Alatna.

Partnerships/Capacity Building: This interdisciplinary project relies heavily on the partnership with the tribal councils, communities, and residents of Allakaket and Alatna. Through the development of this proposal, representatives from both the Allakaket and Alatna tribal councils have contributed to the development of the research design. If this project is funded, project staff will work with the councils to identify and hire LRAs to assist with data collection. These LRAs will be trained in anthropological and biological sampling methods. This training will increase the capacity for local involvement in future research opportunities. Additionally, this project brings together researchers from the State of Alaska, USFWS, and the Tanana Chiefs Conference. This partnership and collaboration will inevitably draw on diverse perspectives and experience that will allow researchers to analyze results critically and develop strong recommendations for future research and improved management of whitefish species.

Project Number:	22-253			
Title:	Yukon River Nonsalmon Subsistence Survey			
Geographic Region:	Yukon			
Data Types:	Harvest Monitoring and Traditional Ecological Knowledge			
Principal Investigator:	Catherine Moncrieff, Yukon River Drainage Fisheries Association			
Co-investigator:	None			
Project Cost:	2022: \$46,230	2023: \$57,704	2024: \$57,704	2025: \$57,704
Total Cost:	\$219,343			

Issue Addressed: The Yukon River Drainage Fisheries Association (YRDFA) is proposing to address two of the 2022 Priority Information Needs identified by the Yukon Region Federal Subsistence Regional Advisory Councils. The first issue addressed is to gather Traditional Ecological Knowledge (TEK) of freshwater species in the Yukon River, and the second issue is to gather knowledge on the population, reproduction, and health of spawning habitat for Bering Cisco and Humpback Whitefish. This project is significant because there has been an increase of expressed concern from residents of the Yukon River at 2020 Federal Subsistence Regional Advisory Council (RAC) meetings about the population and health of nonsalmon species.

Gathering knowledge about the population and health of freshwater species, also referred to as nonsalmon species of fish in the Yukon River through TEK methodology has direct association to the federal subsistence freshwater species fisheries that take place along the Yukon River. Nonsalmon species of fish are prioritized in 2022 by the Yukon River RACs, with a specific focus on Humpback Whitefish (*Coregoninae clupeaformis*) and Bering Cisco (*C. laurettae*). This project is relevant to the Federal Subsistence Management and Section 812 of the Alaska National Interest Lands Claims Act (ANILCA) which directs the Department of the Interior (DOI) to cooperate with other federal agencies, the State of Alaska, and Alaska Native and rural organizations to research and monitor subsistence uses of fish and wildlife on federal public lands and to seek data from, consult with, and make use of the knowledge of local residents engaged in subsistence activities. The creation of a nonsalmon subsistence survey that will work specifically with the federal fisheries management team will add another tool in the federal fishery manager's toolbox.

This project will address harvest pressure on nonsalmon species through the collection of information about local fisher observations, traditional harvest practices and timing of nonsalmon species.

This program will be an adaptive communication program which maximizes fishers' voices in subsistence fisheries and enables the federal manager to send important conservation messages directly into the fishers' households in five key villages. With this proposal, the surveyor program is responding to the most recent feedback from the fishers, and expanding to hire more surveyors, survey new fishers and include new information to pre-season, in-season, and post-season meetings to strengthen both the capacity building and communication aspects of the program.

The extent and depth of subsistence use of nonsalmon species in the Yukon River can be seen in the most recent Annual Management Report from 2017 showing the harvest of 67,464 whitefish (*Coregonus spp. and Prosopium cylindraceum*), 22,877 northern pike (*Esox lucius*), and 13,038 sheefish (*Stenodus leucichthys*) (Estensen et al. 2018). Other species are also harvested but are only reported by total because of small amounts of harvest or because they occur outside of the salmon season. The following were their totals for 2017: 2,843 burbot (*Lota lota*), 6,661 tomcod (*Eleginus gracilis*), 1,501 Arctic grayling (*Thymallus arcticus*), 179 longnose suckers (*Catostomus catostomus*), 109,888 Alaska blackfish (*Dallia pectoralis*), 19,357 Arctic lamprey (*Lethenteron camtschaticum*), and 16,492 Pacific herring (*Clupea pallasii*). ADF&G reports that estimates of nonsalmon harvest in Yukon River drainage is poorly understood at a species level and a comprehensive assessment of nonsalmon harvest and use, by species, has been identified as a research priority (Estensen 2018:37-38; Brown RJ et al. 2012). They note that information about nonsalmon harvests are collected through the ADF&G annual postseason subsistence survey but does not include species distinctions.

Objectives:

1. Develop a protocol for nonsalmon subsistence survey program that will collect fisher information about Yukon River nonsalmon harvests and observations.
 - a. Review protocol with Yukon River fishery managers and researchers to include methods for community selection, time in the field, data collection, approvals and informed consent.
2. Implement nonsalmon subsistence survey program
 - a. Conduct community outreach, travel to communities, hold meetings, hire and train surveyors, collect nonsalmon fisher harvest data and observations from five Yukon River communities in the spring and late summer/ fall nonsalmon fishing periods, and evaluate annually.
3. Build capacity of YRDFA, local surveyors, fishers and Yukon River Federal Subsistence Regional Advisory Councils to participate in nonsalmon subsistence fisheries management and regulatory decision-making.

Methods: Methods for this project include communication, outreach, survey instrument, data analysis, and annual evaluations. YRDFA will develop a Traditional Ecological Knowledge (TEK) survey protocol for community surveyors to conduct weekly interviews with active fishers about their nonsalmon harvests in five Yukon River communities and will focus on identification and differentiation of Bering Cisco and Humpback Whitefish. Additionally, the survey will gather information about whether fishing was for daily use or for preservation for later use. This knowledge will be utilized to build on existing knowledge and provide contemporary updates that are shared with federal fisheries managers for the Yukon River for their use in subsistence fisheries decision-making.

YRDFA will hire local surveyors from five of the 10 salmon surveyed villages who will interview known nonsalmon fishers in their communities about qualitative harvest data and observations. This protocol will be adapted from and modeled after the successful In-season Subsistence Salmon Survey Program. The

interview methodology will follow the National Academy of Science's *Principles for Conduct of Research in the Arctic* and will include informed consent for participants, to be conducted prior to the first interview. Privacy and confidentiality will be protected in the reporting. In addition to collecting information from fishers, surveyors will disseminate relevant information to fishers. For the data analysis, at the end of the season the PI will review all the survey forms and the compiled MS Excel spreadsheet and produce summary narrative reports.

Partnerships/Capacity Building: This project will build the capability and expertise of the locally hired surveyors to enhance their communication and reporting skills. Partnerships will be maintained with the federal fishery managers and also with the village Tribal Councils and individuals working as a part of the project. YRDFA will be working in partnership with all these entities but no formal partnership agreements are made as a result of this. Contracts with the Tribal Councils and/or the individuals hired will be working agreements that guide the quality of the program to ensure we meet our goals and objectives of the program.



Federal Subsistence Board

1011 East Tudor Road, MS 121
Anchorage, Alaska 99503 - 6199



FISH and WILDLIFE SERVICE
BUREAU of LAND MANAGEMENT
NATIONAL PARK SERVICE
BUREAU of INDIAN AFFAIRS

FOREST SERVICE

AUGUST 13 2021

In Reply Refer To
OSM 21043.LG

Northwest Arctic Subsistence
Regional Advisory Council
Office of Subsistence Management
1011 E. Tudor Road
Anchorage, Alaska 99503-6199

Dear Council:

This letter responds to your Temporary Wildlife Special Action Request WSA21-01, requesting closure of Federal public lands in Units 23 and 26A to caribou and moose hunting by non-Federally qualified users from August 1 to September 30, 2021.

The Federal Subsistence Board (Board) has deferred this request and will reconsider it prior to the 2022 hunting season. The Board requested that Office of Subsistence Management (OSM) staff seek additional input on concerns related to caribou from the Western Arctic Caribou Herd Working Group, Federal land-managing agencies, local Fish and Game Advisory Committees, the Alaska Department of Fish and Game, Regional Advisory Councils, commercial guides and transporters, and subsistence users in the area. The Board also asked OSM staff to include comparisons of moose harvest by survey area within Unit 23 in their analysis. The Board will further discuss and take action on this request in 2022.

The Board's deferral of this temporary special action request means that at this time, there are no changes to Federal regulations for moose or caribou in Units 23 or 26A for the 2021 season. Existing regulations, published prior to this request, are still in effect.

The enclosed copies of the Staff Analysis and the Interagency Staff Committee Recommendation provide further information and justification for this action. If you have any questions, please contact Lisa Grediagin, Wildlife Division Supervisor, Office of Subsistence Management, at (907) 786-3357.

Northwest Arctic Council

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Sincerely,



Anthony Christianson
Chair

Enclosures

cc: Federal Subsistence Board
Office of Subsistence Management
Tom Baker, Chair, Northwest Arctic Subsistence Regional Advisory Council
Gordon Brower, Chair, North Slope Subsistence Regional Advisory Council
Louis Green, Chair, Seward Peninsula Subsistence Regional Advisory Council
Jenny Pelkola, Chair, Western Interior Subsistence Regional Advisory Council
Benjamin Mulligan, Deputy Commissioner, Alaska Department of Fish and Game
Mark Burch, Special Projects Coordinator, Alaska Department of Fish and Game
Interagency Staff Committee
Administrative Record

INTERAGENCY STAFF RECOMMENDATION

Approve Temporary Wildlife Special Action Request WSA21-01 **as modified by OSM** to close moose hunting to non-Federally qualified users in Unit 23 Aug.1 – Sept. 30, 2021.

Justification

We acknowledge the vital concerns voiced by Federally qualified subsistence users in Units 23 and 26A regarding food security and the continuation of subsistence uses. To help mitigate the situation, we recommend collaborative cross-agency efforts to better understand the patterns of migration in the Western Arctic Caribou Herd, including impacts of external factors. We also encourage that co-equal attention be given to traditional knowledge and western science in understanding and managing subsistence resources in the region.

As indicated in the staff analysis for WSA21-01, closure of caribou hunting to non-Federally qualified users in Units 23 and 26A is not warranted at this time. The long-term effects of aircraft and non-local hunting activity on caribou migration remain unclear, though short-term effects on individual harvest success by Federally qualified subsistence users may be occurring. The Board has already closed areas of historically high user conflicts in Unit 23 along a portion of the Noatak River, the Squirrel, Eli, and Agashashok River drainages to caribou hunting by non-Federally qualified users, while national parks and monuments within the unit are already closed to this user group. Furthermore, closure of Federal public lands in these units may serve to concentrate non-Federally qualified users onto State lands, which are often located close to villages, and may increase user conflicts in these areas; and non-Federally qualified users would still be able to access and harvest caribou on gravel bars below the mean high-water mark along navigable rivers within Federal public lands as these areas are considered State land. Finally, aircraft traffic from other users such as recreational boaters and hikers would still occur if a closure was enacted.

A closure to moose hunting in Unit 26A to non-Federally qualified users is also not warranted. Moose harvest by non-Federally qualified users is very low in the unit and closure of moose hunting to this user group would not aid in the conservation of moose populations. Additionally, moose populations are at the edge of their distribution range in Unit 26A and are limited by marginal habitat available in the area. Finally, the Unit 26A Controlled Use Area is already closed to the use of aircraft for hunting moose from July 1 to Sept. 14 as well as Jan. 1 to Mar. 31, which already limits moose hunting opportunities by non-Federally qualified users.

A closure to moose hunting in Unit 23 to non-Federally qualified users is warranted. As shown in the analysis, there are substantial conservation concerns that threaten the moose population in the unit. Surveys indicate substantial declines in almost every survey area, and population estimates are below State objectives. Additionally, the harvestable surplus has likely been exceeded. Regulatory changes have been made to reduce moose harvest and promote population recovery in Unit 23 under both Federal and State regulations since 2017. Despite these efforts, moose populations have continued to decline. Closure

of moose hunting to non-Federally qualified users in Unit 23 may aid in the recovery of the moose population, may provide additional harvest opportunities for Federally qualified subsistence users, and is warranted under Section 815(3) of ANILCA and under 50 CFR 100.10(d)(4)(vi).

**STAFF ANALYSIS
TEMPORARY SPECIAL ACTION
WSA21-01**

ISSUES

Temporary Wildlife Special Action WSA21-01, submitted by the Northwest Arctic Subsistence Regional Advisory Council (Council), requests closing Federal public lands in Units 23 and 26A to caribou and moose hunting by non-Federally qualified users from August 1 to September 30, 2021.

DISCUSSION

The proponent expresses concern about the late migration of caribou into and through Unit 23. The caribou migration has been delayed in recent years, and the proponent anticipates another delay in fall of 2021. In 2020, Unit 23 communities (with the exception of Noatak) were unable to conduct their fall caribou harvest, because caribou had not yet migrated into the area. The proponent states that winter harvests are uncertain, and the lack of fall harvest has resulted in empty freezers and stressed communities. Of particular concern to the proponent is the effect that transporters and non-local hunters may be having on caribou migration through both Unit 23 and Unit 26A contributing to its delay. The proponent hopes that a closure will reduce activity and traffic, creating an easier path for migrating caribou. The proponent is requesting a closure to moose hunting by non-Federally qualified users in Units 23 and 26A because of declining moose populations.

The applicable Federal regulations are found in 36 CFR 242.19(b) and 50 CFR 100.19(b) (Temporary Special Actions) and state that:

. . . After adequate notice and public hearing, the Board may temporarily close or open public lands for the taking of fish and wildlife for subsistence uses, or modify the requirements for subsistence take, or close public lands for the taking of fish and wildlife for nonsubsistence uses, or restrict take for nonsubsistence uses.

Existing Federal Regulation

Unit 23—Caribou

Unit 23—that portion which includes all drainages north and west of, and including, the Singoalik River drainage—5 caribou per day by State registration permit as follows:

Bulls may be harvested

July 1—June 30

Cows may be harvested. However, cows accompanied by calves may not be taken July 15—Oct. 14.

July 15—Apr. 30

Unit 23, remainder—5 caribou per day by State registration permit as follows:

Bulls may be harvested

July 1–June 30

Cows may be harvested. However, cows accompanied by calves may not be taken July 31–Oct. 14.

July 31–Mar. 31

Federal public lands within a 10-mile-wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage are closed to caribou hunting except by federally qualified subsistence users hunting under these regulations

Unit 23–Moose

Unit 23—that portion north and west of and including the Singoalik River drainage, and all lands draining into the Kukpuk and Ipewik Rivers—1 antlered bull. No person may take a calf.

July 1-Dec. 31.

Unit 23, remainder—1 antlered bull. No person may take a calf.

Aug. 1-Dec. 31.

Unit 26A–Caribou

Unit 26A—that portion of the Colville River drainage upstream from the Anaktuvuk River, and drainages of the Chukchi Sea south and west of, and including the Utukok River drainage—5 caribou per day by State registration permit as follows:

Calves may not be taken

Bulls may be harvested

July 1-Oct. 14.

Dec. 6-June 30.

Cows may be harvested; however, cows accompanied by calves may not be taken July 16-Oct. 15 July 16-Mar. 15.

Unit 26A remainder—5 caribou per day by State registration permit as follows:

Calves may not be taken

Bulls may be harvested July 1-Oct. 15.
Dec. 6-June 30.

Up to 3 cows per day may be harvested; however, cows accompanied by calves may not be taken July 16-Oct. 15 July 16-Mar. 15.

Unit 26A—Moose

Unit 26A—that portion of the Colville River drainage upstream from and including the Anaktuvuk River drainage—1 bull Aug. 1-Sep. 14

Unit 26A—that portion of the Colville River drainage upstream from and including the Anaktuvuk River drainage—1 moose; however, you may not take a calf or a cow accompanied by a calf Feb. 15-Apr. 15.

Unit 26A—that portion west of 156°00' W longitude excluding the Colville River drainage—1 moose, however, you may not take a calf or a cow accompanied by a calf July 1-Sep. 14.

Unit 26A, remainder—1 bull Aug. 1-Sep. 14.

Proposed Federal Regulation

Unit 23—Caribou

Unit 23—that portion which includes all drainages north and west of, and including, the Singoalik River drainage—5 caribou per day by State registration permit as follows:

Bulls may be harvested

July 1–June 30

Cows may be harvested. However, cows accompanied by calves may not be taken July 15–Oct. 14.

July 15–Apr. 30

Federal public lands are closed to caribou hunting from Aug. 1-Sep. 30, 2021 except by Federally qualified subsistence users hunting under these regulations.

Unit 23, remainder—5 caribou per day by State registration permit as follows:

Bulls may be harvested

July 1–June 30

Cows may be harvested. However, cows accompanied by calves may not be taken July 31–Oct. 14.

July 31–Mar. 31

Federal public lands within a 10-mile-wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage are closed to caribou hunting except by federally qualified subsistence users hunting under these regulations.

Federal public lands are closed to caribou hunting from Aug. 1-Sep. 30, 2021 except by Federally qualified subsistence users hunting under these regulations.

Unit 23–Moose

Unit 23—that portion north and west of and including the Singoalik River drainage, and all lands draining into the Kukpuk and Ipewik Rivers—1 antlered bull. No person may take a calf.

July 1–Dec. 31.

Federal public lands are closed to moose hunting from Aug. 1-Sep. 30, 2021 except by Federally qualified subsistence users hunting under these regulations.

Unit 23, remainder—1 antlered bull. No person may take a calf. Aug. 1-Dec. 31.

Federal public lands are closed to moose hunting from Aug. 1-Sep. 30, 2021 except by Federally qualified subsistence users hunting under these regulations.

Unit 26A—Caribou

Unit 26A—that portion of the Colville River drainage upstream from the Anaktuvuk River, and drainages of the Chukchi Sea south and west of, and including the Utukok River drainage—5 caribou per day by State registration permit as follows:

Calves may not be taken

Bulls may be harvested

July 1-Oct. 14.
Dec. 6-June 30.

Cows may be harvested; however, cows accompanied by calves may not be taken July 16-Oct. 15. July 16-Mar. 15.

Federal public lands are closed to caribou hunting from Aug. 1-Sep. 30, 2021 except by Federally qualified subsistence users hunting under these regulations.

Unit 26A remainder—5 caribou per day by State registration permit as follows:

Calves may not be taken

Bulls may be harvested

July 1-Oct. 15.
Dec. 6-June 30.

Up to 3 cows per day may be harvested; however, cows accompanied by calves may not be taken July 16-Oct. 15. July 16-Mar. 15.

Federal public lands are closed to caribou hunting from Aug. 1-Sep. 30, 2021 except by Federally qualified subsistence users hunting under these regulations.

Unit 26A—Moose

Unit 26A—that portion of the Colville River drainage upstream from and including the Anaktuvuk River drainage—1 bull Aug. 1-Sep. 14

Federal public lands are closed to moose hunting from Aug. 1-Sep. 30, 2021 except by Federally qualified subsistence users hunting under these regulations.

Unit 26A—that portion of the Colville River drainage upstream from and including the Anaktuvuk River drainage—1 moose; however, you may not take a calf or a cow accompanied by a calf Feb. 15-Apr. 15.

Federal public lands are closed to moose hunting from Aug. 1-Sep. 30, 2021 except by Federally qualified subsistence users hunting under these regulations.

Unit 26A—that portion west of 156°00' W longitude excluding the Colville River drainage—1 moose, however, you may not take a calf or a cow accompanied by a calf July 1-Sep. 14.

Federal public lands are closed to moose hunting from Aug. 1-Sep. 30, 2021 except by Federally qualified subsistence users hunting under these regulations.

Unit 26A, remainder—1 bull Aug. 1-Sep. 14.

Federal public lands are closed to moose hunting from Aug. 1-Sep. 30, 2021 except by Federally qualified subsistence users hunting under these regulations.

Existing State Regulation

Unit 23—Caribou

23, north of and including Singoalik River drainage	Residents—Five caribou per day by permit available online at http://hunt.alaska.gov or in person in Kotzebue, Utqiagvik, and at license vendors in Units 23 and 26A beginning June 22.	Bulls	RC907	No closed season
		Cows	RC907	Jul. 15-Apr. 30

	<i>Nonresidents—One bull</i>		<i>HT</i>	<i>Aug. 1-Sept. 30</i>
<i>23 remainder</i>	<i>Residents— Five caribou per day by permit available online at http://hunt.alaska.gov or in person in Kotzebue, Utqiagvik, and at license vendors in Units 23 and 26A beginning June 22.</i>	<i>Bulls</i>	<i>RC907</i>	<i>No closed season</i>
		<i>Cows</i>	<i>RC907</i>	<i>Sept. 1-Mar. 31</i>
	<i>Nonresidents—One bull</i>		<i>HT</i>	<i>Aug. 1-Sept. 30</i>

Unit 23—Moose

<i>23, north of and including Singoalik River drainage</i>	<i>Residents— One antlered bull by permit available in person at license vendors within Unit 23 villages June 1-July 15</i>		<i>RM880</i>	<i>July 1-Dec. 31</i>
	<i>or</i>			
	<i>Residents— One bull with 50-inch antlers or antlers with 4 or more brow tines on at least one side</i>		<i>HT</i>	<i>Sept. 1-Sept. 20</i>
	<i>Nonresidents</i>			<i>No open season</i>
<i>23 remainder</i>	<i>Residents— One antlered bull by permit available in person at license vendors within Unit 23 villages June 1-July 15</i>		<i>RM880</i>	<i>Aug. 1-Dec. 31</i>
	<i>or</i>			
	<i>Residents— One bull with 50-inch antlers or antlers with 4 or more brow tines on at least one side</i>		<i>HT</i>	<i>Sept. 1-Sept. 20</i>
	<i>Nonresidents</i>			<i>No open season</i>

Unit 26A—Caribou

<i>26A, the Colville River drainage upstream from the Anaktuvuk River, and drainages of the Chukchi Sea south and west of, and including</i>	<i>Residents—Five caribou per day by permit available online at http://hunt.alaska.gov or in person in Kotzebue, Utqiagvik, and at license vendors in Units 23 and 26A beginning June 22.</i>	<i>Bulls</i>	<i>RC907</i>	<i>July 1-Oct. 14</i>
				<i>Feb. 1-June 30</i>
		<i>Cows</i>	<i>RC907</i>	<i>Jul. 15-Apr. 30</i>
	<i>Nonresidents—One bull</i>		<i>HT</i>	<i>July 15-Sept. 30</i>

*the Utukok River
drainage*

<i>26A remainder</i>	<i>Residents—Five bulls per day by permit available online at http://hunt.alaska.gov or in person in Kotzebue, Utqiagvik, and at license vendors in Units 23 and 26A beginning June 22.</i>	<i>RC907</i>	<i>July 1-July 15 Mar. 16-Jun 30</i>
	<i>Residents—Five caribou per day, three of which may be cows; cows with calves may not be taken. Permits available online at http://hunt.alaska.gov or in person in Kotzebue, Utqiagvik, and at license vendors in Units 23 and 26A beginning June 22.</i>	<i>RC907</i>	<i>July 16-Oct. 15</i>
	<i>Residents—Three cows per day by permit available online at http://hunt.alaska.gov or in person in Kotzebue, Utqiagvik, and at license vendors in Units 23 and 26A beginning June 22.</i>	<i>RC907</i>	<i>Oct. 16-Dec. 31</i>
	<i>Residents—Five caribou per day, three of which may be cows. Permits available online at http://hunt.alaska.gov or in person in Kotzebue, Utqiagvik, and at license vendors in Units 23 and 26A beginning June 22.</i>	<i>RC907</i>	<i>Jan. 1-Mar. 15</i>
	<i>Nonresidents—One bull</i>	<i>HT</i>	<i>July 15-Sept. 30</i>

Unit 26A—Moose

<i>26A, west of 156° 00' W. long. excluding the Colville River drainage</i>	<i>Residents— One moose. However, a person may not take a calf or a cow accompanied by a calf</i>	<i>HT</i>	<i>July 1-Sept. 14</i>
	<i>Nonresidents</i>		<i>No open season</i>
<i>26A, the Colville River drainage above and including the Anaktuvuk River drainage</i>	<i>Residents— One bull</i>	<i>HT</i>	<i>Aug. 1-Sept. 30</i>
	<i>Nonresidents</i>		<i>No open season</i>
<i>26A remainder</i>	<i>Residents— One bull</i>	<i>HT</i>	<i>Aug. 1-Sept. 30</i>
	<i>Nonresidents</i>		<i>No open season</i>

Extent of Federal Public Lands

Unit 23

Federal public lands comprise approximately 71% of Unit 23 and consist of 40% National Park Service (NPS) managed lands, 22% Bureau of Land Management (BLM) managed lands, and 9% U.S. Fish and Wildlife Service (USFWS) managed lands.

Unit 26A

Federal public lands comprise approximately 73% of Unit 26A and consist of 66% BLM managed lands and 7% NPS managed lands.

Customary and Traditional Use Determinations

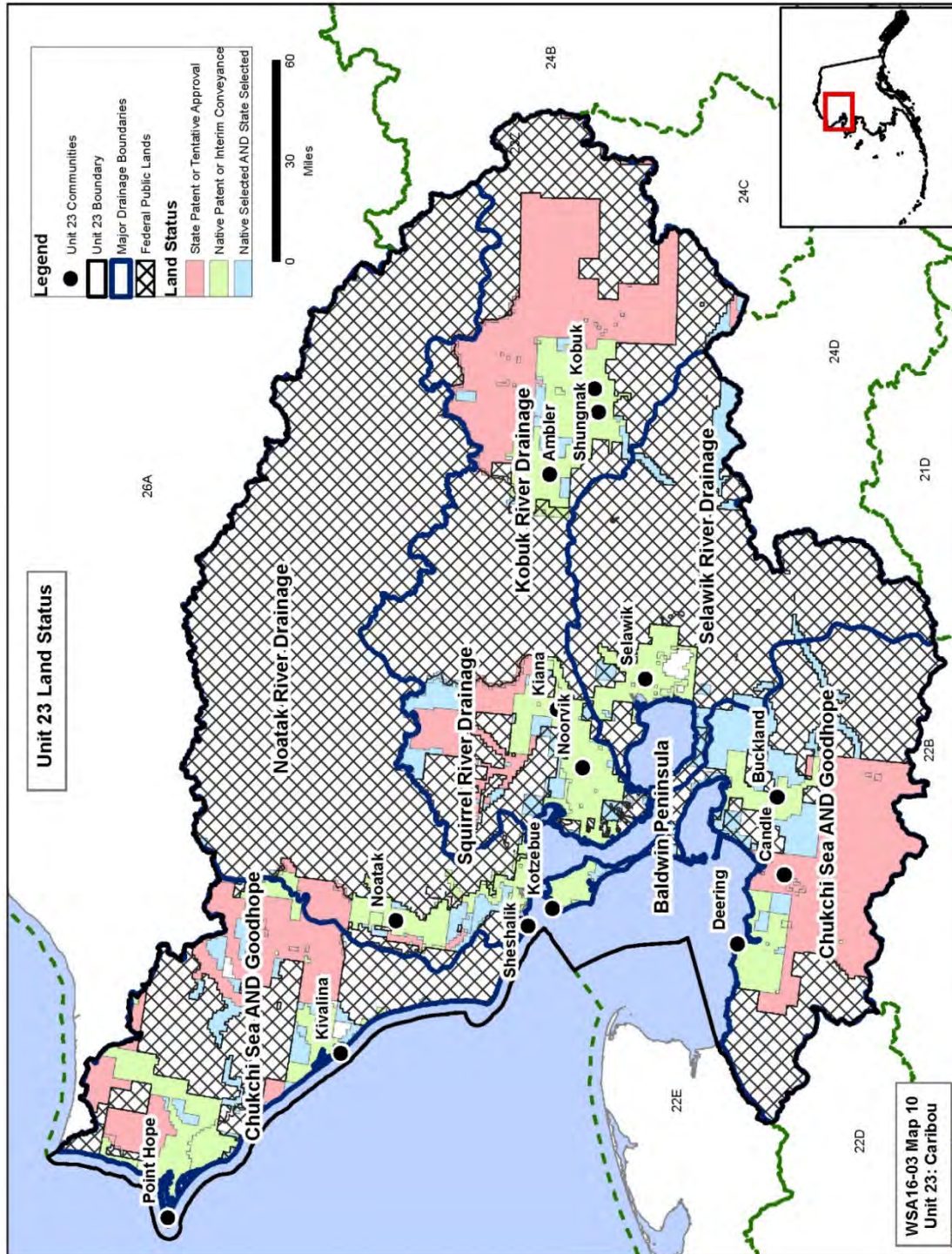
Residents of Units 21D west of the Koyukuk and Yukon Rivers, Galena, 22, 23, 24 including residents of Wiseman but not including other residents of the Dalton Highway Corridor Management Area, and 26A have a customary and traditional use determination for caribou in Unit 23 (**Map 2**).

Residents of Unit 23 have a customary and traditional use determination for moose in Unit 23.

Residents of Unit 26, Anaktuvuk Pass, and Point Hope have a customary and traditional use determination for caribou in Unit 26A.

Residents of Unit 26 (excluding the Prudhoe Bay-Deadhorse Industrial Complex), Point Hope, and Anaktuvuk Pass have a customary and traditional use determination for moose in Unit 26A.

Only resident zone communities can hunt in National Parks and Monuments. The resident zone communities for Kobuk Valley National Park and Cape Krusenstern National Monument include all NANA regional corporation communities (all Unit 23 communities except Point Hope). Resident zone communities for Gates of the Arctic National Park include Alatna, Allakaket, Ambler, Anaktuvuk Pass, Bettles/Evansville, Hughes, Kobuk, Nuiqsut, Shungnak, and Wiseman.



Map 1. Land status within Unit 23 as per data obtained from the Bureau of Land Management on July 27, 2016.

Regulatory History

Unit 23 and 26A Caribou

In 1990, the caribou hunting season in Unit 23 and 26A was open year round with a five caribou per day harvest limit and a restriction on the harvest of cows May 16-Jun. 30.

In 1994 the Federal Subsistence Board (Board) adopted Proposal P94-82 with modification to allow motor-driven boats and snowmachines to be used to take caribou in Unit 26 and to allow swimming caribou to be taken with a firearm using rimfire cartridges in Unit 26. (Swimming caribou could be taken with a firearm using rimfire cartridges in Unit 23 since 1990).

In 1995, the Board adopted Proposal P95-51 to increase the caribou harvest limit from five to 15 caribou per day in Unit 23 so that subsistence hunters could maximize their hunting efforts when caribou were available. The Board also adopted Proposal P95-64 to increase the harvest limit from 5 caribou per day to 10 caribou per day in Unit 26 to increase harvest opportunity for subsistence hunters.

In 1995 the Board also adopted Proposal P95-62 which closed the area east of the Killik River and south of the Colville River to caribou hunting by non-Federally qualified users from Aug.1-Sep. 30. This closure was enacted to prevent non-Federally qualified users from harvesting lead animals, which may have caused the migration to move away from the area that local subsistence users hunted in Unit 26A. The justification was to allow for caribou migrations to take their normal route into Anaktuvuk Pass.

In 1997, the Board adopted Proposal P97-66 with modification to provide a customary and traditional use determination for caribou in Unit 23 for rural residents of Unit 21D west of the Koyukuk and Yukon rivers, Galena, Units 22, 23, 24 including residents of Wiseman, but not other residents of the Dalton Highway Corridor Management Area and Unit 26A (**Map 2**).

In 2000, the Board adopted Proposal WP00-53 with modification, allowing the use of snowmachines to position a hunter to select individual caribou for harvest in Units 22 and 23. This was done to recognize a customary and traditional practice in the region.

In 2006, the Board adopted Proposal WP06-65 which opened the area east of the Killik River and south of the Colville River to non-Federally qualified users. The 1995 closure was lifted for several reasons. First, due to changes in land status, lands formerly managed by BLM were transferred to Alaska Native corporations or the State pursuant to the Alaska Native Claims Settlement Act or the Statehood Act, respectively. After these land transfers, only lands east of Anaktuvuk Pass were affected by the closure, making the closure less effective. Second, the population was at a point where it could support both subsistence and non-subsistence uses.

In 2013, an aerial photo census indicated significant declines in the Teshekpuk Caribou Herd (TCH), WACH, and possibly the Central Arctic Caribou Herd (CACH) populations (Caribou Trails 2014). In response, the Alaska Board of Game (BOG) adopted modified Proposal 202 (RC76) in March 2015 to

reduce harvest opportunities for both Alaska residents and nonresidents within the range of the WACH and the TCH. These regulation changes – which included lowering bag limits for nonresidents from two caribou to one bull, reductions in bull and cow season lengths, the establishment of new hunt areas, and prohibiting calf harvest – were adopted to slow or reverse the population decline. The regulatory changes took effect on July 1, 2015.

In 2015, four special actions, WSA15-03/04/05/06, requesting changes to caribou regulations in Units 23, 24, and 26, were submitted by the North Slope Council and approved with modification by the Board, effective July 1, 2015. Temporary Special Action WSA15-03 requested designation of a new hunt area for caribou in the northwest corner of Unit 23 where the harvest limit would be reduced from 15 to five caribou per day, the harvest season would be shortened for bulls and cows, and the harvest of calves would be prohibited. The Board did not establish a new hunt area, instead applying the restrictions to all of Unit 23 and also prohibited the harvest of cows with calves. These State and Federal regulatory changes were the first time that harvest restrictions had been implemented for the WACH in over 30 years.

Temporary Special Action WSA15-05 requested that the bull caribou harvest limit in Unit 26A be reduced from 10 caribou per day to 5 caribou per day, the cow harvest limit be reduced to 3 per day, the harvest seasons for bulls and cows be reduced, and the take of calves and cows with calves be prohibited. Compared to the new State caribou regulations, it requested 3 additional weeks to the bull harvest season (Dec. 6-31). These special actions took effect on July 1, 2015.

In 2015, the Northwest Arctic Council submitted a temporary special action request (WSA16-01) to close caribou hunting on Federal public lands in Unit 23 to non-Federally qualified users for the 2016/17 regulatory year. The Council stated that their request was necessary for conservation purposes but also needed because nonlocal hunting activities were negatively affecting subsistence harvests. In April 2016, the Board approved WSA16-01, basing its decision on the strong support of the Northwest Arctic and North Slope Councils, public testimony in favor of the request, as well as concerns over conservation and continuation of subsistence uses.

Six proposals (WP16-37, WP16-48, WP16-49/52, WP16-61, and WP16-63) concerning caribou regulations in Units 23 and 26A were submitted to the Board for the 2016-2018 wildlife regulatory cycle. The Board adopted WP16-48 with modification to allow the positioning of a caribou, wolf, or wolverine for harvest in Unit 23 on BLM lands only. Proposal WP16-37 requested that Federal caribou regulations mirror the new State regulations across the ranges of the WACH and TCH (Units 21D, 22, 23, 24, 26A, and 26B). The Board adopted Proposal WP16-37 with modification to reduce the harvest limit to five caribou per day, restrict bull harvest during rut and cow harvest around calving, prohibit the harvest of calves and the harvest of cows with calves before weaning (mid-October), and to create a new hunt area in the northwest corner of Unit 23. The Board took no action on the remaining proposals (WP16-49/52, and WP16-61, and WP16-63) due to action taken on WP16-37.

In June 2016, the State submitted a special action request (WSA16-03) to reopen caribou hunting on Federal public lands in Unit 23 to non-Federally qualified users, providing new biological information

(e.g. calf recruitment, weight, body condition) on the WACH. The State specified that there was no biological reason for the closure and that it could increase user conflicts. In January 2017, the Board rejected WSA16-03 due to the position of all four affected Councils (Northwest Arctic, North Slope, Seward Peninsula, and Western Interior) as well as public testimony and Tribal consultation comments opposing the request. Additionally, the Board found the new information provided by the State to be insufficient to rescind the closure.

In January 2017, the BOG adopted Proposal 2, requiring registration permits for residents hunting caribou within the range of the Western Arctic and Teshekpuk herds in Units 21, 23, 24, and 26 (a similar proposal was passed for Unit 22 in 2016). The Alaska Department of Fish and Game (ADF&G) submitted the proposal in order to better monitor harvest and improve management flexibility. The BOG also rejected Proposal 3 (deferred Proposal 85 from 2016), which would have removed the caribou harvest ticket and report exception for residents living north of the Yukon River in Units 23 and 26A). Also in January 2017, the BOG rejected Proposal 45, which proposed requiring big game hunting camps to be spaced at least three miles apart along the Noatak, Agashashok, Eli, and Squirrel Rivers. The proposal failed as it would be difficult to enforce.

In March 2017, the Northwest Arctic and North Slope Councils submitted temporary special action requests (WSA17-03 and -04, respectively) to close caribou hunting on Federal public lands in Unit 23 and in Units 26A and 26B, respectively, to non-Federally qualified users for the 2017/18 regulatory year. Both Councils stated that the intent of the proposed closures was to ensure subsistence use in the 2017/18 regulatory year, to protect declining caribou populations, and to reduce user conflicts. The Board voted to approve WSA17-03 with modification to close all Federal public lands within a 10 mile wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage, to caribou hunting except by Federally qualified subsistence users for the 2017/18 regulatory year. The Board considered the modification a reasonable compromise for all users, and that closure of the specified area was warranted in order to continue subsistence use. The Board rejected WSA17-04 due to recent changes to State regulations that should reduce caribou harvest.

In April 2018, the Board adopted Proposals WP18-46 with modification and WP18-48 (effective July 1, 2018). Proposal WP18-46 requested closing caribou hunting on Federal public lands in Unit 23 to non-Federally qualified users (similar to WSA16-01 and WSA17-03). The Board adopted WP18-46 with the same modification as WSA17-03 (see above) as the Northwest Arctic, Western Interior, and Seward Peninsula Councils as well as the village of Noatak supported this modification and viewed the targeted closure as effectively addressing user conflicts and the continuation of subsistence uses. The Board also adopted WP18-48 to require State registration permits for caribou hunting in Units 22, 23, and 26A to improve harvest reporting and herd management, and to align with State regulations.

Also in 2018, the Board considered proposal WP18-57, which requested that caribou hunting on Federal public lands in Units 26A and 26B be closed to non-Federally qualified users. This proposal was submitted by the North Slope Council to ensure continuation of subsistence, protect the caribou

herds, and reduce user conflicts. The Board rejected WP18-57, choosing to allow time to evaluate the effects of recently implemented harvest restrictions. In addition, the Board expressed concern that closing Federal lands would shift users to State lands, increasing conflict.

In January 2020, the BOG adopted Proposal 20 to open a year-round resident season for caribou bull harvest in Unit 23 under State regulations. The BOG also adopted Proposal 24 as amended to remove the restriction on caribou calf harvest in Units 22, 23, and 26A. Proposal 28, which would have eliminated the caribou registration permit in Units 23 and 26A for North Slope resident hunters, was not adopted by the BOG, due to an ongoing need for harvest data.

In April 2020, the Board adopted Proposal WP20-46 to open a year-round bull season and permit calf harvest for caribou in Unit 23. Creating a year-round season for bulls was intended to allow for harvest of bulls when caribou migration had been delayed, alleviating harvest pressure on cows. The prohibition on calf harvest was lifted in order to permit taking of calves that had been orphaned or injured.

In summary, since 2013, restrictions have been placed on caribou hunting in Units 23 and 26A under both State and Federal subsistence regulations. Recent relevant changes include:

Federal Subsistence regulatory changes:

- Reduction in cow and bull season length in 26A (2015)
- Reduction of caribou harvest limit to 5 per day in both Units 23 (2015) and 26A (2016)
- Requirement for FQSUs hunting caribou under Federal regulations to have a State registration permit (RC907) in both Units 23 and 26A in order to improve monitoring (2018)
- Closure of limited areas in Unit 23 centered on the Noatak River to caribou hunting by non-Federally qualified users in order to reduce user conflict (2017)
- Opening a year-round bull season in Unit 23 to allow for harvest of younger bulls when caribou migration has been delayed, and to alleviate harvest pressure on cows (2020)

State regulatory changes:

- Reduction in cow and bull season length in both Units 23 and 26A (2013)
- Reduction of caribou harvest limit to 5 caribou per day in both Units 23 and 26A (2015)
- Requirement for registration permit under State regulations throughout the range of the WACH and TCH (2017)
- Opening a year-round harvest for bulls in Unit 23 (2020)

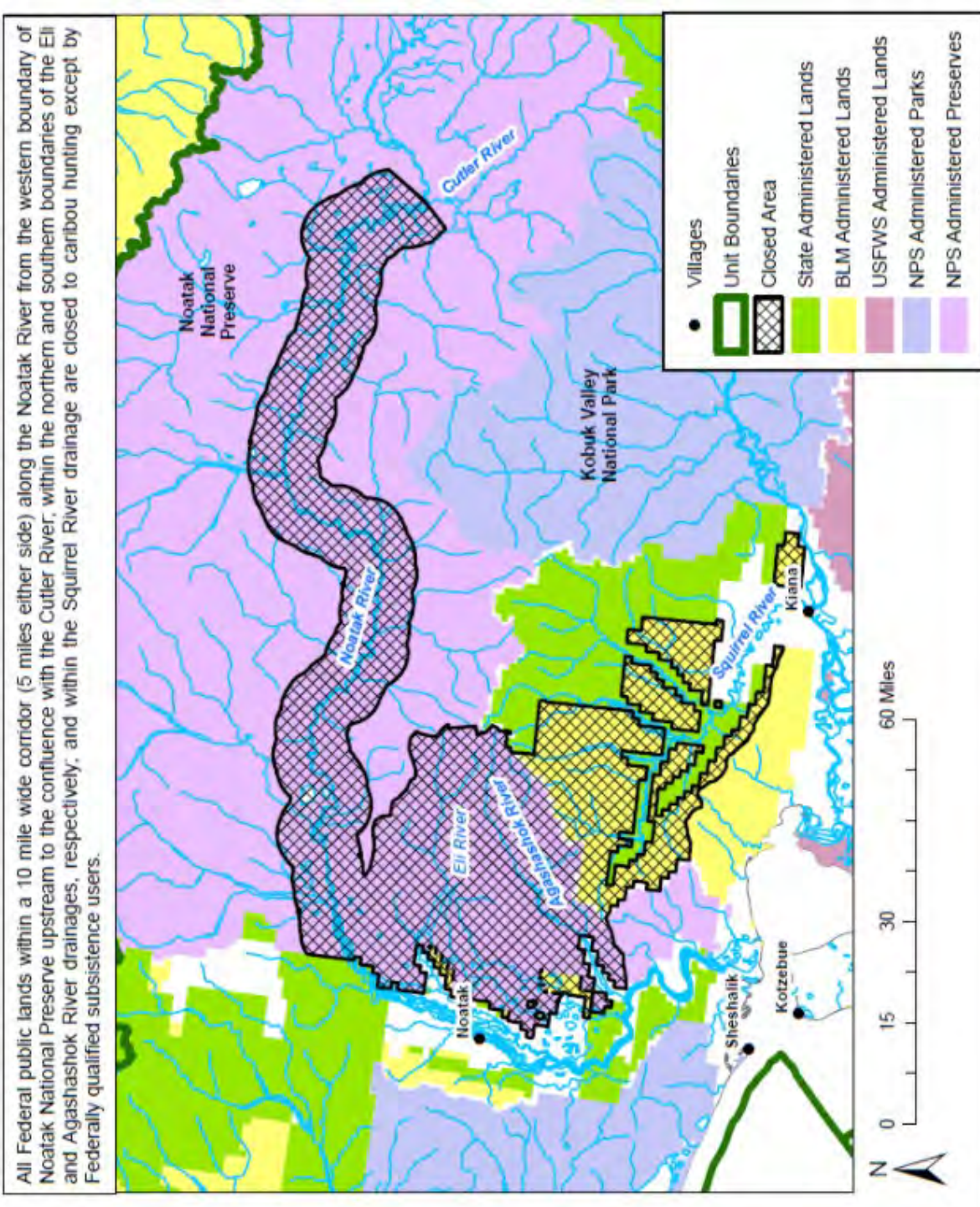
A non-resident caribou hunt remains open in both Units 23 and 26A under State regulations, although the bag limits for nonresidents was reduced from two caribou to one bull in 2013. The results of closure requests for caribou in Units 23 and 26 made to the Board since 2016 are documented in **Table 1** and **Table 2**, below.

Table 1. History and outcomes of closure requests for caribou on Federal public lands in Unit 23 since 2016. All three requests were submitted by the Northwest Arctic Council. FQSUs = Federally Qualified Subsistence Users; NFQUs = non-Federally qualified users.

Proposal or Special Action Request	Proposed Action	Proponent Rationale	Board Action
WSA16-01	Close Unit 23 to NFQUs for 2016/2017 regulatory year	Conservation, impact of nonlocal hunting	Approved
WSA17-03	Close Unit 23 to NFQUs for 2017/18 regulatory year	Ensure subsistence use, protect declining caribou, reduce conflict	Approved with geographical limitation/modification (Noatak, Eli, Agashashok, and Squirrel rivers closures)
WP18-46	Close Unit 23 to NFQUs	Ensure subsistence use, protect declining caribou, reduce conflict	Approved with geographical limitation/modification (Noatak, Eli, Agashashok, and Squirrel rivers closures); closure is still in place

Table 2. History and outcomes of recent closure requests for caribou on Federal public lands in Unit 26A since 2017. Both requests were submitted by the North Slope Council. NFQUs = non-Federally qualified users.

Proposal or Special Action Request	Proposed Action	Proponent Rationale	Board Action
WSA17-04	Close 26A (and 26B) to NFQUs	Continuation of subsistence, protect declining caribou populations, and reduce user conflicts	Reject
WP18-57	Close 26A (and 26B) to NFQUs	Continuation of subsistence, protect declining caribou populations, and reduce user conflicts	Reject



Unit 23 Moose

In 1994, the Federal subsistence moose hunt in Unit 23 consisted of three hunt areas: Unit 23 north and west of and including the Singoalik River drainage, and all lands draining into the Kukpuk and Ipewik rivers (Unit 23 NW), Unit 23 within the Noatak River drainage, and Unit 23 remainder. The harvest limit in each hunt area was one moose with a prohibition on the take of cows accompanied by calves. The season in the Unit 23 NW hunt area was Jul. 1-Mar. 31; the season in the Noatak River drainage hunt area was Aug. 1-Sep. 15 and Oct. 1-Mar. 31, although antlerless moose could only be taken Nov. 1-Mar. 31; the season in Unit 23 remainder was Aug. 1-Mar. 31.

State moose regulations became more restrictive in 2003 when BOG approved amended Proposal 15 (effective starting with the 2004/05 regulatory year), making it more difficult for nonlocal residents to hunt moose, creating four registration hunts in the unit with permits (RM880) only available in person at licensed vendors in Unit 23 villages from Jun. 1-Jul. 15. This early availability of permits occurred before most of the seasons opened, requiring nonlocal hunters to make a special trip to a Unit 23 village in order to receive a permit. These permits also allowed for better tracking of harvest.

In 2005, Proposal WP05-18, submitted by the Northwest Arctic Council, requested prohibiting the harvest of calves, shortening the season for moose in most of Unit 23 from Jul. 1 (or Aug. 1)-Mar. 31 to Aug. 1-Dec. 31, combining the Noatak drainage and remainder hunt areas, and allowing antlerless moose to be harvested only in November and December. The Board tabled this proposal in response to a Northwest Arctic Council recommendation to provide time for residents of local villages to review the proposal and provide their input due to differing viewpoints related to the moose population and local subsistence needs.

In 2006, Proposal WP06-54 was submitted by the Council to replace WP05-18, requesting that the harvest of moose calves be prohibited and that the two week seasonal closure (Sep. 16-30) in the Noatak River drainage hunt area be rescinded. The Board adopted WP06-54 under its consensus agenda.

In January 2017, the BOG adopted amended Proposal 36, changing the antlerless moose season in Unit 23 to one antlered bull due to conservation concerns. Of note, nonresident drawing permits had been reduced from 50 permits in 2016/17 to 34 permits in 2017/18 and, later in 2017, ADF&G cancelled the 2017/18 nonresident moose hunt in Unit 23, voiding all issued permits (ADF&G 2017a, 2017b, Saito 2017 pers. comm.).

In April 2017, the Board rejected Temporary Special Action WSA17-02, which requested that Federal public lands in Unit 23 be closed to moose harvest by non-Federally qualified users during the 2017/18 regulatory year. The Board stated that they wanted to allow time to assess the effects of recent State actions prior to considering a unit-wide closure.

During the 2018/20 regulatory cycle, the Council (WP18-41) and Louis Cusack (WP18-42) submitted similar proposals requesting changes to the Unit 23 moose season, including shortening the cow and overall moose seasons and aligning Federal and State hunt areas. Specifically, WP18-41 requested

combining the Noatak River drainage and remainder hunt areas, changing the closing date of the bull season from Mar. 31-Dec.31, and restricting cow harvest to Nov. 1–Dec. 31. The Board adopted Proposal WP18-41 to protect the declining moose population and took no action on WP18-42.

In 2018, Emergency Special Action WSA18-04, which requested closing the cow moose season in Unit 23 to Federally qualified subsistence users for the 2018/2019 regulatory year, was submitted to the Board. The Board approved with modification to close the Federal winter cow moose season and close moose hunting in Unit 23 except by Federally qualified subsistence users for the 2018/19 regulatory year. Board justification was based on declining moose population and low calf: cow ratios; the action was found to be necessary to maintain a healthy moose population.

In 2018, ADF&G also closed the non-resident moose season in Unit 23 and planned to continue the nonresident closure until moose populations rebound (NWARAC 2018a).

In 2019, the Northwest Arctic Council submitted a wildlife special action request (WSA19-04) to close the cow moose harvest on Federal public lands in Unit 23 for the 2019/20 regulatory year to Federally qualified subsistence users in order to ensure that the cow harvest in the unit remained closed until the Board could take permanent action through a regulatory proposal. The Council justification for closing to Federally qualified subsistence users— rather than non-Federally qualified subsistence users—was to avoid concentrating non-local hunters around communities. The Board approved WSA19-04 with modification to also delegate authority to the in-season manager to close moose hunting on Federal public lands in Unit 23 to non-Federally qualified users during the 2019/20 regulatory year, if warranted.

In 2020, the Northwest Arctic Council submitted Proposal WP20-47, which requested closure of the cow moose season in Unit 23 to Federally qualified subsistence users and requiring the use of a State registration permit (RM880) by Federally qualified subsistence users under Federal regulations. The RM880 permit can only be obtained within Unit 23 from June 1 to July 15. The Board adopted WP20-47 with modification to change the Unit 23 moose harvest limit from one moose to one antlered bull, closing the cow moose season because of conservation concerns. The Board did not adopt the State registration permit requirement because it would burden Federally qualified subsistence users.

In summary, changes implemented in both State and Federal subsistence regulations since 2017 have placed restrictions on moose hunting in Unit 23:

Federal Subsistence regulatory changes:

- Combined Noatak River drainage and remainder hunt areas, effectively reducing harvest (2018)
- Shortened bull and cow seasons (2018)
- Closure to non-Federally qualified subsistence users (2018/2019 regulatory year only)
- Closure of cow moose season for Federally qualified subsistence users for the 2019/2020 regulatory year
- Changed the harvest limit to one antlered bull (2020)

State regulatory changes:

- Changed antlerless moose season to one antlered bull (2017)
- Closure of the non-resident moose season (2018)

The results of closure requests for moose in Units 23 made to the Board since 2017 are documented in **Table 3**, below.

Table 3. Recent history of closure requests for moose on Federal public lands in Unit 23. FQSUs = Federally Qualified Subsistence Users; NFQUs = non-Federally qualified users.

Proposal	Proposed Action	Proponent Rationale	Board Action
WSA17-02 (Northwest Arctic Council)	Close to NFQUs for 2017/18 regulatory year	Decline in moose population	Reject
WSA18-04 (Louis Cusack)	Close the cow moose season to FQSUs for the 2018/2019 regulatory year	Decline in moose population	Approve with modification to close the Federal winter cow moose season and close moose hunting in Unit 23 except by Federally qualified subsistence users for the 2018/19 regulatory year.
WSA19-04 (Northwest Arctic Council)	Close the cow moose harvest to FQSUs users for the 2019/20 regulatory year	Decline in moose population; to ensure that the cow harvest in the unit remained closed until the Board could take permanent action through a regulatory proposal. Closure to NFQUs may concentrate users around communities.	Approved with modification to also delegate authority to the in-season manager to close moose hunting in Unit 23 to non-Federally qualified users during the 2019/20 regulatory year, if warranted.
WP20-47 (Northwest Arctic Council)	Close the cow moose harvest to FQSUs	Decline in moose population	Adopted with modification to change the Unit 23 moose harvest limit from one moose to one antlered bull, closing the cow moose season because of conservation concerns.

Unit 26A Moose

A 75% moose population decline from 1991 to 1996 prompted season restrictions in State regulations in 1995 and in both the Federal and State moose harvest regulations in 1996. Prior and leading up to the May 1996 Federal Subsistence Board action, the moose population in Unit 26A—the Colville River drainage in particular—was in serious decline. To address this issue, the Board adopted the State's aircraft use restrictions for Unit 26A in 1994.

In 1996, the Board adopted regulatory proposal P96-66, which closed moose hunting on all Federal public lands in Unit 26A except in that portion of the Colville River drainage downstream from the mouth of the Anaktuvuk River due to population declines. At that time, the only segment of the population that was considered stable was the small population of moose downstream from the mouth of Anaktuvuk River. That area remained open only to Federally qualified subsistence users from Aug. 1–Aug. 31, and the harvest was limited to 1 moose per hunter, as long as it was not a cow accompanied by a calf. The Board's justification for adopting the closure to non-Federally qualified users to harvest moose was to address conservation concerns.

In 2002, the Board adopted Proposal WP02-45 that expanded the Federal subsistence moose harvest area in Unit 26A from that portion of the Colville River drainage downstream from the mouth of the Anaktuvuk River to that portion of the Colville River drainage downstream from and including the Chandler River and also extended the season by two weeks, from Aug. 1–Aug. 31 to Aug. 1–Sep. 14. The Board's rationale for adopting Proposal WP02-45 included: population increases since 1998, especially in the core areas of the Colville River drainage; spreading out the harvest pressure to other areas with higher moose density; aligning State and Federal regulations; and providing additional subsistence hunting opportunity later in the fall when the temperatures are colder, which could reduce the chance of meat spoilage.

In 2004, the Board adopted Proposal WP04-85 which established the eastern boundary of the proposed harvest area in Unit 26A to 156°00'W longitude to match the new State regulation and also aligned the season and harvest limits with those made by the BOG.

In 2005, the Office of Subsistence Management conducted closure review WCR05-23 and recommended that the closure of that portion of the Colville River drainage downstream from and including the Chandler River to non-Federally qualified moose hunters should continue to remain in effect. However, when WCR05-23 was discussed during the North Slope Council's fall 2005 meeting, new winter moose census information provided by the ADF&G suggested the closure was no longer necessary since the moose population had reached at least 1,000 animals. Although the Council recommended maintaining the closure to nonsubsistence uses, the new information indicated such a closure may no longer be needed to conserve a healthy moose population.

In May 2006, the Board adopted Proposal WP06-66, which resulted in reopening remaining Federal public lands on that portion of the Colville River drainage downstream from and including the Chandler River to hunting by all Alaska residents.

In 2007, the BOG opened a non-resident drawing hunt for moose in Unit 26A. In 2014, the BOG extended the resident bull moose season in Unit 26A from Aug. 1-Sep. 14 to Aug. 1 to Sep. 30 in order to accommodate a shifting moose season in two hunt areas: the Colville River drainage above and including the Anaktuvuk River drainage, and in Unit 26A Remainder. The BOG also aligned the Unit 26A Controlled Use Area dates with this season at this time. However, later in 2014, the season was reduced to its original length and the non-resident drawing hunt closed through Emergency Order due to moose population decline. There has not been a non-resident moose hunt in Unit 26A since 2013.

Table 4. Summary of moose and caribou hunts in the months of August and September in Units 23 and 26A. Y = Yes; N = No; FQSUs = Federally qualified subsistence users; NFQUs = non-Federally qualified users.

	FQSUs (rural residents with C&T) hunting under Federal regulations	Residents of Alaska (includes both FQSUs and NFQUs) hunting under State regulations	Nonresidents of Alaska (NFQUs) hunting under State regulations
Unit 23 caribou	Y	Y	Y
Unit 23 moose	Y	Y	N
Unit 26A caribou	Y	Y	Y
Unit 26A moose	Y, but hunt ends Sep. 14 everywhere except Nuiqsut area	Y, but ends Sep. 14 in Western portion of the Unit	N

Controlled Use Areas in Unit 23

Noatak Controlled Use Area

In 1988, the Traditional Council of Noatak submitted a proposal to the BOG to create the Noatak Controlled Use Area (CUA) in order to restrict the use of aircraft in any manner for big game hunting Aug. 15-Sep. 20 due to user conflicts (Fall 1990). The proposed Controlled Use Area extended five miles on either side of the Noatak River, from the mouth of the Eli River upstream to the mouth of the Nimiuktuk River, including the north side of Kivivik Creek (ADF&G 1988). The BOG adopted the proposal with modification to close a much smaller area extending from the Kugururok River to Sapun Creek from Aug. 20-Sep. 20.

The Controlled Use Area was expanded in 1994 and modified in 2017 (Betchkal 2015, Halas 2015, ADF&G 2017a). From 1994-2016, the Noatak Controlled Use Area consisted of a 10-mile wide corridor (5 miles either side) along the Noatak River from its mouth to Sapun Creek with approximately 80 miles of the Controlled Use Area within Noatak National Preserve (NP) (**Map 5**, Betchkal 2015). The closure dates from 1994-2009 were Aug. 25-Sep. 15. In 2009 (effective 2010), the

BOG adopted Proposal 22 to expand the closure dates to Aug. 15-Sep. 30 in response to the timing of caribou migration becoming less predictable (ADF&G 2009). During the 2016/17 BOG regulatory cycle, the Noatak/Kivalina & Kotzebue AC proposed (Proposal 44) extending the upriver boundary of the Noatak Controlled Use Area to the Cutler River, citing increased user conflicts as their rationale (ADF&G 2017b). In January 2017, the BOG approved amended Proposal 44 to shift the boundaries of the Noatak Controlled Use Area to start at the mouth of the Agashashok River and end at the mouth of the Nimiuktuk River with approximately 105 miles within Noatak NP (**Map 5**, ADF&G 2017a).

In 1990, the Noatak Controlled Use Area was adopted under Federal regulations. In 1995, the Board adopted Proposal P95-50 to expand the time period and area of the Controlled Use Area to Aug. 25-Sep. 15 and the mouth of the Noatak River upstream to the mouth of Sapun Creek, respectively, which aligned with State regulations as they existed at that time.

In 2008, Proposals WP08-50 and 51 requested modifications to the Noatak Controlled Use Area dates. These proposals were submitted in response to caribou migration occurring later in the season, to improve caribou harvest for subsistence users, and to decrease conflicts between local and nonlocal hunters. The Board deferred these proposals to the next regulatory cycle. In 2010, Proposals WP10-82, 83, and 85 requested similar date changes. The Board adopted WP10-85 to expand the time period during which aircraft are restricted in the Noatak Controlled Use Area to Aug. 15-Sep. 30, which aligned with the current State regulations (**Table 5**).

[Selawik National Wildlife Refuge: Area Not Authorized for Commercial Transporters and Guides](#)

In 2011, Selawik National Wildlife Refuge (NWR) designated refuge lands in the northwest portion of the refuge as closed to big game hunting by commercial guides and transporters through their comprehensive conservation plan (**Table 5**, FWS 2011, 2014). These refuge lands are intermingled with private lands near the villages of Noorvik and Selawik (**Map 5**). The purpose of this closure was to minimize trespass on private lands and to reduce user conflicts (FWS 2011).

At the winter 2021 meeting of the Northwest Arctic Council, a representative of Selawik National Refuge reported that only two hunters were brought into the refuge by air taxis and transporters in 2021. Because caribou are no longer abundant in Selawik National Wildlife Refuge in September, and because the non-resident moose season is already closed in Unit 23, this area no longer receives many fly-in hunters (NWARAC 2021).

[Noatak National Preserve Delayed Entry Controlled Use Area](#)

In 2012, the NPS established a Special Commercial Use Area or “delayed entry zone” in the western portion of the Noatak NP (**Table 5**, Halas 2015, Fix and Ackerman 2015). Within this zone, transporters can only transport nonlocal caribou hunters after a pre-determined date unless otherwise specified by the Western Arctic Parklands (WEAR) superintendent in consultation with commercial operators, other agencies and local villages (Halas 2015). In 2020, the delayed entry date was changed from Sep. 15-Sep. 22 (NPS 2020) in response to requests from the Cape Krusenstern National

Monument and Kobuk Valley National Park SRCs and the Native Village of Noatak (Atkinson 2021, pers. comm.). The purpose of this zone is to allow a sufficient number of caribou to cross the Noatak River and establish migration routes, to limit interactions between local and nonlocal hunters, and to allow local hunters the first opportunity to harvest caribou in that area (**Map 5**, FWS 2014, Halas 2015).

Aircraft in National Parks and Monuments

National parks and monuments in Unit 23 include Cape Krusenstern National Monument, Kobuk Valley National Park, and Gates of the Arctic National Park. The use of aircraft for access to or from lands and waters within a national park or monument for purposes of taking fish or wildlife within the national park or monument is prohibited, except in the case of exempted communities and individuals for the purpose of subsistence access. However, aircraft are allowed to access lands and waters in national parks and monuments for the purposes of engaging in any activity allowed by law other than the taking of fish and wildlife.

Controlled Use Areas in Unit 26A

Anaktuvuk Pass Controlled Use Area

The BOG established the Anaktuvuk Pass Controlled Use Area in 2005 to reduce user conflicts during the caribou hunting season and to provide more opportunity for Anaktuvuk Pass residents to harvest caribou. The Anaktuvuk Controlled Use Area includes a portion of Unit 26A. This area is closed to the use of aircraft for hunting caribou, including the transportation of caribou hunters, their hunting gear, or parts of caribou from Aug. 15-Oct. 15; however, this provision does not apply to the transportation of caribou hunters, their hunting gear, or parts of caribou by aircraft between publicly owned airports (**Table 5**).

Unit 26A Controlled Use Area

Under State regulations, the Unit 26A Controlled Use Area (**Map 4**) is closed to the use of aircraft for hunting moose, including the transportation of moose hunters, their hunting gear, or parts of moose from Jul. 1-Sep. 30 and from Jan.-Mar. 31 (**Table 5**). This provision does not apply to the transportation of moose hunters, their hunting gear, or parts of moose by aircraft between publicly owned airports.



Map 4. Unit 26A Controlled Use Area.

Table 5. Comparative summary of Controlled Use Areas in Units 23 and 26A, with aircraft closure periods noted.

Controlled Use Area	Time Period	Aircraft closure
Unit 23		
Noatak Controlled Use Area (State and Federal regulations)	Aug. 15-Sep. 30	To transportation of hunters or harvested species .
Selawik National Wildlife Refuge Area Not Authorized for Commercial Transporters and Guides	Year-round	To big game hunting by commercial guides and transporters
Noatak National Preserve Delayed Entry Controlled Use Area (National Park Service regulations)	Until after Sep. 22	To transportation of nonlocal caribou hunters
Unit 26A		
Anaktuvuk Pass Controlled Use Area (State regulations)	Aug. 15-Oct. 15	To use of aircraft for hunting caribou , including the transportation of caribou hunters, their hunting gear, or parts of caribou.

Controlled Use Area	Time Period	Aircraft closure
Unit 26A Controlled Use Area (State regulations)	Jul. 1-Sep. 30, Jan. 1-Mar. 31	To the use of aircraft for hunting moose , including the transportation of moose hunters, their hunting gear, or parts of moose.

Current Events

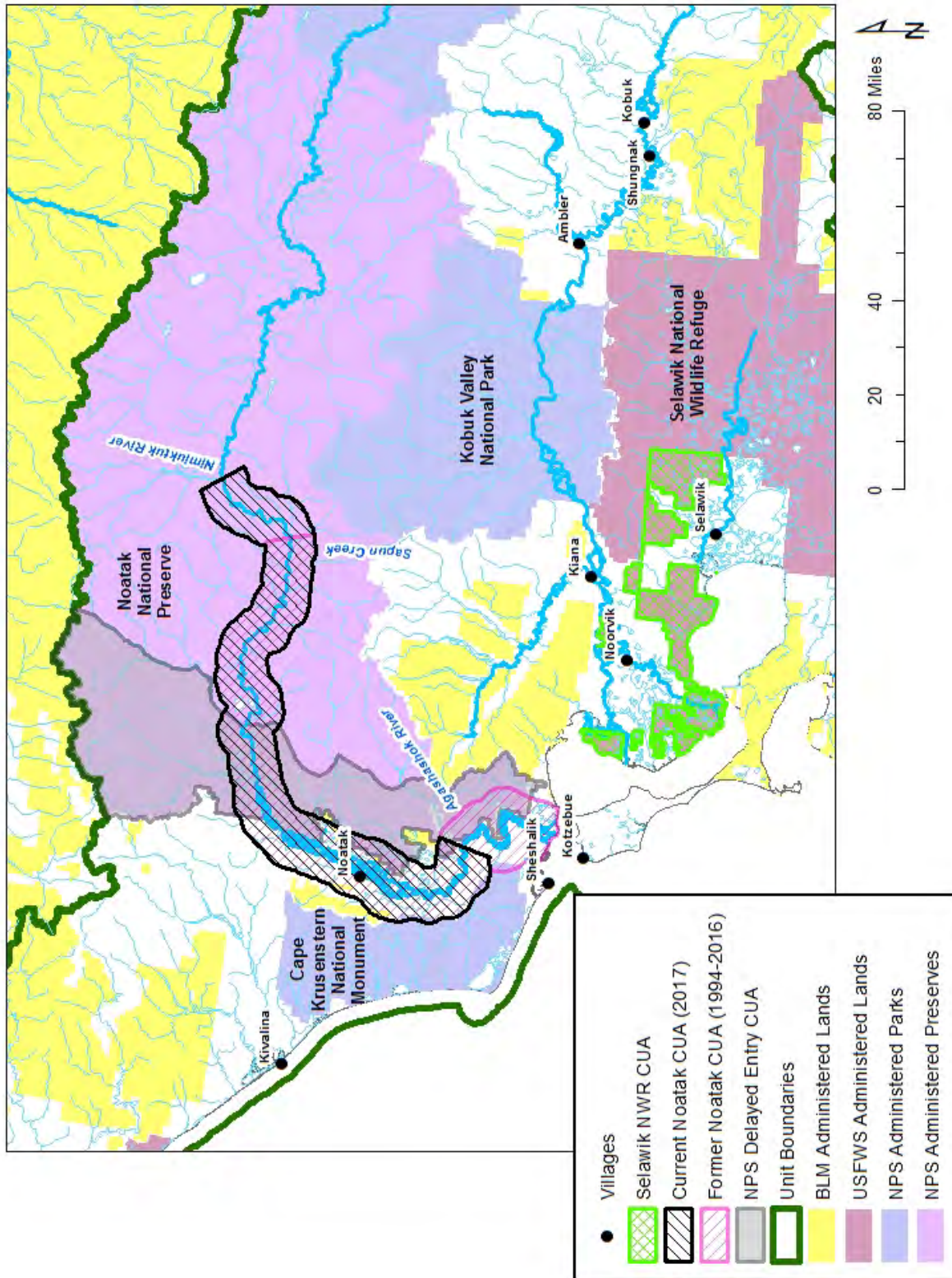
Tribal and ANCSA Corporation Consultations

Tribal and Alaska Native Claims Settlement Act (ANCSA) corporation consultations were held on April 28 and May 26, 2021 by teleconference. Representatives of Alaska Native Corporations and tribes in the region expressed strong support for the closure in order to allow caribou migrations to return to their previous, typical route, and to support communities during a time when food security has been affected by Covid-19 and high fuel prices. Caribou have provided vital sustenance for Iñupiaq people in the Northwest Arctic since “time immemorial,” and the current lack of caribou during the traditional time of harvest has created great hardship for residents.

Participants clarified that they are concerned with the effects of low-flying, small aircraft on caribou, rather than the effects of commercial flights. When non-local hunters are dropped off right in front of caribou, this can create problems for subsistence hunters. One participant with experience as a reindeer herder and caribou hunter described the effects of human-caribou interaction as capable of diverting migration pathways. Disruption in migration was dated to 2017 by one tribal representative from the lower Kobuk River region. Caribou are not only coming later; they are also less abundant in the region overall. Participants expressed the need for scientists to share caribou tracking data with communities. One participant explained that when the caribou migration is delayed, transportation to harvest becomes difficult. The cost of going further to get caribou is often prohibitive due to the extremely high fuel prices in the region. Additionally, when the migration is delayed, locals are forced to hunt more cows, rather than bulls.

When caribou are not available, the few taken are given to elders. When non-Federally qualified users share meat with locals, this is appreciated, but does not replace successful subsistence activities, which encompass traditional practices and transmission of culture. Moose are not traditionally the favored subsistence food in Northwest Arctic and North Slope, and so cannot substitute adequately for lost caribou.

The fact that relatives living outside of the region would not be able to hunt on Federal public lands during a closure to non-Federally qualified users was discussed, but it was clarified that these individuals would still be able to hunt on Native Corporation land under State regulations.



Map 5. Federal and State Controlled Use Areas in Unit 23.

Public Hearing and Written Comments

The Office of Subsistence Management held a public hearing to solicit comments on WSA21-01 on April 23, 2021 from 3pm to 7:15pm by teleconference. Over 300 people called in, and approximately 120 people gave comments. Written public comments were also accepted between April 16 and April 20, 2021, and 1,221 written comments were submitted. The majority of public comments came from non-Federally qualified users or non-local hunters, guides, transporters, and regular citizens, and were in opposition to the requested closure.

The reasons most frequently given for opposition can be broken down into the following broad categories: (1) decisions regarding wildlife management should always be science-based, and this closure is not supported by available science; (2) the Western Arctic Herd is above management objective; (3) there is not evidence that air traffic has delayed caribou migration; (4) subsistence harvest of caribou has remained high; (5) public land should be open to all; (6) local businesses and guides will be negatively affected; (7) non-local hunters have already booked expensive trips; (8) once-in-a-lifetime experiences will be lost, often involving family members; (9) distinguishing between sport and subsistence hunting is not fair or valid; and (10) this action would represent Federal overreach.

A resident of Ambler testified in opposition, expressing concern that his nonrural relatives would not be able to hunt in the region, and asking for the views of all communities in the region to be considered in the decision-making. However, most residents of Units 23 and 26A who participated in public comment opportunities testified in support of the action for reasons that overlap with those described in the above section on tribal and ANCSA corporation consultation. Caribou were noted as being vital to the physical, spiritual, and mental well-being of people in the Northwest Arctic region, including the youngest generation. Local residents testified that non-locals do not follow the traditional practice of “letting the leader caribou pass,” which can result in herd diversion and a small number of hunters having a disproportionate impact on subsistence for entire communities. Speakers expressed frustration about having to fight for basic access to their traditional foods.

Western Arctic Caribou Herd Working Group

At the December 9, 2020 meeting of the Western Arctic Caribou Herd (WACH) Working Group, Steve Oomittuk of Point Hope made a motion to support the North Slope Subsistence Regional Advisory Council if the Council were to submit a proposal to close Federal public lands in Unit 26A to non-Federally qualified subsistence users; this motion passed (WACH Working Group 2020). While the North Slope Regional Advisory Council did not formally submit a request or proposal to close Federal lands in Unit 26A, the Council did support the Northwest Arctic Regional Advisory Council in the current request to close Units 23 and 26A to hunting of caribou and moose by non-Federally qualified users Aug. 1-Sep. 30, 2021.

Alaska Department of Fish and Game

Alaska Department of Fish and Game submitted a written memorandum opposing this special action request, stating that the proponent's objective of regulating the use of aircraft for caribou hunting would be more appropriately addressed by submitting a proposal to the Alaska Board of Game. Additionally, the State argued that this closure would have negative economic consequences and would prevent non-Federally qualified users with ties to the area from hunting on Federal public lands.

Biological Background

Caribou

The TCH, WACH, and CACH have ranges that overlap in Unit 26A (**Map 6**), and there can be considerable mixing of herds during the fall and winter. As the current request focuses on the migration of the WACH through Unit 23, this analysis will only consider the WACH as the ranges of the other herds do not include Unit 23 (Dau 2011, 2015, Lenart 2011, Parrett 2011, 2015c, 2015d).

Western Arctic Caribou Herd

Caribou abundance naturally fluctuates over decades (Gunn 2001, WACH Working Group 2011). Gunn (2001) reports the mean doubling rate for Alaskan caribou as 10 ± 2.3 years. Although the underlying mechanisms causing these fluctuations are uncertain, climatic oscillations (i.e. Arctic and Pacific Decadal Oscillations) may play an important role (Gunn 2001, Joly et al. 2011). Climatic oscillations can influence factors such as snow depth, icing, forage quality and growth, wildfire occurrence, insect levels, and predation, which all contribute to caribou population dynamics (Joly et al. 2011). Density-dependent reduction in forage availability, resulting in poorer body condition may exacerbate caribou population fluctuations (Gunn 2001).

Caribou calving generally occurs from late May to mid-June (Dau 2013). Weaning generally occurs in late October and early November before the breeding season (Taillon et al. 2011). Calves stay with their mothers through their first winter, which improves calves' access to food and body condition (Holand et al. 2012). Calves orphaned after weaning (October) have greater chances of survival than calves orphaned before weaning (Holand et al. 2012, Joly 2000, Russell et al. 1991, Rughetti and Festa-Bianchet 2014).

The WACH has historically been the largest caribou herd in Alaska and has a home range of approximately 157,000 square miles in northwestern Alaska. In the spring, most mature cows move north to calving grounds in the Utukok Hills, while bulls and immature cows lag behind and move toward summer range in the Wulik Peaks and Lisburne Hills (**Map 7**, Dau 2011, WACH Working Group 2011, 2019). After calving, cows and calves move west toward the Lisburne Hills where they mix with the bulls and non-maternal cows. During the summer, the herd moves rapidly to the Brooks Range. In the fall, the majority of the herd generally moves south toward wintering grounds south of the Brooks Range (Joly 2021, pers. comm.). Rut occurs during fall migration (Dau 2011, WACH Working Group 2011).

In recent years, the timing of fall migration has been less predictable. From 2010-2019, the average dates that GPS collared caribou crossed the Noatak River ranged from Sep. 6-Oct. 13; the Kobuk River ranged from Sep. 24-Nov. 3; and the Selawik River ranged from Oct. 2-Nov. 10 (Joly and Cameron 2020). From 2010-2016, caribou migration was trending to occur earlier in the year. However, from 2017-2019, caribou crossed the Noatak River, but then there was substantial delay before caribou crossed the Kobuk and Selawik Rivers (**Figure 1, Table 7**). This appears to have been the case for 2020 as well. During the fall 2020 Northwest Arctic Council meeting in early November, Council members stated that only Noatak had harvested caribou in the fall and that caribou had not yet passed through the Southern portions of Unit 23. While data has yet to be analyzed, the first GPS collared caribou did not cross the Kobuk River until November, which is the latest first crossing since data collection began in 2010 (July 2021, pers. comm.). Reasons for changes in migration phenology are unknown.

The proportion of caribou using certain migration paths also varies each year (**Figure 2**, Joly and Cameron 2020). Changes in migration paths are likely influenced by multiple factors including food availability, snow depth, rugged terrain, and dense vegetation (Fullman et al. 2017, Nicholson et al. 2016). If caribou travelled the same migration routes every year, their food resources would likely be depleted (NWARAC 2016a).

The WACH Working Group consists of a broad spectrum of stakeholders, including subsistence users, sport hunters, conservationists, hunting guides, reindeer herders and transporters. The Group is also technically supported by NPS, FWS, BLM, and ADF&G personnel. The WACH Working Group developed a WACH Cooperative Management Plan in 2003 and revised it in 2011 and 2019 (WACH Working Group 2011, 2019). The WACH Management Plan identifies nine plan elements: cooperation, population management, habitat, regulations, reindeer, knowledge, education, human activities, and changing climate, as well as associated goals, strategies, and management actions. As part of the population management element, the WACH Working Group developed a guide to herd management determined by population size, population trend, and harvest rate. Population sizes guiding management level determinations were based on recent (since 1970) historical data for the WACH (WACH Working Group 2011, 2019). Revisions to recommended harvest levels under liberal and conservative management were made in 2015 (WACH Working Group 2015) and 2019 (WACH Working Group 2019, **Table 6**).

The WACH population declined rapidly in the early 1970s, bottoming out at about 75,000 animals in 1976. Aerial photocensuses have been used since 1986 to estimate population size. The WACH population increased throughout the 1980s and 1990s, peaking at 490,000 animals in 2003 (**Figure 3**). Beginning in 2003, the herd declined at an average annual rate of 7.1% from approximately 490,000 caribou to 200,928 caribou in 2016 (Caribou Trails 2014; Dau 2011, 2014, Parrett 2016). In 2017, the herd increased to an estimated 259,000 caribou (Parrett 2017a). However, part of this increase may have been due to improved photographic technology as ADF&G switched from film to higher resolution digital cameras. The 2019 population estimate was 244,000 caribou (Hansen 2019a). No photocensus was completed in 2020, but ADF&G plans to conduct a census in 2021 (WACH Working Group 2020).

Between 1982 and 2011, the WACH population was within the liberal management level prescribed by the WACH Working Group (**Figure 3, Table 6**). In 2013, the herd population estimate fell below the population threshold for liberal management of a decreasing population (265,000), slipping into the conservative management level where it has remained. In 2020, no photocensus was completed, and the WACH Working Group voted to maintain the herd's status at the conservative declining level (WACH Working Group 2020).

Between 1970 and 2017, the bull:cow ratio exceeded Critical Management levels identified in the 2019 WACH Management Plan (**Figure 4**). However, the average annual number of bulls:100 cows was greater during the period of population growth (54:100 between 1976–2001) than during the recent period of decline (44:100 between 2004–2016). Additionally, Dau (2015) states that while trends in bull:cow ratios are accurate, actual values should be interpreted with caution due to sexual segregation during sampling and the inability to sample the entire population, which likely account for more annual variability than actual changes in composition.

Although factors contributing to the 2003–2016 decline are not known with certainty, increased adult cow mortality, and decreased calf recruitment and survival played a role (Dau 2011). Since the mid-1980s, adult mortality has slowly increased while recruitment has slowly decreased (**Figure 5**, Dau 2013). Prichard (2009) developed a population model specifically for the WACH using various demographic parameters and found adult survival to have the largest impact on population size, followed by calf survival and then parturition rates.

Calf production has likely had little influence on the population trajectory (Dau 2013, 2015). Between 1990 and 2003, the June calf:cow ratio averaged 66 calves:100 cows/year. Between 2004 and 2016, the June calf:cow ratio averaged 71 calves:100 cows/year (**Figure 6**). In June 2016, 85 calves:100 cows were observed, which approximates the highest parturition level ever recorded for the herd (86 calves:100 cows in 1992) (Dau 2016a).

Decreased calf survival through summer and fall and recruitment into the herd likely contributed to the recent population decline (Dau 2013, 2015). Fall calf:cow ratios indicate calf survival over summer. Between 1976 and 2017, the fall calf:cow ratio ranged from 35 to 59 calves:100 cows/year, averaging 47 calves:100 cows/year (**Figure 6**). Since 2008, ADF&G has recorded calf weights at Onion Portage as an index of herd nutritional status. In September 2015, calf weights averaged 100 lbs., the highest average ever recorded (Parrett 2015b).

Similarly, the ratio of short yearlings (SY, 10–11 months old caribou) to adults provides a measure of overwintering calf survival and recruitment. Between 1990 and 2020, SY:adult ratios ranged from 9–26 and averaged 18 SY:100 adults/year (**Figure 6**). SY:100 adult ratios were high from 2016–2018, ranging from 22–23 SY:100 adults (Dau 2016b, NWARAC 2019a). The 2020 SY:adult ratio was 17 SY:100 adults (WACH Working Group 2020).

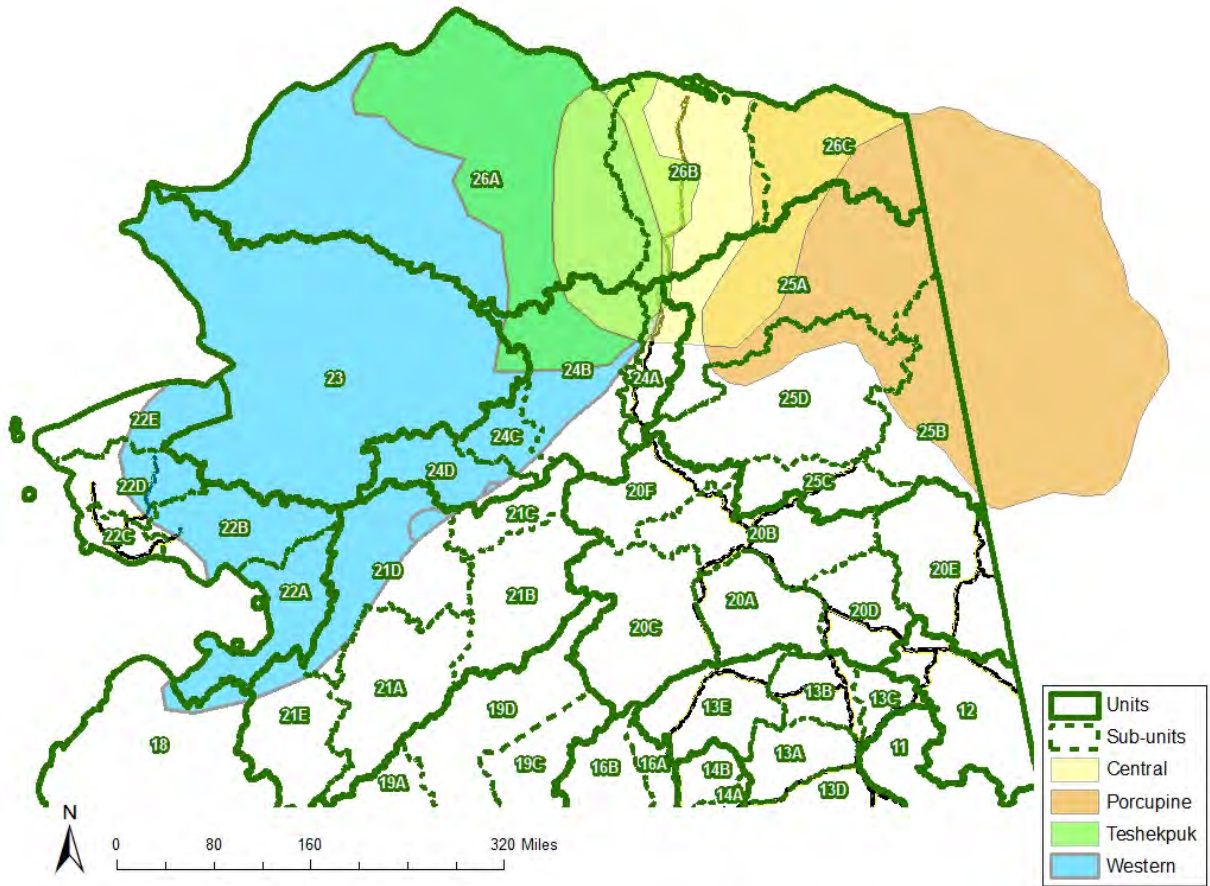
Cow mortality affects the trajectory of the herd (Dau 2011, 2013, Prichard 2009, NWARAC 2019a). The annual mortality rate of radio-collared adult cows increased from an average of 15% between 1987 and 2003 to 23% from 2004–2014 (**Figure 5**, Dau 2011, 2013, 2014, 2015). Mortality rates declined in

2015 and 2016, but then increased sharply in 2017. However, the increased mortality rate in 2017 may be due to a low and aging sample size as few caribou have been collared in the past two years (Prichard et al. 2012, NWARAC 2019a) and/or difficult weather conditions (Gurarie et al. 2020). Estimated mortality includes all causes of death including hunting (Dau 2011). Dau (2015) states that cow mortality estimates are conservative due to exclusion of unhealthy (i.e. diseased) and yearling cows. Dau (2013) attributed the high mortality rate for 2011-2012 (33%, **Figure 5**) to a winter with deep snows, which weakened caribou and enabled wolves to prey upon them more easily. Prior to 2004, estimated adult cow mortality only exceeded 20% twice, but exceeded 20% in 7 out of 9 regulatory years between 2004 and 2012 (**Figure 5**). These estimates are susceptible to collar sample size and how long the collars have been on individuals (Dau 2015, 2015b, Prichard et al. 2012).

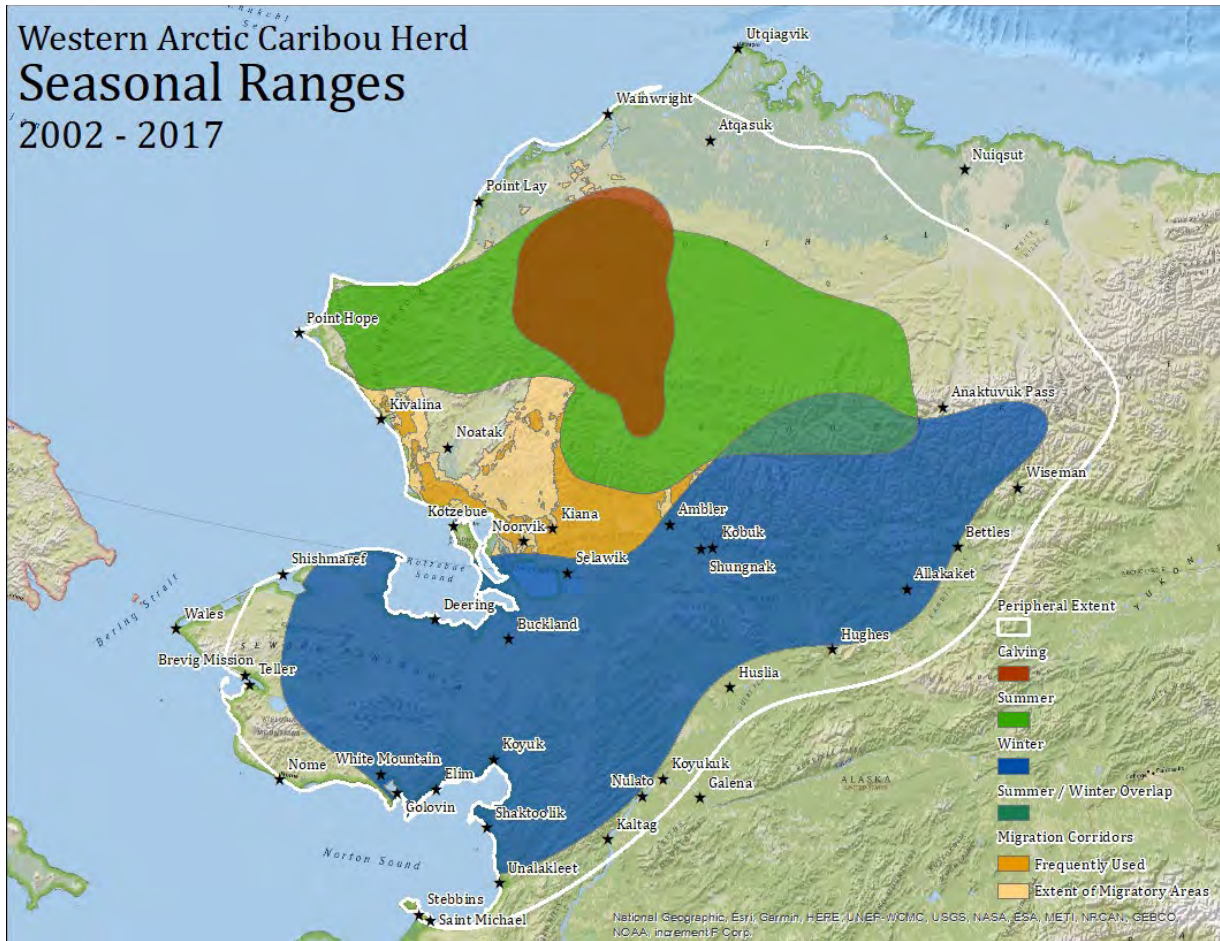
Far more caribou died from natural causes than from hunting between 1992 and 2012 (Dau 2013). Cow mortality remained constant throughout the year, but natural and harvest mortality for bulls spiked during the fall. However, as the WACH has declined and estimated harvest has remained relatively stable, the percentage of mortality due to hunting has increased relative to natural mortality. For example, during the period October 1, 2013 to September 30, 2014, estimated hunting mortality was approximately 42% and estimated natural mortality about 56% (Dau 2014). In previous years (1983–2013), the estimated hunting mortality exceeded 30% only once in 1997-1998 (Dau 2013). Additionally, Prichard (2009) and Dau (2015) suggest that harvest levels and rates of cows can greatly impact population trajectory. If bull:cow ratios continue to decline, harvest of cows may increase, exacerbating the current population decline.

Dau (2015) speculates that fall and winter icing events were the primary factor initiating the population decline in 2003. Increased predation, hunting pressure, deteriorating range condition (including habitat loss and fragmentation), climate change, and disease may also be contributing factors (Dau 2015, 2014, Joly et al. 2011). Joly et al. (2007) documented a decline in lichen cover in portions of the wintering areas of the WACH. Dau (2011, 2014) speculated that degradation in range condition is not thought to be a primary factor in the decline of the herd because animals have generally maintained good body condition since the decline began. Body condition is estimated using a subjective scale from 1-5. The fall body condition of adult females in 2015 was characterized as “fat” (mean= 3.9/5) with no caribou being rated as skinny or very skinny (Parrett 2015b). However, the body condition of the WACH in the spring may be a better indicator of the effects of range condition versus the fall when the body condition of the herd is routinely assessed and when caribou are in prime condition (Joly 2015, pers. comm.).

Caribou feed on a wide variety of plants including lichens, fungi, sedges, grasses, forbs, and twigs of woody plants. Arctic caribou depend primarily on lichens during the fall and winter, but during summer they feed on leaves, grasses and sedges (Joly and Cameron 2018, Miller 2003).



Map 6. Herd overlap and ranges of the WACH, TCH, CACH, and PCH.



Map 7. Western Arctic Caribou Herd seasonal range map, 2002-2017 (image from WACHWG 2019).

Table 6. Western Arctic Caribou Herd management levels using herd size, population trend, and harvest rate (WACH Working Group 2019).

Management and Harvest Level	Population Trend			Harvest Recommendations May Include:
	Declining Adult Cow Survival <80% Calf Recruitment <15:100	Stable Adult Cow Survival 80%-88% Calf Recruitment 15-22:100	Increasing Adult Cow Survival >88% Calf Recruitment >22:100	
Liberal	Pop: 265,000+	Pop: 230,000+	Pop: 200,000+	<ul style="list-style-type: none"> • Reduce harvest of bulls by nonresidents to maintain at least 30 bulls:100 cows • No restriction of bull harvest by resident hunters unless bull:cow ratios fall below 30 bulls:100 cows
	Harvest: 14,000+	Harvest: 14,000+	Harvest: 14,000+	
Conservative	Pop: 200,000-265,000	Pop: 170,000-230,000	Pop: 150,000-200,000	<ul style="list-style-type: none"> • Encourage voluntary reduction in calf harvest, especially when the population is declining • No cow harvest by nonresidents • Restriction of bull harvest by nonresidents • Limit the subsistence harvest of bulls only when necessary to maintain a minimum 30:100 bull:cow ratio
	Harvest: 10,000-14,000	Harvest: 10,000-14,000	Harvest: 10,000-14,000	
Preservative	Pop: 130,000-200,000	Pop: 115,000-170,000	Pop: 100,000-150,000	<ul style="list-style-type: none"> • No harvest of calves • Limit harvest of cows by resident hunters through permit hunts and/or village quotas • Limit the subsistence harvest of bulls to maintain at least 30 bulls:100 cows • Harvest restricted to residents only, according to state and federal law. Closure of some federal public lands to non-qualified users may be necessary
	Harvest: 6,000-10,000	Harvest: 6,000-10,000	Harvest: 6,000-10,000	
Critical	Pop: <130,000	Pop: <115,000	Pop: <100,000	<ul style="list-style-type: none"> • No harvest of calves • Highly restrict the harvest of cows through permit hunts and/or village quotas • Limit the subsistence harvest of bulls to maintain at least 30 bulls:100 cows • Harvest restricted to residents only, according to state and federal law. Closure of some federal public lands to non-qualified users may be necessary
	Harvest: <6,000	Harvest: <6,000	Harvest: <6,000	

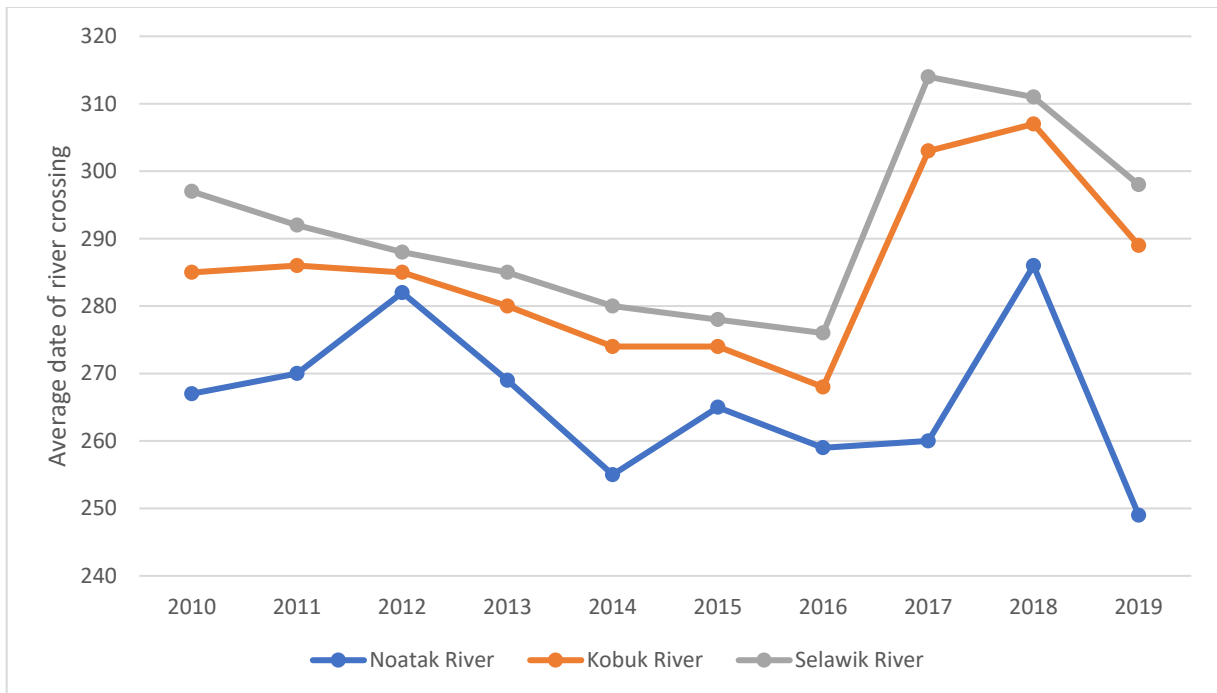


Figure 1. Average dates GPS collared caribou crossed the Noatak, Kobuk and Selawik Rivers during fall migration. Calendar dates were converted to numerical dates (e.g. February 1 would be 32). (Joly and Cameron 2020).

Table 7. Fall migration timing and prevalence of river crossing events by Western Arctic Herd caribou. Reported results are average date (standard deviation in number of days); percentage of collared cows crossing; and sample size results for generally southward 'fall' migration. Dates are for the first crossing if the individual re-crosses. Duration is the number days between Noatak and Selawik River crossings. Average (Ave) is for all years. (Table from Joly and Cameron 2020).

Year	Noatak River Crossing Date (SD); % Crossed; N	Kobuk River Crossing Date (SD); % Crossed; N	Selawik River Crossing Date (SD); % Crossed; N	Duration
2019	Sept 6 (42.7); 46.8%; 47	Oct 16 (13.3); 36.2%; 47	Oct 25 (14.4); 27.7%; 47	49
2018	Oct 13 (28.6); 56.0%; 50	Nov 3 (23.2); 20.0%; 50	Nov 7 (16.1); 16.0%; 50	35
2017	Sep 17 (40.0); 65.9%; 82	Oct 30 (22.5); 48.1%; 81	Nov 10 (18.2); 42.3%; 78	54
2016	Sept 15 (21.1); 73.3%; 75	Sep 24 (12.7); 58.1%; 74	Oct 2 (15.4); 52.1%; 73	17
2015	Sep 22 (29.5); 85.7%; 49	Oct 1 (22.3); 85.4%; 48	Oct 5 (21.0); 85.4%; 48	13
2014	Sep 12 (19.9); 88.9%; 45	Oct 1 (15.8); 84.8%; 45	Oct 7 (15.6); 86.4%; 44	25
2013	Sep 26 (16.9); 100%; 35	Oct 7 (17.4); 91.4%; 35	Oct 12 (16.4); 88.6%; 35	16
2012	Oct 8 (20.8); 84.8%; 33	Oct 11 (17.7); 78.8%; 33	Oct 14 (18.1); 70.0%; 33	6
2011	Sep 27 (37.2); 74.4%; 39	Oct 13 (27.0); 71.8%; 39	Oct 19 (27.4); 61.5%; 39	22
2010	Sep 24 (16.4); 96.7%; 30	Oct 12 (17.6); 76.7%; 30	Oct 24 (11.7); 62.1%; 29	30
Ave	Sep 23 (11.4); 77.3%; 49	Oct 12 (12.5); 65.1%; 48	Oct 19 (13.4); 59.2%; 48	27

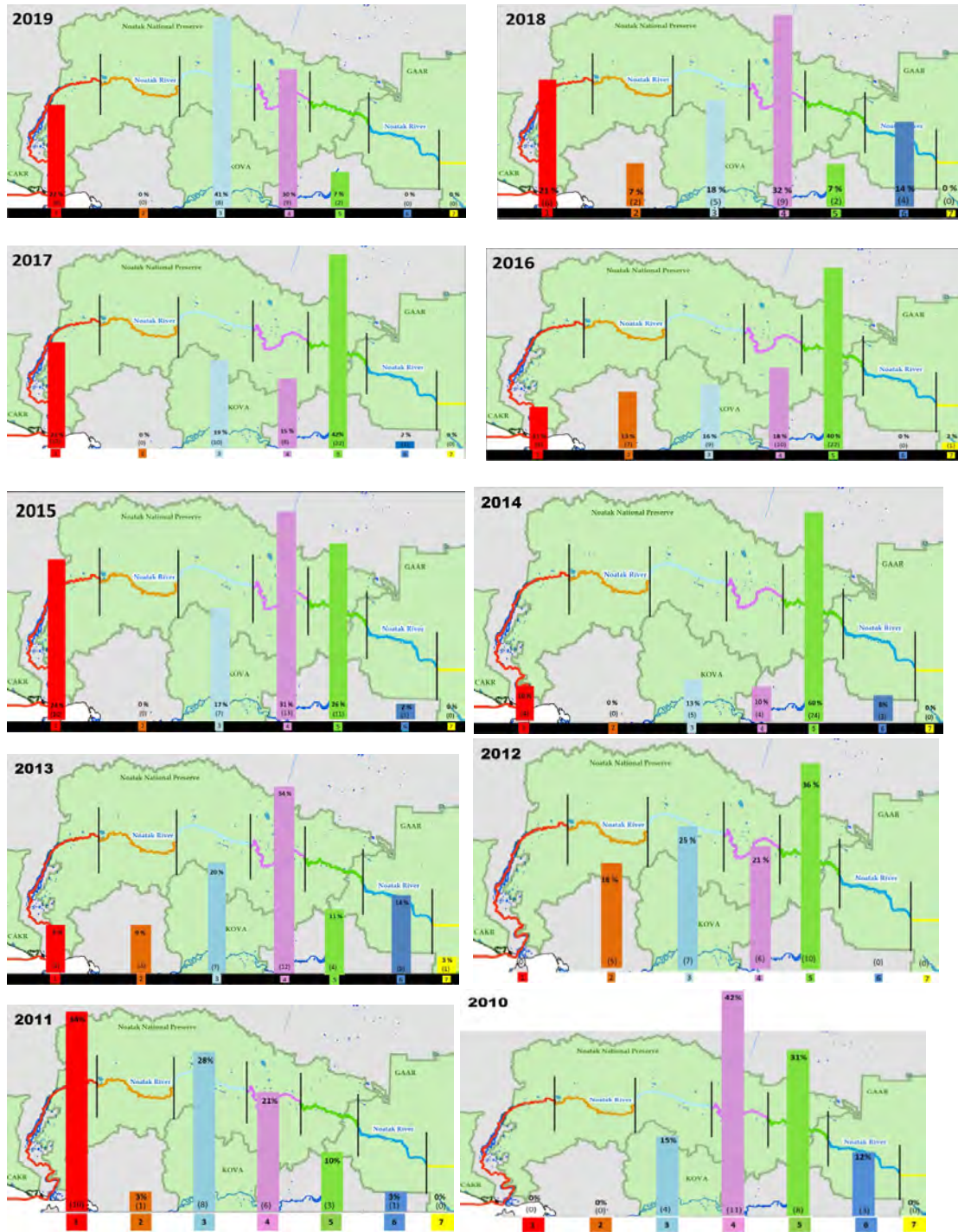


Figure 2. 2010-2019 distribution of caribou crossing the Noatak River during fall. Histograms depict where collared female caribou crossed the Noatak River, generally from north to south, on their fall migration. Relative percentages (top number) and the absolute number (middle number) of caribou are provided. The river is divided into seven (lowest number) color-coded segments which are displayed in the background. The middle five segments are 100 river kilometers long, while the westernmost segment (red) is 200 km (before extending into the Chukchi Sea) and the easternmost (yellow) runs as far east as WACH caribou are known to migrate (Joly and Cameron 2020).

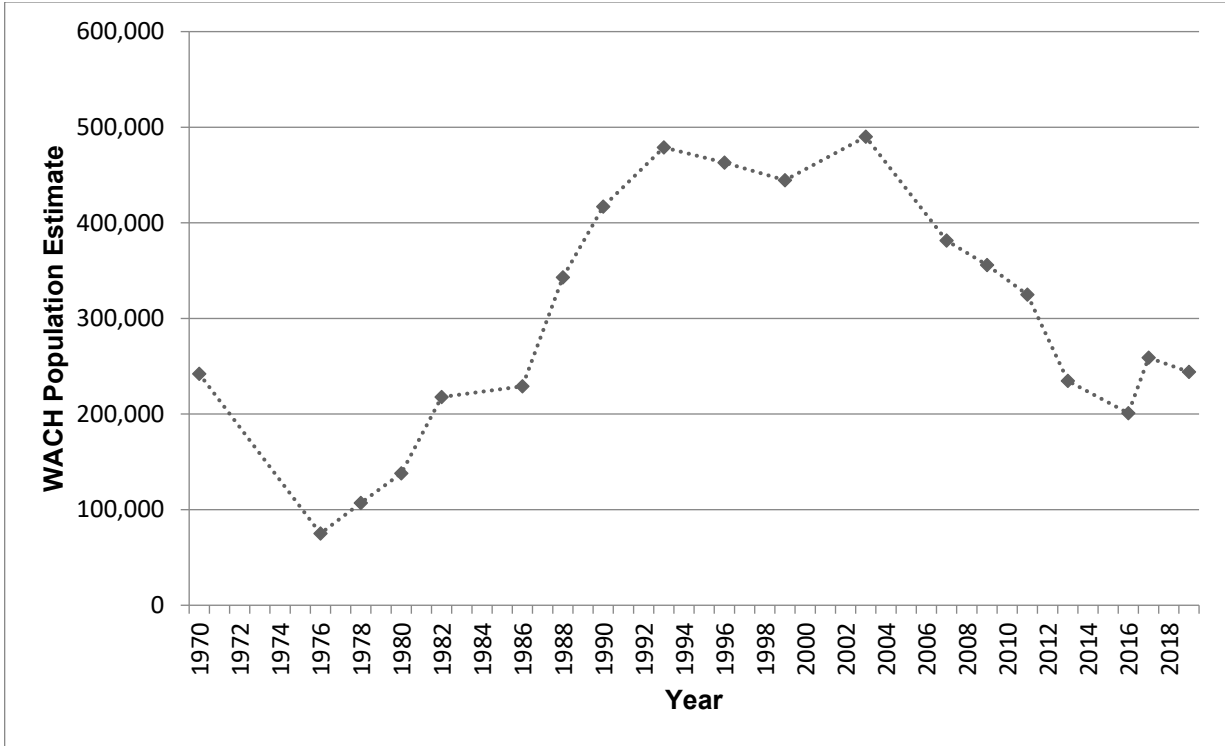


Figure 3. The WACH population estimates from 1970–2017. Population estimates from 1986–2017 are based on aerial photographs of groups of caribou that contained radio-collared animals (Dau 2011, 2013, 2014, Parrett 2016, 2017a, Hansen 2019a).

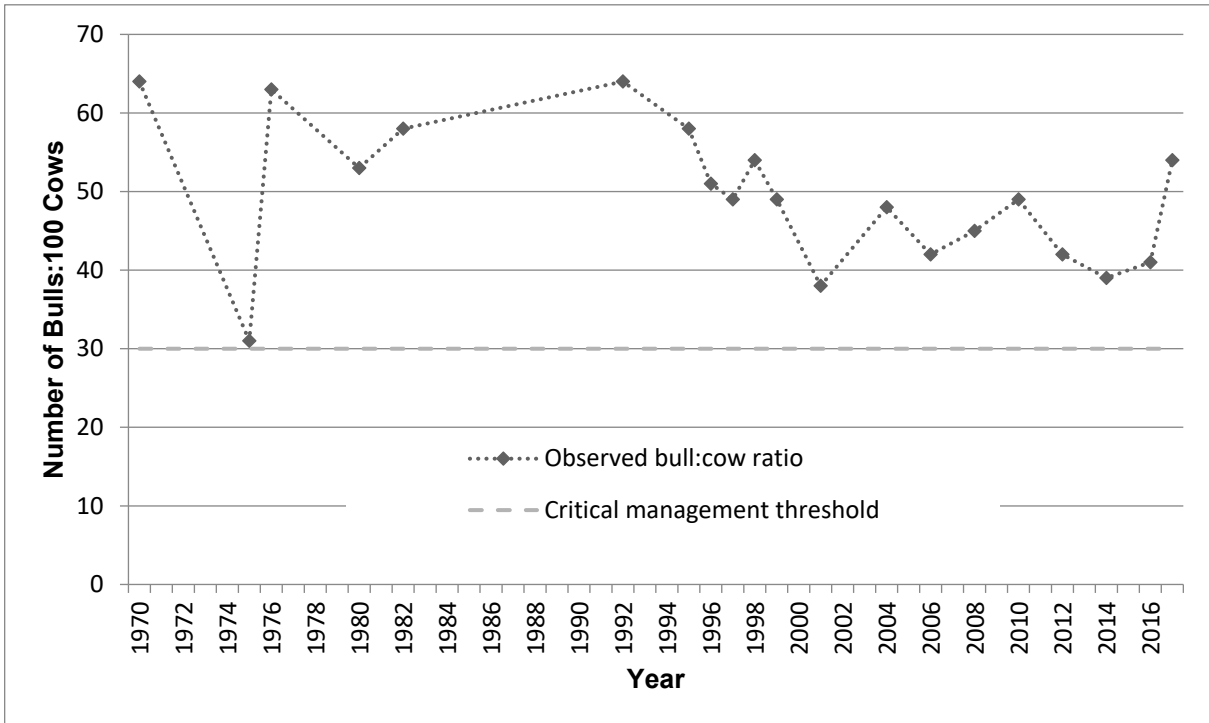


Figure 4. Bull:Cow ratios for the WACH (Dau 2015, ADF&G 2017c, Parrett 2017a).

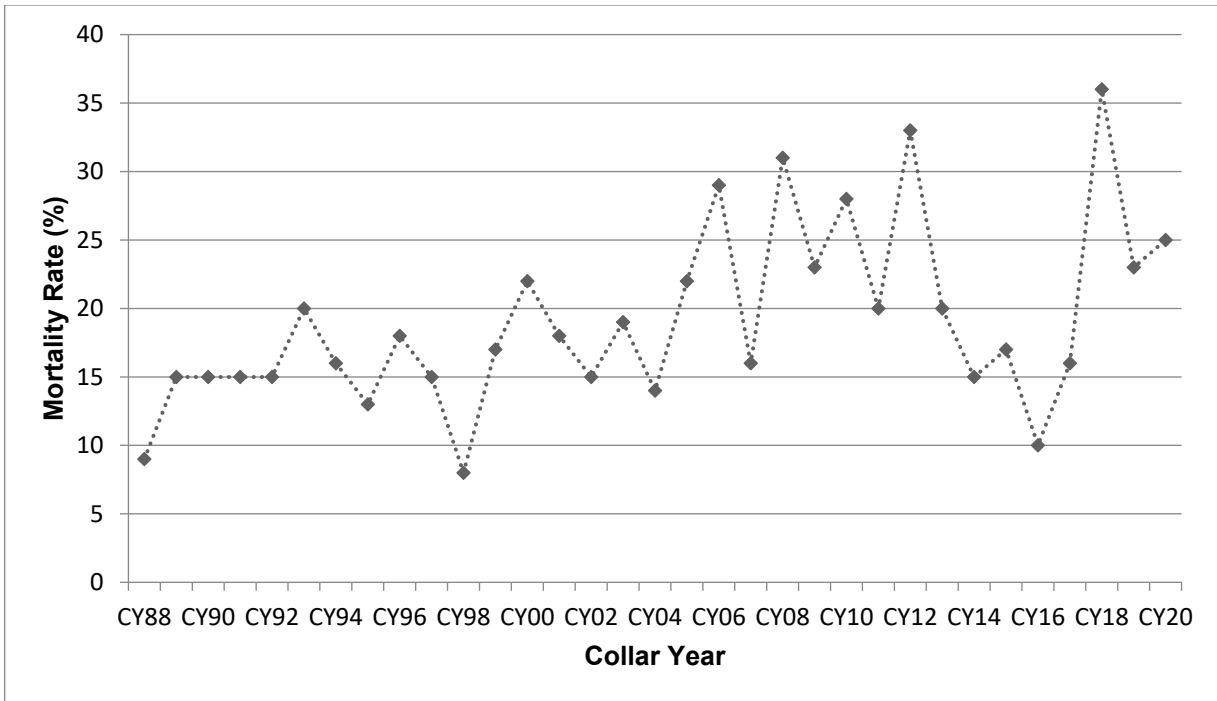


Figure 5. Mortality rate of radio-collared cow caribou in the Western Arctic caribou herd (Dau 2013, 2015, 2016b, NWARAC 2019a, WACHWG 2020). Collar Year = 1 Oct-Sep 30.

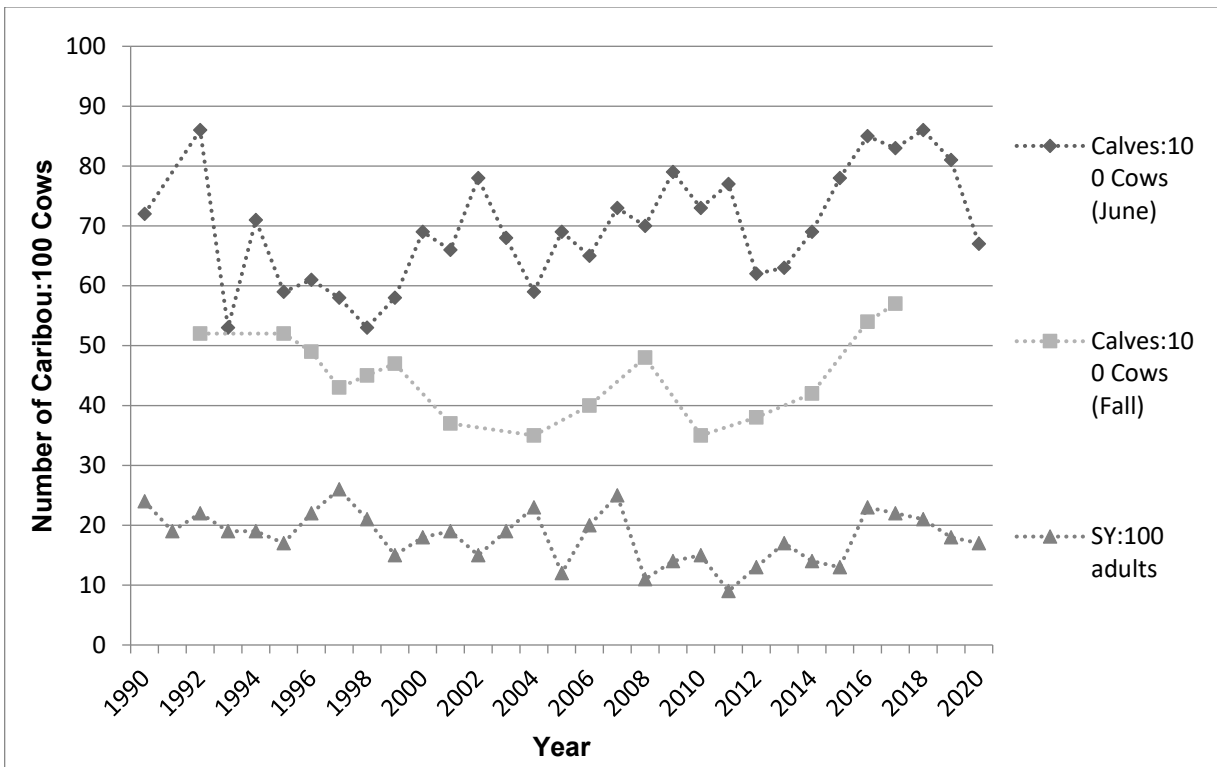


Figure 6. Calf:cow and short yearling (SY):adult ratios for the WACH (Dau 2013, 2015, 2016a, ADF&G 2017c, Parrett 2017a, NWARAC 2019a, WACHWG 2020). Short yearlings are 10-11 months old caribou.

Unit 23 Moose

Moose first appeared in eastern Unit 23 during the 1920s, expanding their range from the east. Over the next several decades, moose spread northwest across Unit 23 to the Chukchi Sea coast (**Map 8**) (LeResche et al. 1974, Tape et al. 2016, Westing 2012). The Unit 23 moose population grew through the late-1980s (Westing 2012). This rise in population was followed by severe winters and extensive flooding from 1988-1991 which, in conjunction with predation by brown bears and wolves, reduced the population and overall moose density (Westing 2012). State management objectives for moose in Unit 23 include (Saito 2014):

- Maintain a unit-wide adult moose population of 8,100-10,000 moose
- Noatak River and northern drainages 2,000-2,300 moose
- Upper Kobuk River drainage 600-800 moose
- Lower Kobuk River drainage 2,800-3,400 moose
- Northern Seward Peninsula drainages 700-1,000 moose
- Selawik River drainage 2,000-2,500 moose
- Maintain a minimum fall ratio of 40 bulls:100 cows, except in the Lower Kobuk where bull:cow ratios are skewed by its disproportional use by maternal cows. The higher bull:cow ratio goals are due to the low densities and wide distribution of moose throughout Unit 23 (Saito 2014).

The NPS, in cooperation with ADF&G, conducts spring population and fall composition surveys for moose in Unit 23. Surveys are conducted within census areas on a rotating basis with each census area being surveyed approximately every five years (**Map 9**, Alaska Board of Game 2017). Census areas have fluctuated throughout the years due to time and financial constraints as well as evolving survey techniques (Saito 2017, pers. comm.). In 2012, the Squirrel River drainage was moved from the Lower Noatak census area to the Lower Kobuk census area (Saito 2014). In 2014, the Upper Kobuk census area was expanded to include previously unsurveyed areas (Saito 2017, pers. comm.). Current census areas are static for the foreseeable future.

Moose density is primarily influenced by local factors such as snow depth, fire frequency, forage availability, and predators (Gasaway et al. 1992, Stephenson et al. 2006, Boertje et al. 2009, Street et al. 2015). Therefore, moose in Unit 23 are not evenly distributed across the landscape, with some drainages experiencing higher densities of moose than others. Between 2001 and 2017, total moose densities ranged across census areas from 0.03-0.7 moose/mi² while adult moose densities ranged from 0.03-0.59 moose/mi² (**Table 8**, Robison 2017, Saito 2014, 2016, pers. comm.).

Since 2009, the estimated moose population in almost every census area has declined (**Figure 7**). (Note: While the population estimate for the Selawik River drainage survey area increased between the 2016 and 2021 surveys, the increase is very small and still well below the 2011 estimate. The apparent decline in the Upper Kobuk is not statistically significant). The most recent population estimates are also well below State population objectives in every area except the Upper Kobuk, which just meets its lower State population objective (**Table 9**, Saito 2014, 2016a, pers. comm., Robison 2017, NWARAC

2019a). An estimated 70% of the Unit 23 moose population is found in the Selawik, Lower Kobuk, and Lower Noatak River census areas (NWARAC 2018a). All three of these areas have experienced substantial population declines. (Note: both the old (smaller) and new (larger) Upper Kobuk census areas were surveyed in 2014. The old census area data is depicted in **Figure 7** for better comparability across years while the new census area data is listed in **Table 9**).

In 2016 and 2017, ADF&G provided a unit-wide population estimate of 7,500 moose (ADF&G 2017a). In 2018, ADF&G estimated the Unit 23 moose population at 6,300 moose, representing a 16% decline (NWARAC 2018a). The most recent unit-wide moose population estimate was reported at 5,600 moose in a comment on WSA19-04 submitted by ADF&G. This represented an additional 11% decline in the population since the 2018 estimate. The Council and the public have also repeatedly reported at recent meetings that there are noticeably fewer moose than in the past (NWARAC 2017a, 2018a).

ADF&G conducts composition surveys in the fall to estimate bull:cow and calf:cow ratios. In 2008, ADF&G changed the methodology of fall composition surveys, and data are not comparable between survey methods (Saito 2014). From 2004-2007, Unit 23 bull:cow ratios averaged 39 bulls:100 cows. Since 2008, bull:cow ratios have ranged across survey areas from 34-54 bulls:100 cows, although composition surveys are conducted sporadically (**Table 10**) (Saito 2014, 2016a pers. comm., 2018 pers. comm.). In all census areas with multiple composition surveys since 2008, bull:cow ratios have declined and are below or near the State management objectives (**Table 10**). However, composition surveys are not a random sampling and are likely biased toward higher bull:cow ratios. This is because cows, particularly cows with calves, prefer more enclosed habitat for predator protection, which also makes them more difficult to see by aerial surveyors (Fronstin 2021, pers. comm.).

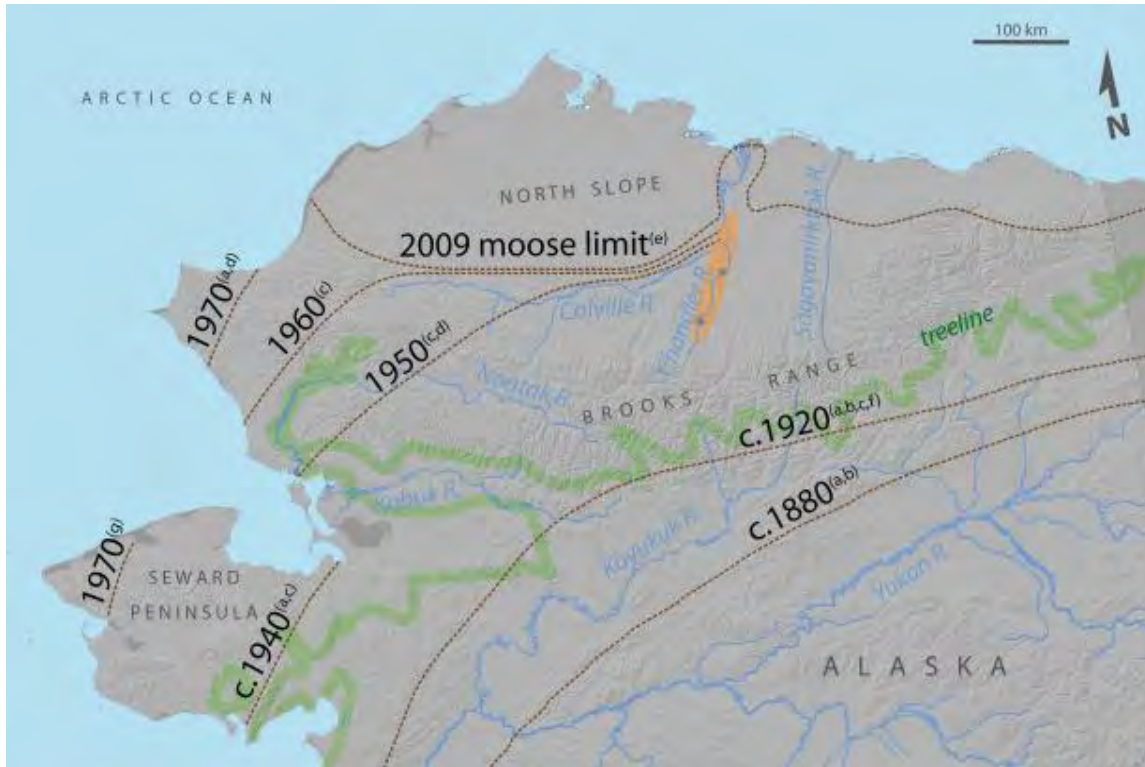
Fall calf:cow ratios of < 20 calves:100 cows, 20-40 calves:100 cows, and > 40 calves:100 cows may indicate declining, stable, and growing moose populations, respectively (Stout 2010). Since 2008, calf:cow ratios have ranged across survey areas from 4-24 calves:100 cows (**Table 10**) (Saito 2014, 2016a pers. comm., 2018 pers. comm.). These low calf:cow ratios suggest that the Unit 23 moose population is declining, with the possible exception being the Lower Kobuk survey area which has a larger percentage of maternal cows. During spring population surveys, ratios of calves:100 adults are also estimated as a measure of recruitment. Between 2001 and 2021, ratios ranged across survey areas from 7-23 calves:100 adults (Saito 2016a, pers. comm., 2018, pers. comm., Robison 2017, NWARAC 2019a, Fronstin 2021, pers. comm.). No clear trend is detectable with ratios increasing over time in some survey areas and decreasing or fluctuating in others.

While predation by brown bears, black bears, and wolves affects moose population dynamics in Unit 23, the overall level of impact of predators in relation to other factors such as weather, snow depth, disease, and human harvest is unknown, although deep snow and icing events limit moose movements, increasing their susceptibility to predation (Saito 2014, Fronstin 2018 pers. comm.). Relatively high moose densities and calf:cow ratios in the Kobuk River delta, where predator populations are lower due to its proximity to year-round human travel routes, suggest predators may be affecting moose in the more remote portions of the unit and that cows with calves may travel to the delta for safety (Saito

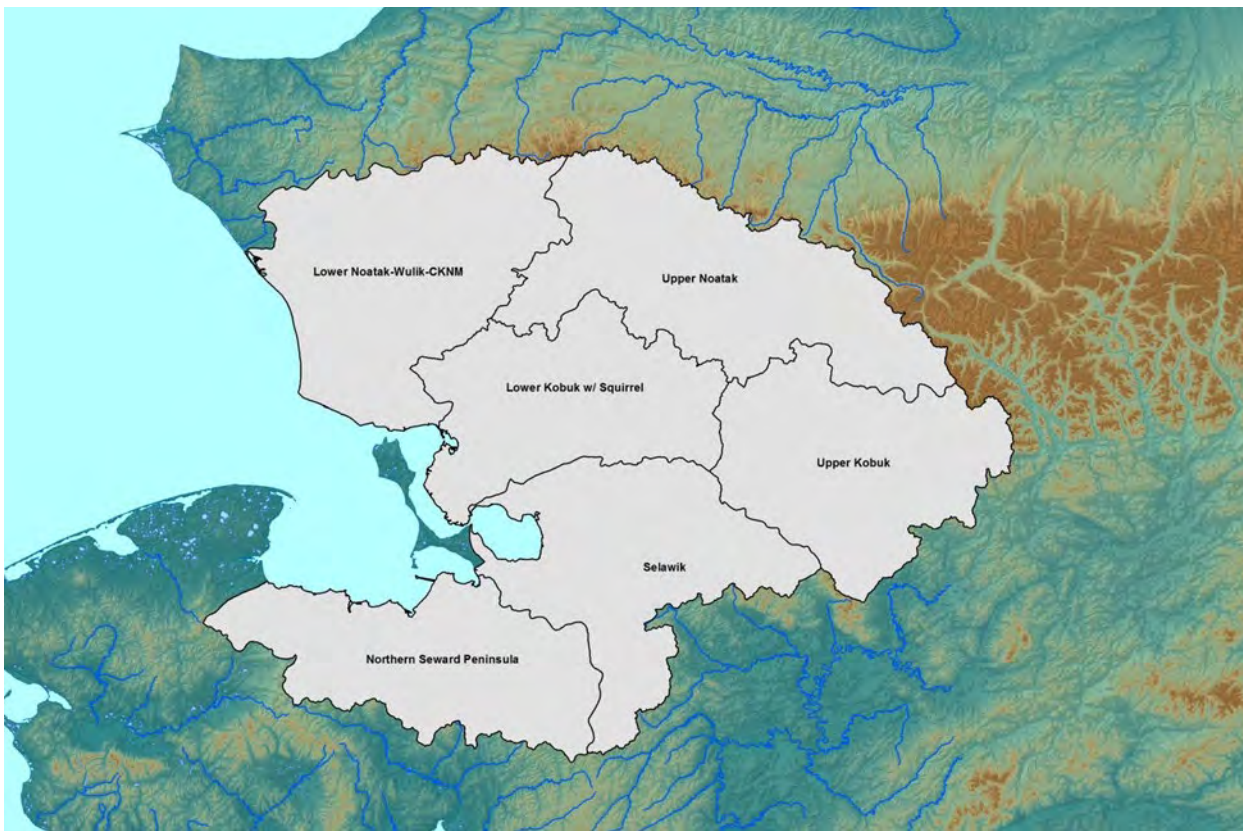
2014, Fronstin 2021, pers. comm.). However, preliminary results from a 3-year (2018-2020) calf survival study in the Lower Kobuk drainage indicate survival rates of around 65% for the first year with 77% of mortalities occurring from bear predation (108 out of 140 mortalities), which is comparable to other moose populations in Alaska (Hansen 2021, NWARAC 2018b). Further, the Lower Kobuk is primarily composed of the Kobuk River delta, which provides extensive riparian habitat. Thus, the situation mirrors the results from neighboring Unit 24, where moose productivity was higher where vegetative productivity was higher (Joly et al. 2017). As humans primarily harvest bull moose and bull:cow ratios have not substantially declined across years despite substantial population declines, human harvest may not be a limiting factor (NWARAC 2017b).

As moose are on the edge of their range in Unit 23, lower moose densities and habitat limitation are expected. However, the Unit 23 moose population does not appear to be nutritionally limited in the lower Kobuk survey area (Hansen 2021). A 2017 browse survey, completed in the Lower Kobuk, suggested that winter forage is not a limiting factor for moose populations with browse removal rates of only 19% (Hansen 2021, NWARAC 2018a). Twinning rates are another indicator of habitat and food limitations. From 2016-2020, 36-55% of cows surveyed in the Lower Kobuk had twins, further suggesting food is not a limiting factor and the population is not experiencing a density-dependent response (NWARAC 2018a). However, as stated above, the lower Kobuk area contains higher quality habitat and correspondingly higher moose densities than the rest of the unit.

Moose rely on willow and shrub habitats for browsing and for cover from predators. Shrub and willow productivity, height, and cover have increased and expanded in Unit 23 in response to rising average temperatures (Tape et al. 2016). Taller vegetation provides more suitable cover and increased available forage above the snowpack (Tape et al. 2016). Wildfire (the primary driver of boreal forest succession) frequency and shrub habitat is also forecasted to increase in Northern Alaska as the Arctic climate warms, resulting in more moose habitat in Unit 23 in the future (Joly et al. 2012, Swanson 2015). During a 2005 habitat survey in Unit 23, willows did not appear to be over-browsed by moose (Westing 2012).



Map 8. Temporal moose distribution changes in northern Alaska (figure from Tape et al. 2016).



Map 9. ADF&G moose census areas in 2017 (figure from Saito 2017, pers. comm.).

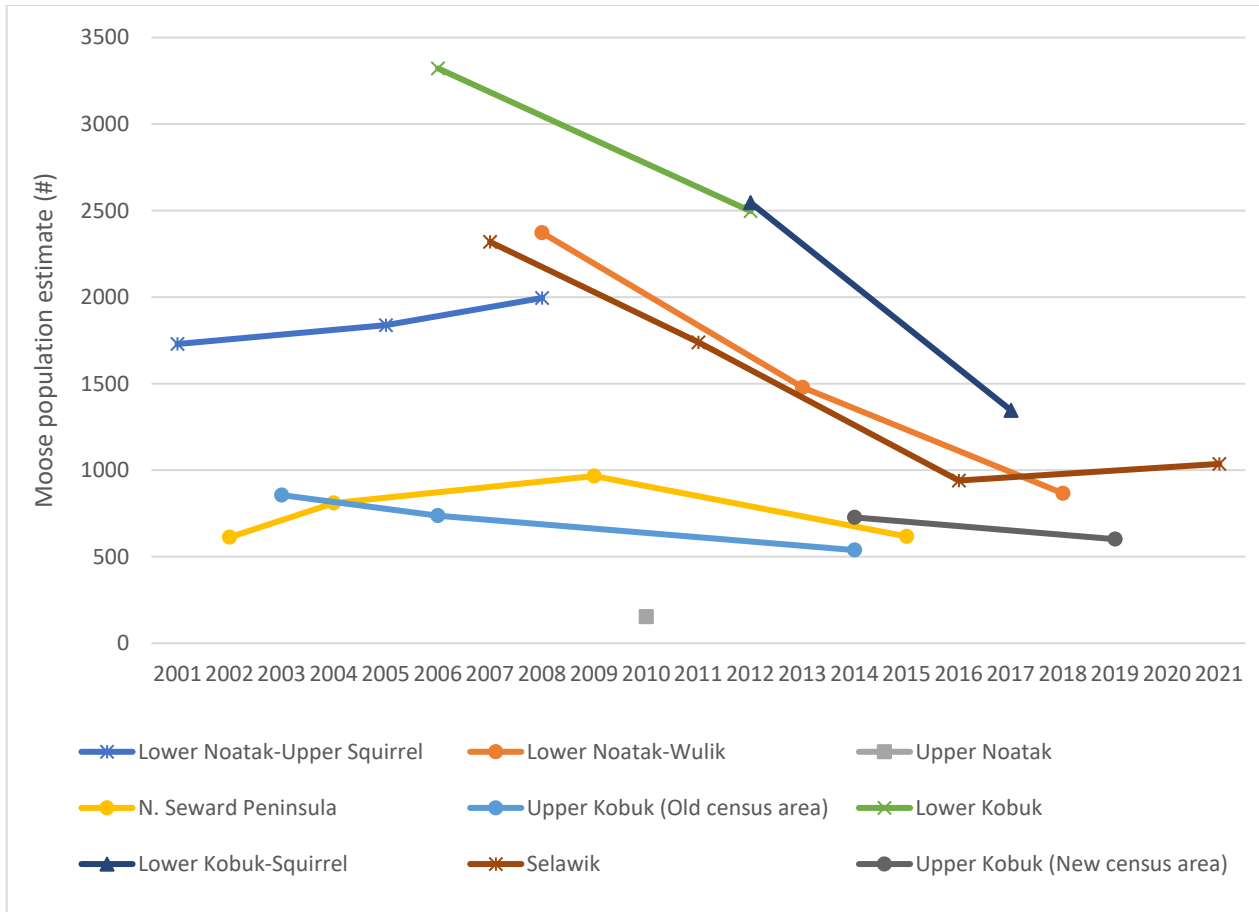


Figure 7. Total moose population estimates from 2001 to 2019 by census area. The old Upper Kobuk and new Upper Kobuk census area population estimates are both shown here (Fronstin 2021, pers. comm.).

Table 8. Moose population data collected during spring population census surveys in Unit 23 since 2001. The Upper Kobuk was surveyed in 2014 using both the older census area and the updated census area (Fronstin 2021, pers. comm.).

Census Area	Year	Moose Observed	Total Moose Estimated	Census Area (mi ²)	Area Surveyed (mi ²)	Total Density (/mi ²)	Adult Density (/mi ²)	Calves:100 adults
Lower Noatak-Upper Squirrel	2001	709	1,729	5,230.2	832	0.33	0.3	10
	2005	575	1,838	5,349.7	915.5	0.34	0.3	13
	2008	596	1,995	5,290.0	1,241.7	0.38	0.34	13
Lower Noatak-Wulik	2008	685	2,372	7,161.1	1,515.4	0.33	0.29	14
	2013	413	1,478	6,404.5	1,310.2	0.23	0.21	11
	2018	489	866	6,404.5	2,325.4	0.14	0.12	14
Upper Noatak	2010	100	153	4,485.6	1,972.1	0.03	0.03	12
Northern Seward Peninsula	2002	520	612	5,888.5	1,220.7	0.1	0.1	7
	2004	610	810	5,882.9	1,934.3	0.14	0.12	12
	2009	293	966	5,773.2	1,271.2	0.17	0.16	8
	2015	310	617	5,767.8	1,791.2	0.11	0.09	15
	2020	433	--	--	--	--	--	22
Upper Kobuk	2003	252	856	4,001.5	900.6	0.21	0.19	12
	2006	219	737	4,001.5	973.7	0.18	0.16	15
	2014	136	538	3,990.8	839.2	0.13	0.13	7
	2014	186	727	5,056.8	1,082.5	0.14	0.13	7
	2019	328	601	5,056.8	2,139.1	0.12	0.1	23
Lower Kobuk	2006	1,540	3,322	4,870.5	1,468.1	0.68	0.58	19
	2012	789	2,497	4,870.5	1,457.6	0.51	0.48	8
Lower Kobuk-Squirrel	2012	789	2,546	5,338.0	1,290.8	0.48	0.44	8
	2017	796	1,346	5,338.0	2165.2	0.25	0.22	15
Selawik	2007	678	2,319	6,580.1	1,845.2	0.35	0.32	10
	2011	448	1,739	6,559.0	1,289.1	0.27	0.24	11
	2016	520	940	6,559.0	2,273.0	0.14	0.13	14
	2021	--	1,036	--	--	--	--	10

Table 9. Comparisons across Unit 23 study areas of the most recent moose population estimates, population objectives, and harvestable surpluses. The harvestable surplus is calculated as 6% of the population. The Upper Kobuk census area represents the updated census area that was created in 2014. The spring 2017 and 2018 surveys in the Lower Kobuk and Lower Noatak-Wulik survey areas, respectively are incorporated in the table, but not into the extrapolated population total. Extrapolated total incorporates estimated populations in non-surveyed portions of Unit 23 (Robison 2017, Saito 2016a pers. comm., 2018 pers. comm., NWARAC 2018a, 2019, Fronstin 2021, pers. comm.).

Unit 23 Study Area	Most recent survey year	Population Estimate	Population Objective	Estimated Harvestable Surplus
Noatak River Drainages	2010 (Upper), 2018 (Lower)	1,019	2,000- 2,300	61
Lower Kobuk River Drainage	2017	1,346	2,800- 3,400	81
Upper Kobuk River Drainage	2019	601	600-800	36
Selawik River Drainage	2021	1,036	2,000- 2,500	62
Northern Seward Peninsula	2015	617	700-1,000	37
Total		4,619		277
Extrapolated 2017 Total		7,500		450
Extrapolated 2018 Total		6,300		378
Extrapolated 2019 Total		5,600		336

Table 10. Bull:cow and calf:cow ratios in fall composition surveys conducted after 2007 (Saito 2014, 2016a pers. comm., 2018 pers. comm., Fronstin 2021, pers. comm.).

Survey Area	Year	Bulls:100 Cows	Calves:100 Cows
Selawik	2008	54	18
	2010	47	19
	2015	43	20
Lower Kobuk	2011	45	15
	2017	38	34
Lower Noatak	2013	53	4
	2018	41	17
Northern Seward Peninsula	2009	53	4
	2020	52	
Seward Peninsula	2014	34	16

Unit 26A Moose

Prior to the 1940s, moose were scarce along the North Slope. Subsequently, populations expanded along the limited riparian habitat of the major drainages (LeResche et al. 1974) and have become well established in the southeast portion of Unit 26A. The northern extent of the moose populations on the North Slope is thought to be limited by habitat availability. The moose in these areas tend to concentrate along riparian corridors where browse is most abundant. Nearly all the moose are confined to the riparian habitat along the large river corridors during the winter but during summer many of the moose disperse north across the coastal plain and south into the foothills of the Brooks Range (Klimstra and Daggett 2020).

Recommended State management objectives for moose in Units 26A are (Klimstra and Daggett 2020):

- Manage for a population of 600-800 moose
- Manage for a fall bull:cow ratio of $\geq 30:100$
- Manage for a fall calf:cow ratio of $\geq 30:100$
- Manage for \geq to 20% short yearlings in spring

Since the late 1970s, ADF&G has conducted spring aerial surveys in all the major drainages of Unit 26A to assess population status and recruitment of short yearlings (10 to 11 months old) (Carroll 2000, 2010). These surveys produce a direct population count because the treeless landscape results in a sightability factor of one, and the deep spring snows concentrate moose in riparian corridors, which are all systematically surveyed. Of note, all the population counts included the Ikillik River, which is part of the Colville River drainage, but is in Unit 26B (Carroll 2010). Between 1970 and 2021, the Unit 26A moose population fluctuated, ranging from 294-1,535 moose (**Table 11**). Currently, the Unit 26A moose population is relatively low, but may be rebounding. Over the same time period, the percentage of short-yearlings ranged from 1-25% of the Unit 26A moose population (Klimstra and Daggett 2020, Daggett 2021, pers. comm.) (**Table 11**).

The periods of population declines resulted from poor calf survival and high adult mortality. Moose mortality was likely due to malnourishment, bacterial diseases, mineral deficiencies, predation from wolves and bears, weather factors, and competition with snowshoe hares for browse. In 2008, weights of short yearlings averaged 322 pounds, which was the lightest recorded in Alaska and an indicator of malnourishment. Human harvest of moose is very low and likely does not significantly influence abundance of the Unit 26A moose population (Klimstra and Daggett 2020).

ADF&G also periodically conducts fall composition surveys. Between 2010 and 2014, bull:cow ratios ranged from 42-97 bulls:100 cows, exceeding the State population goals. Over the same time period, the percentage of calves in the population ranged from 7-18% with the lowest calf:cow ratio occurring in 2014 (Klimstra and Daggett 2020). No composition surveys have been conducted since 2014 (Daggett 2021, pers. comm.).

Table 11. Moose observed during spring aerial censuses conducted in Unit 26A (Carroll 2010, OSM 2013, Klimstra and Daggett 2020, Daggett 2021, pers. comm.).

Year	Moose observed			% Short yearlings
	Adults	Short yearlings	Total ^a	
1970	911	308	1,219	25
1977	991	267	1,258	21
1984	1,145	302	1,447	21
1991	1,231	304	1,535	20
1995	746	11	757	1
1999	274	52	326	16
2002	502	74	576	13
2005	863	185	1,048	18
2008	1,023	157	1,180	13
2011 ^b	545	64	609	11
2014	290	4	294	1
2017	285	63	348	17
2021	349	88	437	20

^a Includes moose counted on the Itkillik River which is part of the Colville River drainage, but is in Unit 26B. In 2008, there were 64 moose, including 4 calves on the Itkillik River (Carroll 2010).

^b Information provided by Geoff Carroll (Carroll 2013, pers. comm.)

Habitat

Moose in Unit 26, which are on the extreme edge of their distribution, are limited by marginal habitat and thus are more vulnerable to environmental variations than populations in more optimal locations and habitat. During the winter the moose in this area are confined to the riparian areas on the coastal plain. During the summer a majority of them will disperse from the river bottoms but usually remain near riparian habitat and during the fall, when the snow begins to accumulate, they move back to the riparian corridors of the large river systems (Carroll 2010).

A habitat study was initiated in April 2008 on the Colville River in areas where moose browsed between the mouth of the Killik River and Umiat to determine the quantity of browse available to moose in the riparian area in the winter. Results indicated a 12% browse removal rate, which was similar to other areas in the State which have moderate browsing and twinning rates. Thus it appears that the poor survival rate of collared animals, low weights of the short-yearlings, and apparent starvation of several moose during the 2008 capture season was not related to the quantity of browse in Unit 26A (Carroll 2010). Quantity and availability (willows covered up by snow drifts), accessibility (effects of deep snow on access), and

increased tannins in the willows (in response to snowshoe hares eating the bark) are factors which could contribute to malnourishment seen in some of the moose. In 2009, samples were taken to assess the quality of the browse but the results are not currently available (Carroll 2010).

Harvest History

Western Arctic Caribou Herd

The State manages the WACH on a sustained yield basis (i.e. managing current harvests to ensure future harvests). The harvestable surplus when the WACH population trend is declining is calculated as 6% of the estimated population (WACH Working Group 2011, Parrett 2017b, pers. comm.). In 2017, the WACH harvestable surplus was 15,540 caribou (6% of 259,000 caribou). Assuming the herd population remained stable in 2018 and 2019, the harvestable surplus remains 15,540 caribou. This is a substantial increase from the 2016 harvestable surplus of 12,056 caribou when harvest likely exceeded sustainable levels. However, there is substantial uncertainty in harvestable surplus estimates (Parrett 2015a, Dau 2015). Of particular concern is the overharvest of cows, which has probably occurred since 2010/11 (Dau 2015). Dau (2015:14-29) states, “even modest increases in the cow harvest above sustainable levels could have a significant effect on the population trajectory of the WACH.”

Caribou harvest by local hunters is estimated from community harvest surveys, if available, and from models developed by A. Craig with ADF&G’s Division of Wildlife Conservation Region V. These models incorporate factors such as community size, availability of caribou, and per capita harvests for each community, which are based on mean values from multiple community harvest surveys (Dau 2015). In 2015, Craig’s models replaced models developed by Sutherland (2005), resulting in changes to local caribou harvest estimates from past years. While Craig’s models accurately reflect harvest trends, they do not accurately reflect actual harvest numbers (Dau 2015). (Note: no model accurately reflects harvest numbers). This analysis only considers the updated harvest estimates using Craig’s new model as cited in Dau (2015). Caribou harvest by nonlocal residents and nonresidents are based on harvest ticket reports (Dau 2015). Hunters considered local by ADF&G are functionally identical to Federally qualified subsistence users (e.g. Residents of St. Lawrence Island are technically Federally qualified subsistence users, but do not frequently harvest Western Arctic caribou) (**Map 2**).

From 1999–2017, the average estimated total harvest from the WACH was 14,119 caribou/year, ranging from 11,729–16,219 caribou/year (Hansen 2020, pers. comm., **Figure 8**). These harvest levels are within the conservative harvest level specified in the WACH Management Plan (**Table 6**). In 2015 and 2016, total local harvest estimates were 14,360 caribou and 14,971 caribou, respectively (Hansen 2019b, pers. comm.). While these harvest estimates are below the 2017–2019 harvestable surpluses, they exceed the 2016 harvestable surplus. Of note, harvest estimates do not include wounding loss, which may be hundreds of caribou (Dau 2015).

Local hunters account for approximately 95% of the total WACH harvest and residents of Unit 23 account for approximately 58% of the total harvest on average (**Figure 9**, ADF&G 2017c). Comparison of caribou harvest by community from household survey data (**Table 15**) with **Figure 2** demonstrates that local community harvests parallel WACH availability rather than population trends. For example, Ambler

only harvested 325 caribou when the WACH population peaked in 2003 but harvested 685 caribou in 2012 when most of the WACH migrated through eastern Unit 23. Similarly, Noatak only harvested 66 caribou in 2010 when no GPS-collared caribou migrated through western Unit 23. Harvest increased substantially (360 caribou) the following year when 37% of the GPS-collared caribou (and thus, a greater proportion of the WACH) migrated through western Unit 23.

Between 1998 and 2018, annual reported caribou harvest in Unit 23 ranged from 168-676 caribou (**Figure 10**). Over the same time period, reported harvest by non-Federally qualified users ranged from 131-657 caribou. The lowest reported harvest occurred in 2016 when all Federal public lands in Unit 23 were closed to non-Federally qualified users, but before harvest reporting was required for Federally qualified subsistence users living locally. Regardless, local compliance with reporting mandates is considered low but increasing. In 2017, the BOG began requiring registration permits, which is reflected in the greater number of reported caribou harvest by Federally qualified subsistence users (**Figure 10**). On average, 76% of WACH caribou harvested by nonlocals are harvested in Unit 23 (Dau 2015). Between 2016, when Federal lands closure began, and 2019, reported caribou harvest by non-local hunters in Unit 23 averaged 161 caribou (WinfoNet 2018, 2019).

From 1999-2013, 72% of nonlocal hunters on average accessed the WACH by plane. Most nonlocal harvest (85-90%) occurs between Aug. 25 and Oct. 7. In contrast, most local, subsistence hunters harvest WACH caribou whenever they are available using boats, 4-wheelers, and snowmachines (Dau 2015, Fix and Ackerman 2015). In Unit 23, caribou have historically been available during fall migration, but this has no longer been the case in recent years; caribou migration has occurred later in fall, resulting in subsistence harvest also occurring later, which in turn contributes to food insecurity.

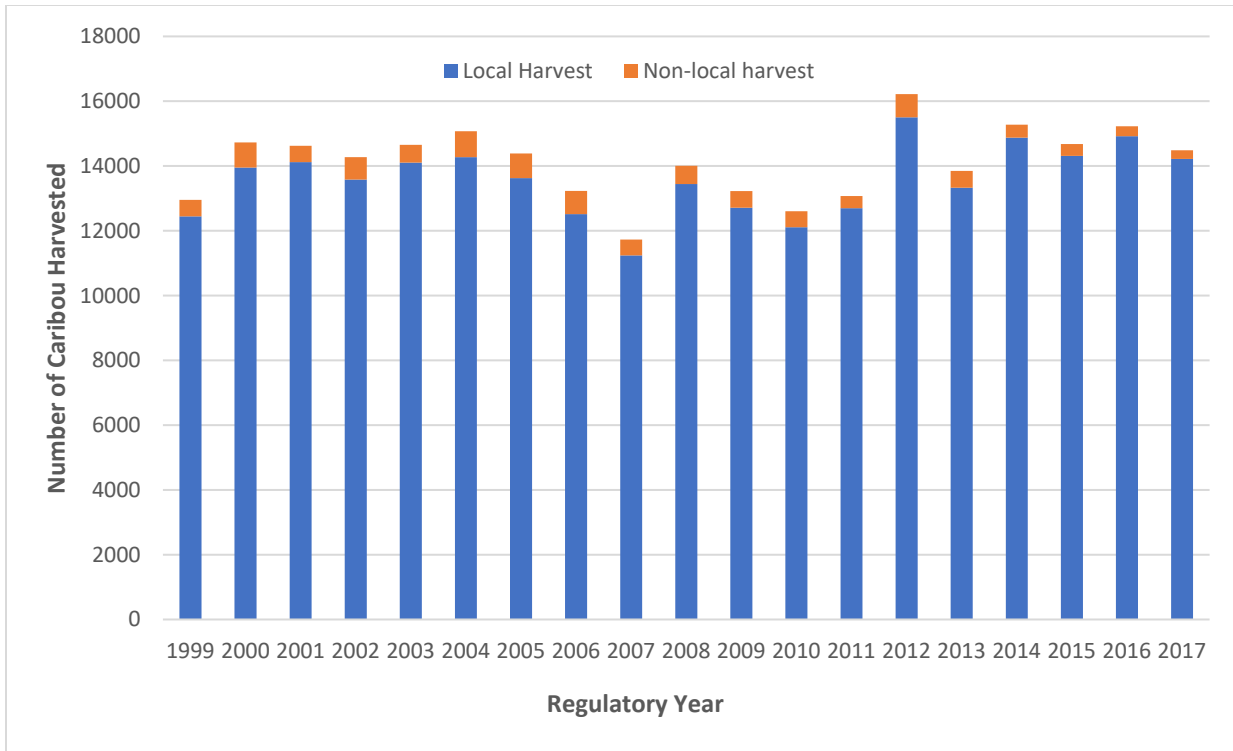


Figure 8. Estimated number of caribou harvested from the WACH by residency (Hansen 2020, pers. comm.). Local harvest is an estimate derived from models; non-local harvest is from harvest reports.

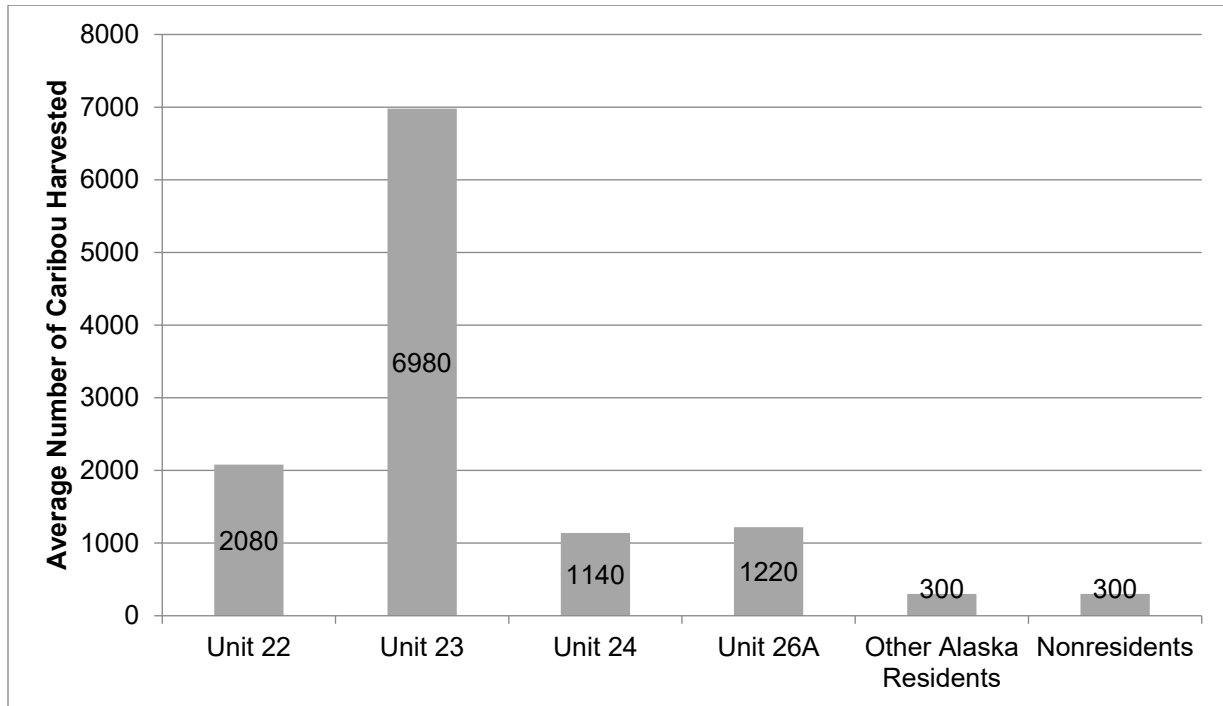


Figure 9. Average number of caribou harvested by unit and residency from 1998-2015 (ADF&G 2017c).

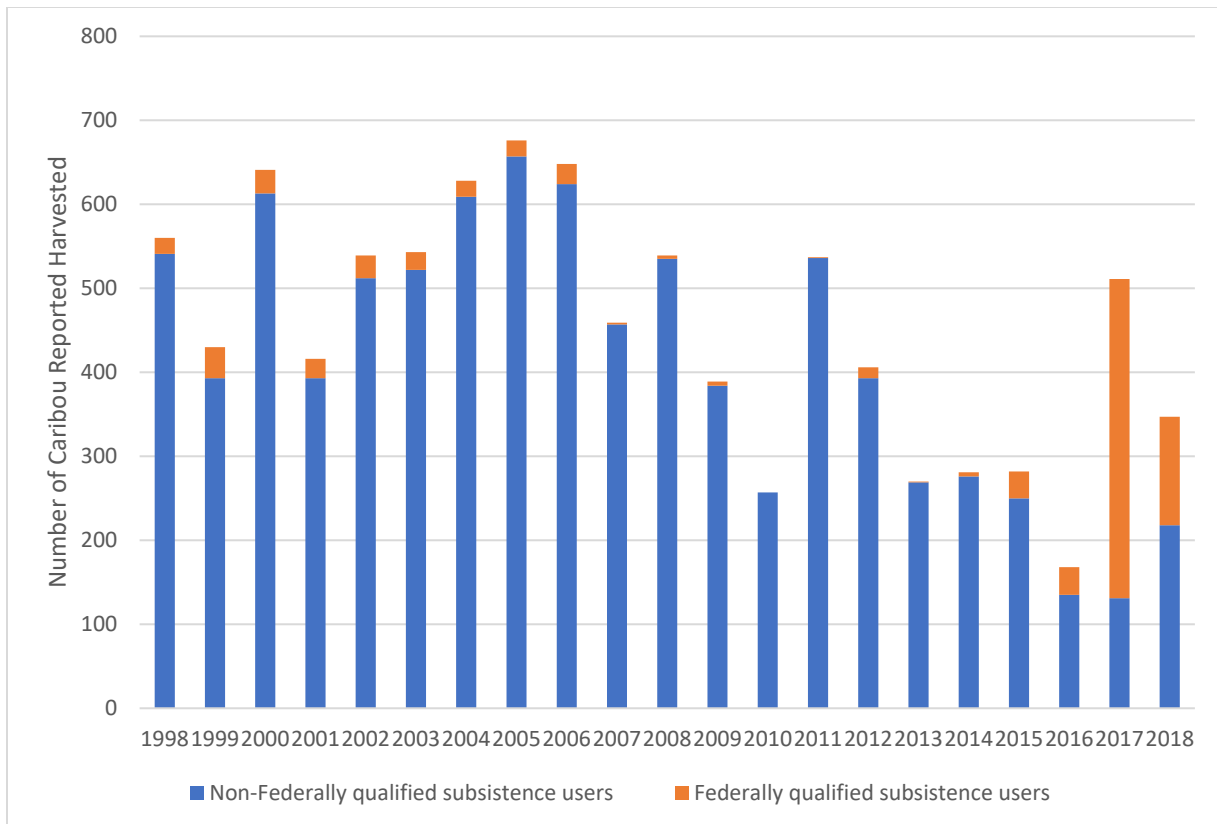


Figure 10. Reported caribou harvest in Unit 23 (WinfoNet 2018, 2019).

Unit 23 Moose

Harvest data is derived from State harvest reports and community household surveys. Community household surveys are used, in part, as a method to determine whether harvest is being reported accurately in State harvest reports. Harvest reports provide data on an annual basis. Community household surveys gather data from local communities pertaining to subsistence harvest on an irregular basis, with many communities only being visited once over a ten year time span. In Unit 23, community household surveys show that moose harvest is underreported by local users (users residing in Unit 23), but nonlocal user harvest can be assumed accurate based on the requirement of a registration permit (RM880) for the any-antlered bull resident harvest and drawing permits for non-resident harvest (before the non-resident hunt was closed). This section will discuss State harvest report data prior to reviewing community household survey data.

Between 2005 and 2019, total reported moose harvest in Unit 23 ranged from 55-189 moose, averaging 133 moose (**Table 12**) (ADF&G 2016, 2018a). The lowest reported harvest was in 2018, after ADF&G cancelled the nonresident moose season and Federal public lands were closed to moose harvest except by Federally qualified subsistence users for part of the December season (WSA18-04). Local resident (residents of Unit 23), nonlocal resident, and nonresident reported harvest averaged 72 moose (55%), 40 moose (30%), and 20 moose (15%) per year, respectively (**Table 12**) (ADF&G 2016, 2021). Cows comprised 7% of the annual reported harvest on average, with 1-21 cows being harvested each year, although the actual cow harvest is likely double what is reported (Alaska Board of Game 2017). The vast

majority of moose are harvested in September (**Figure 11**) (WINFONET 2017). Since 2006, more moose have been harvested from the Kobuk River drainage than from other drainages within Unit 23 (**Figure 12**) (ADF&G 2017a). Moose hunting is the primary activity by nonlocal users on Selawik National Wildlife Refuge (Georgette 2017, pers. comm.).

Since 2000, community household survey data has indicated 350-450 moose are harvested each year by local residents (Saito 2014). In regulatory year 2012/13 specifically, ADF&G estimated moose harvest by local residents as 342 moose (Saito 2014). When community harvest data is taken into account, local residents represent approximately 73% (2015) of the Unit 23 annual harvest, conservatively (NWARAC 2017b). The only community household survey data available for the number of cow moose harvested by local residents are for 2008 and 2009 in the villages of Noorvik, Shungnak, Ambler, Buckland, Kiana, and Kobuk. These data indicate 3 out of 67 total moose harvested were cows, although 6 moose were of unknown sex (ADF&G 2018b).

ADF&G calculates the harvestable surplus of moose in Unit 23 as 6% of the population (Saito 2016a, pers. comm.). As the 2018 unit-wide population estimate was 6,300 moose, 378 moose was the estimated harvestable surplus. In 2019, the population estimate and harvestable surplus declined to 5,600 moose and 336 moose, respectively. Reported harvest by nonlocal residents and nonresidents (~67 moose/year) combined with community household survey harvest estimates for local residents (350-450 moose/year) indicate that total Unit 23 moose harvests likely exceed the harvestable surplus. While the State has closed the nonresident season, and nonlocal resident reported harvest declined in 2016 and 2017 (**Table 12**), harvest estimates by local residents alone may still exceed the harvestable surplus (Saito 2014).

Harvest within individual drainages may be particularly high or have disproportionate effects on the population. For example, ADF&G estimates that approximately 70 moose are taken from Selawik drainage each year, which translates to a 7% harvest rate (**Figure 12**) (NWARAC 2016a). During winter months, large congregations of moose have been observed near villages, which can make these moose highly susceptible to harvest (Alaska Board of Game 2017). The Lower Kobuk River drainage hosts a disproportionate number of maternal cows, possibly because this area appears to support fewer large predators due to its proximity to human travel corridors (Saito 2014). More moose are also harvested from the Kobuk River drainage than any other drainage (**Figure 12**). This suggests cow moose in the Kobuk River drainage are particularly susceptible to harvest, although the taking of cows with calves is prohibited under both State and Federal regulations, and the cow moose hunt is now closed under both Federal and Subsistence regulations. While recent restrictions to State regulations have decreased reported moose harvest, decline of the Western Arctic Caribou Herd has likely increased moose harvest by local residents trying to meet their subsistence needs (Saito 2014, NWARAC 2017a, 2018a). During recent Council meetings, subsistence users have commented on the importance of moose as a subsistence resource, particularly when caribou are scarce (OSM 2017a, NWARAC 2017a, 2018a).

Table 12. Reported moose harvest in Unit 23 for 2005-2019 from ADF&G harvest ticket and permit reports (ADF&G 2021a).

Year	Local Resident Harvest	Nonlocal Resident Harvest	Nonresident Harvest	Total Harvest	Male	Female	Unknown
2005	65	41	41	148	137	10	1
2006	79	49	30	159	150	7	2
2007	64	29	25	123	116	7	0
2008	62	48	40	151	143	7	1
2009	80	50	23	155	144	10	1
2010	102	63	22	189	169	17	3
2011	72	45	26	144	133	11	0
2012	75	57	24	156	146	10	0
2013	88	53	21	164	151	12	1
2014	74	40	10	124	109	14	1
2015	85	59	20	165	144	21	0
2016	63	18	11	95	90	4	1
2017	66	18	0	84	78	5	1
2018	42	13	0	55	54	1	0
2019	61	15	0	76	76	0	0
Average	72	40	20	132	123	9	1

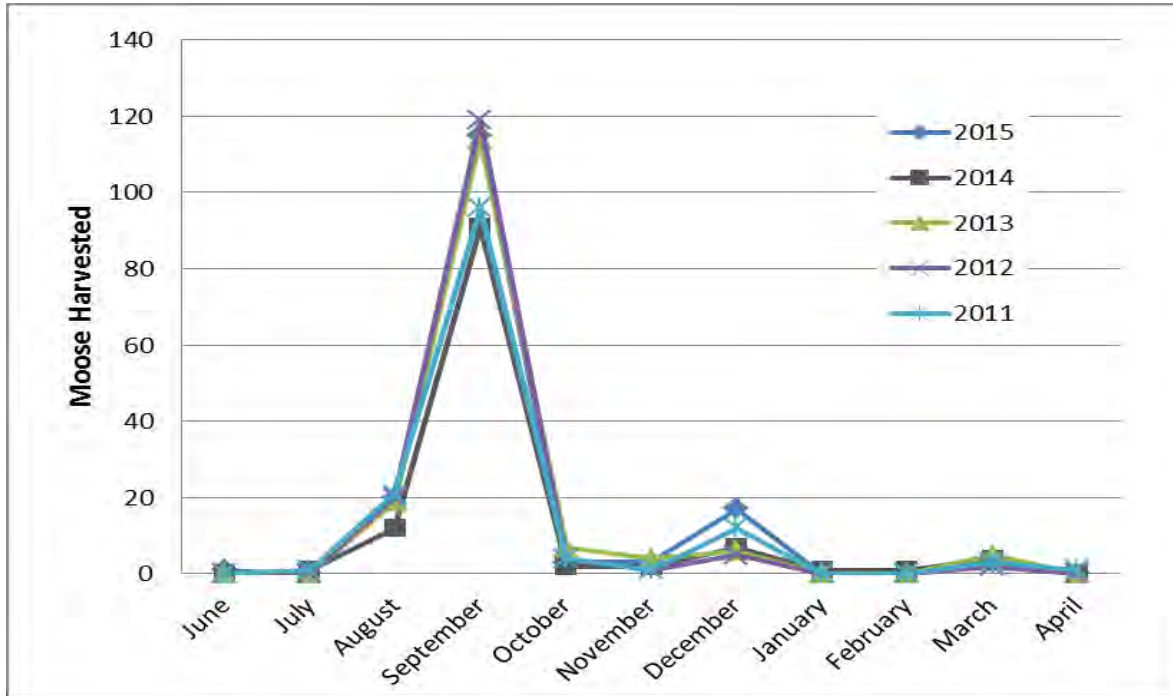


Figure 11. Moose harvest, by month, among users of Unit 23 from 2011-2015 according to State harvest reports (WINFONET 2017).

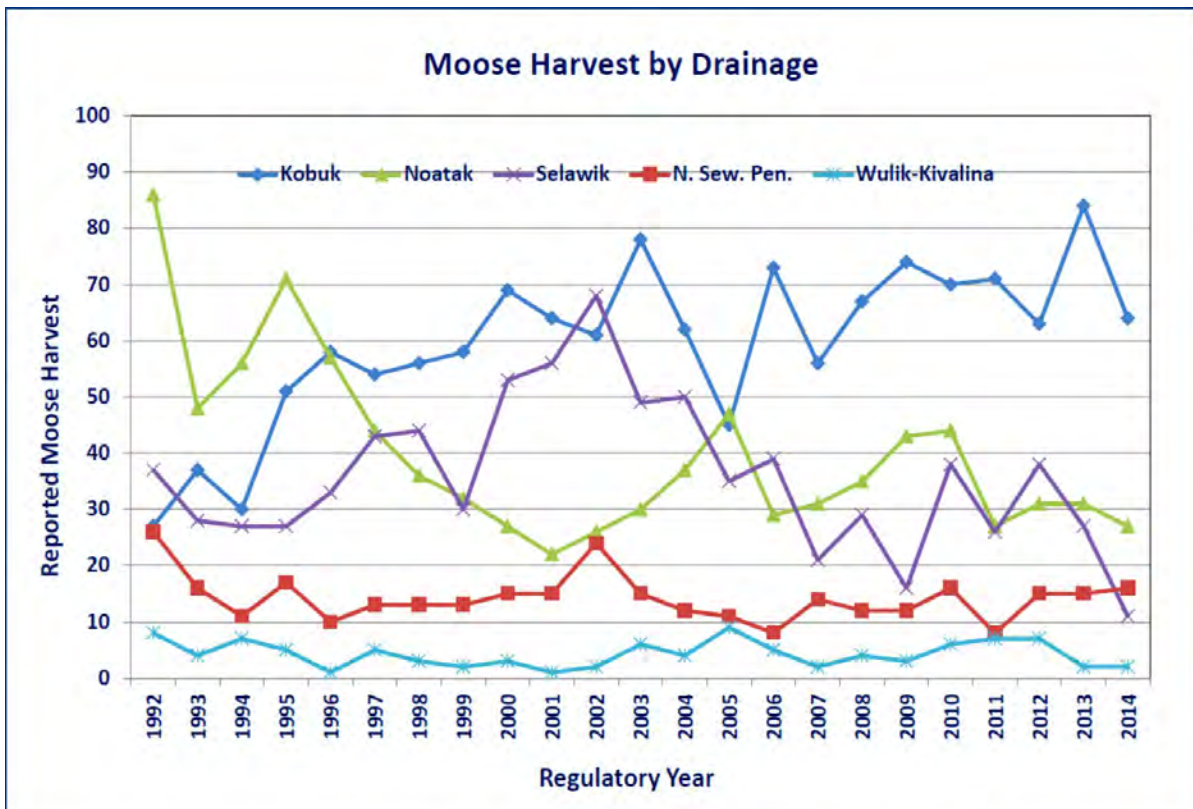


Figure 12. Moose harvest, by drainage, among users of Unit 23 from 1992-2014 according to State harvest reports (figure from ADF&G 2017a).

Unit 26A Moose

Moose harvest in all of Unit 26A averaged 57 per year until 1995, which was several years after the peak estimated abundance of the moose population in 1991. Although the trend area counts began to decline in 1992, the harvest remained at the higher levels for several years (Carroll 2010). In 1995, when more restrictive regulations were implemented, the harvest dropped to 14 moose, and then remained low between 1996 and 2004 at an average of 4 moose per year. One of the most important changes affecting harvest levels in this area was the ban on the use of aircraft beginning in 1996. In 2006, in response to an increasing moose population, the BOG allowed the use of aircraft to hunt moose in Unit 26A under a State draw permit hunt (DM980/981), but not under the general season by harvest ticket. However, the BOG discontinued the draw permit hunt, and therefore any use of aircraft, in 2015. Between 2009 and 2019, the average reported moose harvest was 3.73 moose per year (**Table 13**).

The non-resident moose hunt in Unit 26A has been closed since 2014. While the ADF&G harvest report website showed one moose harvested by non-residents in 2018 and 2019, this may be reported illegal harvest (Daggett 2021, pers. comm.). In recent years (2015-2019), non-local resident moose harvest has averaged 0.8 moose per year, while local resident harvest has averaged 1.4 moose per year (ADF&G 2021a).

Table 13. Reported moose harvest in Unit 26A for 2009-2019 from ADF&G harvest ticket and permit reports (ADF&G 2021a).

Regulatory Year	Local Resident Harvest	Nonlocal Resident Harvest	Nonresident Harvest	Unknown Residency Harvest	Total Harvest	Male	Female	Unknown
2009	2	0	1	0	3	2	1	0
2010	1	0	0	3	4	4	0	0
2011	2	0	0	0	2	2	0	0
2012	4	5	0	0	9	8	1	0
2013	2	2	0	0	5	5	0	0
2014	1	0	0	1	2	1	1	0
2015	0	0	0	3	3	2	1	0
2016	2	2	0	0	4	4	0	0
2017	3	0	0	0	3	3	0	0
2018	1	1	1	0	3	3	0	0
2019	1	1	1	0	3	3	0	0
Average	1.73	1	0.27	0.64	3.73	3.36	0.36	0

Commercial Use Authorization activity on National Park Service Lands in Unit 23

Table 14 shows several metrics of the presence of Commercial Use Authorization resulting activity in the Western Arctic National Parklands (WEAR). Each guide is limited to 12 clients a year (NWARAC 2020a). Hunting by non-locals in WEAR is only permitted in Noatak National Preserve.

In 2020, two guides and four transporters operated in WEAR, as well as six air taxi companies (NWARAC 2020a). In 2019, there were three guides operating, and a total of 11 companies holding

Commercial Use Authorizations (WEAR 2019). In 2018, there were three guide companies operating, and a total of 18 companies holding Commercial Use Authorizations (WEAR 2018).

Table 14 demonstrates that most of the transporter traffic occurs within Noatak National Preserve and is likely associated with hunting by non-Federally qualified users; Kobuk Valley National Park and Cape Krusenstern National Monument are only open to hunting by local residents. However, transporter traffic still occurs in Kobuk Valley National Park and Cape Krusenstern National Monument, and some of the traffic in Noatak National Preserve is likely not hunting related.

Table 14. Transporter and guide activity on National Park Service Lands in Unit 23. (WEAR 2017, 2018, 2019, 2020). CUA = Controlled Use Area.

Year	Number of Visitors via CUA/ Concessionaires	Number of Visitor Days via CUA/ Concessionaires	Number of Caribou harvested via Transporters and Guides	Number of Moose harvested via Transporters and Guides	Number of Air Taxi/ Transport Flights
Noatak National Preserve (NOAT)					
2020	456	3,324	366	1	361
2019	543	3,079	165	6	245
2018	319	1,724	66	2	119
2017	232	223	--	--	--
Kobuk Valley National Park (KOVA)					
2020	53	124	0	0	23
2019	496	946	0	0	144
2018	205	415	0	0	67
2017	212	73	0	0	--
Cape Krusenstern National Monument (CAKR)					
2020	11	11	0	0	5
2019	79	173	0	0	25
2018	73	120	0	0	25
2017	15	4	0	0	--
Western Arctic Parklands (NOAT, KOVA, and CAKR) TOTAL					
2020	520	11	366	1	389

Year	Number of Visitors via CUA/ Concession aires	Number of Visitor Days via CUA/ Concession aires	Number of Caribou harvested via Transporters and Guides	Number of Moose harvested via Transporters and Guides	Number of Air Taxi/ Transport Flights
2019	1,118	4,198	165	6	414
2018	597	2259	66	2	211
2017	459	300	---	--	--

Cultural Knowledge and Traditional Practices

The present-day human population in Unit 23 includes 11 regional Iñupiaq nations that were intact in the mid-19th century (Burch 1998). The estimated population of the Northwest Arctic Borough was 7,523 in 2019 (ADLWD 2019). Prior to 1840, the Iñupiat of the North Slope region, including what is now Unit 26A, were loosely organized in six groups or nations of small kin-based settlements (Burch 1980). These nations became less distinct by 1900 but communities still use the territories that preceded modern villages.

Caribou

Caribou have been a primary resource for the Iñupiat of the Northwest Arctic Region for thousands of years; caribou bones dating from 8,000 to 10,000 years ago have been excavated from archeological sites on the Kobuk River (Anderson 1968, 1988). Caribou were traditionally harvested any month of the year they were available in the Northwest Arctic Region. Hunt timing changed—and continues to change—from year to year according to the availability of caribou and their migration paths (Burch 2012; ADF&G 1991). Iñupiaq hunting values are based on the belief that hunter behavior can prevent a successful harvest and/or alter the caribou migration (Anderson 1998). Caribou continue to dominate the subsistence harvest in most communities in the region (Braem et al. 2015, Braem et al. 2017). In household harvest surveys conducted between 1964 and 2017, caribou were often the most harvested species, more than any other wild resource, in pounds of edible weight. Based on these surveys, the per capita harvest of caribou has been as high as 430 pounds per year in communities in Unit 23 (ADF&G 2021b; **Table 15**).

The objective of the fall hunt has historically been to acquire large quantities of high quality meat to freeze for winter (Burch 1994). Ideally, caribou harvesting occurs when the weather is cool enough to prevent spoilage of meat, but before freeze-up. Hunters search for caribou and attempt to intercept them at known river crossings, making the Kobuk and Noatak Rivers central to traditional hunt areas. But because of the variable range of the herd, the critical hunting sites changed each year. Noatak National Preserve was not only the hunting grounds of the people of the Noatak, it was also an alternative hunting site for people living on the Kobuk River, Selawik, and Kotzebue Sound” (Deur et al. 2019). At River crossings,

caribou can be selectively harvested with small caliber rifles. Caribou can be harvested in large numbers, when available, and transported back to villages by boat before freeze-up.

Communities in Unit 23 harvest caribou in the spring, fall, and winter, but fall is the preferred season for harvest. Prior to freeze-up, bulls have traditionally been preferred because they are fatter than cows (Georgette and Loon 1993). After freeze-up, cows are preferred, because bulls are typically skinnier and in rut by then; the meat smells bad and is of poor quality (Braem et al. 2015). For this reason, delayed migrations may result in a shift towards harvesting cows, as communities miss the opportunity to harvest fat bulls prior to freeze-up. Small groups of caribou that have over-wintered may be harvested by hunters in areas that are accessible by snowmachine.

Table 15 highlights variability in the number of caribou harvested annually by each community over time, which tends to correspond with local availability.

Table 15. Subsistence survey data showing four measures of use of caribou by Unit 23 communities between 1986 and 2017. (ADF&G 2015, 2021b; Mikow and Kostick 2016).

Community	Data year	Est Caribou Harvested	Number of Caribou per Capita	Pounds of Caribou per Capita	Percent of overall subsistence Harvest (when known)
Ambler	2012	685	2.54	330	55%
	2009	456	1.75	260	--
	2003	325	1.12	176	--
Buckland	2016	637	1.21	179	--
	2009	561	1.3	176	--
	2003	637	1.56	212	38%
Deering	2017	342	2.22	342	--
	2013	294	2.29	430	65%
	2007-2008	182	1.37	161	--
	1994	142	0.96	131	19%
Kiana	2009	440	1.18	149	--
	2006	306	0.77	108.5	31%
	1999	488	1.23	174	--
Kivalina	2010-2011	86	0.23	32	--
	2007	268	0.67	85	14%
	1992	351	0.49	138	18%
	1983	564	0.78	283.9	30%
Kobuk	1982	346	0.48	179	23%
	2012	119	0.84	98	32%
	2009	210	1.72	194	--
	2004-2005	134	1.06	148	--

Community	Data year	Est Caribou Harvested	Number of Caribou per Capita	Pounds of Caribou per Capita	Percent of overall subsistence Harvest (when known)
Kotzebue	2014	1286	0.43	59	29%
	2013	1,680	0.55	75	--
	2012	1803	0.59	78	--
	1986	1917	0.71	97	24%
Noatak	2016	337	0.59	80	--
	2010	66	0.12	16	--
	2007	441	0.9	114	31%
	2002	410	0.9	120	--
	1999	683	1.61	224	--
Noorvik	1994	615	1.62	220	48%
	2017	250	0.48	65	--
	2012	851	1.36	198	33%
	2008	767	1.19	173	--
Point Hope	2002	988	1.46	181	--
	2014	185	0.25	34	8%
	1994	355	0.5	67	23%
Selawik	2011	683	0.79	109	20%
	2006	934	1.11	165	--
	1999	1289	1.68	249	--
Shungnak	2012	396	1.47	196	53%
	2008	416	1.53	218	--
	2002	403	1.62	220	36%
	1998	561	2.17	312	--

Table 16 compares percentages of residents attempting to harvest caribou versus those succeeding in harvesting caribou in Unit 23 communities. In practice, attempted harvest depends on the presence of caribou in traditional harvest areas. It is worth noting that the percentage of individuals attempting to harvest caribou in any year may adjust to perceived abundance or availability, so the percentage attempting cannot be taken as a simple proxy of interest or need. However, the disparity between the percentage attempting to harvest and those harvesting can give us some limited information about whether people are getting as many caribou as they would like to meet their harvest goals; sharing redistributes caribou through the community in order to help meet need, and “percent receiving” is also included in **Table 16**.

Table 16. Households' attempted harvest, harvest, and sharing of caribou in Unit 23 between 1986 and 2017. (ADF&G 2021b).

Community	Year	Percent Attempting to Harvest Caribou	Percent Harvesting Caribou	Percent Receiving
Kotzebue	2014	39%	29%	72%
	2013	43%	34%	71%
	2012	44%	39%	60%
	1991	70%	63%	62%
	1986	50%	45%	58%
Selawik	2011	70%	54%	80%
	2006	65%	63%	--
	1999	61%	61%	84%
Kivalina	2010	66%	29%	73%
	2007	64%	64%	69%
	1992	77%	74%	67%
Noatak	2016	70%	51%	84%
	2010	20%	20%	45%
	2007	73%	66%	88%
	2002	76%	71%	64%
	1999	74%	72%	62%
	1994	84%	84%	50%
Lower Kobuk River Communities				
Noorvik	2017	59%	40%	40%
	2012	60%	60%	47%
	2008	70%	70%	37%
	2002	72%	71%	60%
Kiana	2009	83%	80%	60%
	2006	62%	57%	--
	1999	68%	65%	75%
Upper Kobuk River Communities				
Ambler	2012	70%	62%	60%
	2009	76%	74%	50%
	2003	74%	70%	50%
Shungnak	2012	52%	48%	74%
	2008	73%	68%	74%
	1998	74%	72%	35%

The most recent surveys conducted for communities in Unit 23 were conducted in 2017 (Deering, Noorvik), 2016 (Buckland), 2014 (Kotzebue), and 2012 (Ambler, Kobuk, Shungnak), and Kiana (2009). Therefore, harvest data from comprehensive surveys are not sufficiently up-to-date to provide accurate

information on the full impact of delayed caribou migration; new comprehensive subsistence surveys and key informant interviews are needed, particularly for Kiana, Ambler, Kobuk, Shungnak, and Kotzebue. For years in which subsistence surveys were conducted, the greatest difference between the percentage of residents attempting to harvest caribou and actually harvesting caribou occurred in Noorvik in 2017, Kotzebue in 2014, Ambler in 2012, Selawik in 2011, and Kivalina in 2010; for all five of these communities, the year with the greatest disparity was also the most recent year documented in subsistence surveys, supporting the fact that people have been having more difficulty harvesting caribou in these communities within the last decade.

User Conflict and Delayed Caribou Migration

While residents of Unit 23 rely on caribou for the majority of their subsistence harvest, non-locals are attracted to the region because of its extensive public lands and abundant wildlife. Previous discussions regarding the impacts of non-local users on the continuation of subsistence hunting for caribou in the Northwest Arctic and North Slope regions have considered the issue in the context of user conflict, defined as “persons competing for consumptive or non-consumptive uses of a finite resource” (Braem et al. 2015).

User conflicts between local and nonlocal hunters have been well documented in the Noatak National Preserve, the Squirrel River area, and along the upper Kobuk River (Georgette and Loon 1988, Jacobson 2008, Harrington and Fix 2009 *in* Fix and Ackerman 2015, Halas 2015, NWARAC 2015a, Braem et al. 2015), even during times of high caribou abundance. Since 2017, a targeted closure to non-Federally qualified users (Unit 23, within a 10 mile wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage) has addressed some of these areas of localized high conflict. While there have been individual reports of user conflict throughout the range of the herd, other public lands such as Bering Land Bridge National Preserve, Selawik NWR, and GAAR do not have the same traditional knowledge-based record of caribou disruption. Braem et al. note that “The roots of [this] conflict are varied, but they involve displacement of local hunters from traditional hunting sites, hunt disruption (largely by aircraft traffic), and differences in hunting practices and culture” (2015:177).

The local practice of letting the first caribou go by, or not harvesting the leaders, is one of the most widely held and commonly repeated traditional “laws” to this day. For example, in *Uqausriptigun: In our own words*, a Selawik Refuge publication based on 2003 interviews, elder Ralph Ramoth Sr. states “you must let the first caribou go by. Let the first bunch go by and the rest of them will follow...For example, if the caribou start coming down those hills right there, and if I go out and hunt them right now, I could re-route them away.” The widely held opinion that this traditional law is being broken by non-local hunters, and the attribution of the delayed migration to this cause, is key in this issue. Local subsistence users take umbrage with the location and timing of the non-local harvest in particular, rather than the number of animals taken.

Past management has focused on addressing short-term interruptions to caribou movement and displacement of local hunters in high conflict harvest and air travel areas; local complaints that the presence of non-local activity may be contributing to large scale delay, diversion, or cessation of the herd's migration on a long-term basis suggests that management actions to date (partial closures and Controlled Use Areas) have not been sufficient to ensure continuation of subsistence.

Concerns over delayed caribou migration—and the potential role of non-local hunting activities in diverting and delaying migration—is well documented through repeated Regional Advisory Council testimony and sharing of local and traditional knowledge (e.g. NWARAC 2015a, 2015b, 2016a, 2015b, 2017a, 2017b, 2018a, 2018b, 2019a, 2019b, 2020a, 2021b, 2021). In areas of high conflict, local hunters have expressed concerns over aircraft and nonlocal hunters disrupting caribou migration by scaring caribou away from river crossings, landing and camping along migration routes, and shooting lead caribou (Halas 2015, Fix and Ackerman 2015, NWARAC 2015a). During key informant interviews conducted by ADF&G Division of Subsistence in Noorvik between 2012 and 2014:

Several residents expressed concern for specific human actions that could result in changes to caribou migratory patterns: patterns which largely determine if caribou will be accessible or not to Noorvik hunters in any given year. Specific examples included hunters harvesting the first caribou to migrate (which are widely perceived as leading the entire migrating herd, usually in fairly predictable patterns when not disturbed), inexperienced hunters harvesting caribou at river crossings “just when they get in the water, instead of waiting until they are mid-stream” and thereby pushing the caribou herd back on land, and sport hunters or biologists disturbing caribou herds with airplane traffic (Braem et al. 2017:142).

Some studies and local observations of WACH caribou response to aircraft have suggested that animal response is limited in temporal and spatial scale (Fullman et al. 2017) and that many factors contribute to larger scale shifts in migration. Dau (2015) noted that substantial transporter traffic in the Anisak drainage, which is within the Noatak National Preserve, has not diverted migrating WACH caribou. Fullman et al. (2017) studied the effects of environmental features and sport hunting on caribou migration in northwestern Alaska. These authors found that caribou tended to avoid rugged terrain and that the migration of caribou through Noatak NP does not appear to be hindered by sport hunting activity. They indicated that their results do not preclude the possibility of short-term effects (< 8 hours) altering the availability of caribou for individual hunters, and that the lack of observed influence of hunting activity could be related to limitations in the telemetry and sport hunter datasets used in the study (i.e. caribou locations were only recorded every 8 hours, not every sport hunter camp was included, and only landings events from transporter aircraft were considered). However, the issue of cumulative effects of air traffic on caribou migration as well as subsistence access and hunter behavior has not received adequate attention in the literature (Stinchcomb et al. 2019).

Delays in caribou migration are known to have created difficulty for virtually all communities in Unit 23 (Dau 2015, Braem et al. 2015, NWARAC 2020a, 2021). Local WACH harvest has been relatively stable in Unit 23 since the 1990s, but residents of some communities have had to “greatly increase their expenditure of money and effort to maintain these harvest levels” (Dau 2015:14-30). This is due in part to

having to travel farther, more frequently, and for longer durations to find caribou (Halas 2015; Gonzalez et al. 2018), which corresponds with reduced success rate as reported in the most recent comprehensive subsistence surveys (ADF&G 2021b). In addition, regardless of specific timing, variability from year to year places additional uncertainty and stress on communities regarding their food supply, as has occurred in Shungnak on the upper Kobuk River (Braem et al. 2015).

According to a review of grey literature on aircraft-subsistence user conflict, “Specific reports or observations about aircraft activity harassing wildlife, changing caribou (*Rangifer tarandus*) migration routes, and frustrating harvesters have been increasing [in the Alaskan Arctic] since the early 2000s” (Stinchcomb et al. 2019:132). Simultaneously, research on the cumulative impact of changes to soundscapes on both caribou and the behavior of subsistence hunters is growing (Stinchcomb 2017; Stinchcomb et al 2020). Halas (2015) and Stinchcomb et al. (2019) note that even when the question of whether or not migration patterns are affected by aircraft in the long term is put aside, aircraft activity can lead to changes in harvesting behavior. Subsistence hunters avoid areas with air traffic; this displacement in turn prevents continued use of traditional areas and can even accelerate loss of place-based traditional knowledge. The authors also found that avoidance of high air-traffic areas results in longer trips and higher fuel costs for harvesters (Stinchcomb et al. 2019), consistent with testimony from the Northwest Arctic Regional Advisory Council (NWARAC 2020a, 2021).

Concerns about the impact of non-local hunters on caribou migration led to a unit wide closure in 2016 and targeted closure of Federal public lands along the Noatak River, within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively, and within the Squirrel River drainage to non-Federally qualified users beginning in 2017. According to interviews conducted by Gonzalez et al. in Noatak following the closures, “Some residents...felt that the closure of federal lands to non-Federally-qualified users in Unit 23 helped hunters from the community harvest caribou. Others commented that the herd was a great distance from the community and the expenses to reach it limited attempts to harvest” (2018:19). Key informant interviews have not been conducted by ADF&G Division of Subsistence since 2017 in any Unit 23 communities, so additional information about the effects of the partial closure must be gleaned from transcripts of Northwest Arctic Regional Advisory Council meetings.

Other areas previously identified as high conflict in Unit 23 which remain open to non-Federally qualified users include the Upper Kobuk River, although this area is surrounded by State-managed lands, so Federal lands closure would not affect this area. Delayed migrations and arrival at the Kobuk River have been noted since 2000 (Dau 2015). Federal lands occurring within Kobuk Valley National Park, as well as other National Parks and Monuments in the Unit, are already closed to non-Federally qualified users, open only to local resident zone communities. Selawik National Wildlife Refuge, BELA, most BLM lands, the portion of Gates of the Arctic National Preserve within Unit 23, and small areas of the Alaska Maritime National Refuge within the unit remain open to non-Federally qualified users. However, caribou are often no longer present in some of these areas during the fall season, and aircraft restrictions in some of these areas mean that air traffic is limited in some of these remaining open areas. Specifically, in the far Western portion of Noatak National Preserve and in a portion of Selawik National Wildlife Refuge (**Map 5, Table 5**).

User conflict on the North Slope has centered primarily on the caribou migration patterns in the vicinity of Anaktuvuk Pass. A long-held cultural practice in the region requires that lead adult female caribou be allowed to establish migratory paths unhindered by human activity. Dau (2015) suggests that once lead caribou establish migration routes, the caribou behind them will follow regardless of hunting or other disturbances such as aircraft. In response to complaints from Anaktuvuk Pass residents about caribou migration being affected by nonsubsistence hunter activity, ADF&G attempted to document such effects from 1991-93, but none were found (OSM 1995). However, residents of Anaktuvuk Pass stated that the closure of Federal public lands to non-Federally qualified users for caribou hunting in Unit 23 during the 2016/17 regulatory year was perceived as having improved the situation, allowing for the resumption of historical migration patterns and harvest activities (OSM 2017a, 2017b).

The proponents of this request also expressed concern over non-local hunting activity in Unit 26A disrupting and delaying caribou migration through Unit 23. Concerns over the Federal lands closure in Unit 23 also included displacement of non-local caribou hunters into adjacent units, including Unit 26A.

Moose

Moose are a relatively recent addition to both the Northwest Arctic and North Slope regions and have been incorporated into subsistence diets as their ranges have expanded. Archaeological sites in tundra and northern tree-line areas of Alaska demonstrate few moose remains until the mid-20th century, and this is consistent with historical accounts and minor representation in Iñupiat culture (Hall 1973, Coady 1980, Tape et al. 2016).

Shifts in caribou herd migration and size cause variability in their availability to communities, with harvest strategies for other available species, such as moose, often changing accordingly over time (Georgette and Loon 1993). Because moose harvest increases and decreases in response to the availability of other resources such as caribou and marine mammals, data from subsistence surveys need to be understood in the context of flexible subsistence strategies over time. A single year of data may over or under-represent a community's dependence on moose during times when caribou or marine mammals are less available.

Unit 23

In the upper Kobuk River in northwest Alaska, moose did not appear until the 1920s but soon thereafter populated the entirety of the drainage. Moose were present in the tributaries of the upper and middle Noatak River in the 1940s and became more common downriver after 1960. The presence of moose is especially recent in lowland and coastal areas; by the 1980s, moose were present in suitable habitat throughout northwest Alaska (Georgette and Loon 1993).

According to Georgette and Loon (1993), residents of Kotzebue continued to consider moose as secondary to caribou in their importance and desirability as a subsistence food; they were taken to add dietary variety. Residents hunted moose in the fall, but moose were also harvested throughout the winter as needed. The relative size of moose made them more difficult to butcher and pack than caribou, and

hunters often preferred to harvest the species as close as possible to the edge of a river or a lake in proximity to their boat (Georgette and Loon 1993).

In many parts of the Northwest Arctic, shifts in caribou herd migration and size cause variability in their availability to communities, with harvest strategies for other available species, such as moose, often changing accordingly over time (Georgette and Loon 1993). On the North Slope coastal communities, more moose may be harvested in years with poor whale or caribou harvests. Because moose harvest increases and decreases in response to the availability of other resources data from subsistence surveys needs to be understood in the context of flexible subsistence strategies over time. A single year of data may underrepresent a community's dependence on moose during times when caribou or marine mammals are less available. For this same reason, trends in moose availability most likely cannot be reliably deduced based on trends in numbers of moose taken as reported in subsistence surveys or harvest reports.

The average per capita harvest of moose in Kotzebue in 2014, the most recent survey year, was 14.6 pounds, accounting for only 7% of the average household harvest (**Table 17**, ADF&G 2021b). Approximately 22% of Kotzebue households attempted to harvest moose, and 10% of Kotzebue households successfully harvested moose (compared to 29% harvesting caribou) (**Table 18**, ADF&G 2021b). Despite the small percentage of households harvesting moose, sharing of this resource was widespread with approximately 50% of households using it (**Table 17**, ADF&G 2021b.).

The harvest and use of a resource in regional hubs with larger populations may be different than that of a rural village since the former tends to be more heterogeneous in “culture, birthplace, education, employment, and length of residency” (Georgette and Loon 1993: 4). In 2012 (the most recent survey year), the rural northwest arctic community of Ambler harvested approximately 27 pounds of moose per capita, with 19% of households harvesting the resource (compared to 62% harvesting caribou) and 49% of households using the resource (ADF&G 2021b).

Georgette and Loon (1993) suggested that future declines in caribou availability in the region could result in increased reliance on moose to meet the subsistence harvest demands of Kotzebue residents. Given recent declines in the Western Arctic Caribou Herd (Dau 2015), moose may already be becoming a more prominently sought after resource for meeting subsistence needs in the region. **Table 18** compares the percentage of community residents attempting to harvest moose, successfully harvesting moose, and receiving moose from others, according to comprehensive subsistence surveys. There does appear to be a general increase over time in the percentage of community members attempting to harvest moose, except in the upper Kobuk River communities; however, sufficiently recent data is not available to substantiate a trend. An increase in the percentage of community members attempting to harvest moose could reflect several different variables, such as moose availability and the need to offset lack of caribou. **Table 17** tracks trends in the percentage of community residents using moose, pounds per capita of moose used, and the percentage of the overall subsistence harvest comprised by moose, according to comprehensive subsistence surveys. A clear trend does not emerge from these data on use of moose use by residents of Unit 23, but a pattern may emerge when updated subsistence survey data becomes available. Declining moose populations may temper the availability of this resource to offset lower availability of caribou.

Table 17. Subsistence survey data showing three measures of use of moose by Unit 23 communities between 1986 and 2017 (ADF&G 2021b).

Community	Year	Percent Using Moose	Pounds of Moose per Capita	Percent of Total Harvest (when known)
Kotzebue	2014	52%	14.6	7%
	2013	43%	13	15%
	2012	37%	12.5	14%
	1991	62%	34.6	--
	1986	42%	13	--
Selawik	2011	75%	24.8	5%
	2006	Unknown	32.4	--
	1999	55%	48.5	--
Kivalina	2010	49%	18.8	37%
	2007	31%	4.8	--
	1992	48%	26.4	--
Noatak	2016	24%	8.4	9%
	2010	27%	8.6	32%
	2007	46%	10.8	3%
	2002	22%	4	--
	1999	18%	5.7	--
	1994	12%	3.5	--
Lower Kobuk River communities				
Noorvik	2017	54%	38	36%
	2012	66%	22	4%
	2008	37%	22	11%
	2002	68%	41	--
Kiana	2006	40%	22.5	--
	1999	30%	10.1	--
Upper Kobuk River communities				
Ambler	2012	49%	27.3	5%
	2003	52%	23.2	--
Shungnak	2012	52%	8.8	--
	2008	55%	23.5	--
	2002	73%	22.8	--
	1998	50%	45.6	--
Kobuk	2012	50%	11.8	4%
	2004	64%	30.6	16%

Table 18. Attempted harvest, harvest, and sharing of moose in Unit 23 between 1986 and 2017 (ADF&G 2021b).

Community	Year	Percent Attempting to Harvest Moose	Percent Harvesting Moose	Percent Receiving Moose
Kotzebue	2014	22%	10%	46%
	2013	15%	7%	36%
	2012	18%	9%	30%
	1991	33%	27%	45%
	1986	27%	8%	34%
Selawik	2011	50%	23%	65%
	2006	25%	24%	--
	1999	33%	41%	38%
Kivalina	2010	35%	13%	43%
	2007	14%	10%	29%
	1992	30%	23%	31%
Noatak	2016	15%	6%	9%
	2010	12%	5%	23%
	2007	16%	9%	46%
	2002	8%	3%	20%
	1999	4%	3%	14%
	1994	7%	3%	8%
Lower Kobuk River communities				
Noorvik	2017	38%	23%	45%
	2012	23%	17%	52%
	2008	18%	15%	23%
	2002	44%	28%	54%
Kiana	2006	21%	14%	--
	1999	13%	8%	22%
Upper Kobuk River communities				
Ambler	2012	28%	19%	40%
	2003	30%	15%	45%
Shungnak	2012	11%	7%	48%
	2008	27%	23%	34%
	1998	32%	30%	20%
Kobuk	2012	30%	10%	43%
	2004	70%	22%	61%

Alternatives Considered

An alternative to closing Federal public lands in all of Units 23 and 26A to the harvest of caribou by non-Federally qualified users Aug. 1 to Sep. 30 is to expand the current targeted closure to the rest of Unit 23 only, or to an expanded portion of Unit 23, while stopping short of closing Federal public lands in both Units. Key Federal public lands in Unit 23 which currently remain open and may be candidates for partial closures include additional river corridors within Noatak National Preserve or all of Noatak National Preserve, and BLM lands in the portion of the unit north of the Kobuk River. Subsequently, additional Federal public lands in Unit 23 and portions of the National Petroleum Reserve in Unit 26A could be closed if the initial stepped closure is not sufficient to ensure continuation of subsistence hunting for caribou within Unit 23. This alternative was considered and rejected because there is not yet adequate evidence that closing Federal public lands would definitively result in caribou migrating to the Kobuk River communities earlier in the fall. Additionally, this alternative runs the risk of concentrating non-local users on State land around some communities.

Effects of the Proposal

According to Section 815(3) of the Alaska National Interest Lands Conservation Act (ANILCA), public lands may be temporarily closed to the harvest of a specified wildlife population for nonsubsistence uses if “necessary for the conservation of healthy populations of fish and wildlife, for the reasons set forth in section 816, to continue subsistence uses of such populations, or pursuant to other applicable law.” The Code of Federal Regulations 50 CFR 100.19(b)(1) further specifies that for temporary special actions, such closures should not be “an unnecessary restriction on nonsubsistence users” or “be detrimental to the long-term subsistence use of fish or wildlife resources.”

Caribou in Units 23 and 26A

If this special action request is approved, Federal public lands in Unit 23 and Unit 26A will be closed to the harvest of caribou by non-Federally qualified users from Aug. 1-Sep. 30, 2021. Only Federally qualified subsistence users—those with a customary and traditional use determination for caribou in Units 23 and Unit 26A—would be able to harvest caribou on Federal public lands in these units.

This may increase hunting pressure on State or private lands. State lands comprise 19% of Unit 23 and also encompass many of the villages in the unit (**Map 1**). If this proposal is adopted, user conflicts and concern about the effects of non-local hunters on caribou migration may increase on State lands, particularly along the upper Kobuk River. If only Unit 23 is closed to non-Federally qualified users, these users may be displaced onto Federal public lands in adjacent units (i.e. Unit 26A), which could impact hunting and harvest in those units.

If this special action request is approved, those with a history of residency and family connection in Unit 23 who are now residing in nonrural areas would not be able to harvest caribou on Federal public lands in Units 23 and 26A Aug. 1-Sep. 30, 2021, as they are not Federally qualified subsistence users. Non-Federally qualified users who are Native corporation shareholders would still be able to hunt on Native corporation lands under State regulations.

While the number of people and planes on Federal public lands may decrease substantially, user conflicts would not be fully eliminated since other users (i.e. hunters seeking species other than caribou, photographers, recreational boaters, private planes) would still be able to fly over and access Federal public lands. Additionally, non-Federally qualified users would still be able to access and harvest caribou on gravel bars below the mean high water mark within Federal public lands as these areas are considered State land. Reports from law enforcement and nonlocal hunters indicate caribou are commonly harvested on such gravel bars, which may suggest limited impacts of the closure. As the rationale for this request focuses on the effect of non-local aircraft activity on caribou migration, closure of Federal public lands could represent an unnecessary restriction on the approximately 28% of non-Federally qualified users who do not access the WACH by plane (Dau 2015).

Attempts to mitigate user conflicts in Unit 23 have already been implemented by the NPS (delayed entry zone in Noatak NP), ADF&G (Noatak Controlled Use Area), Selawik NWR (closure of certain areas to commercial use), and the Board (partial Federal lands closure in Unit 23). Controlled Use Area dates have been extended to accommodate the delayed caribou migration under both State and Federal regulations: in 2009 the Noatak Controlled Use Area dates were changed to Aug. 15-Sep. 30, and in 2020 the Noatak National Preserve Delayed Entry Area date was changed to Sep. 22.

However, more can still be done by individual Federal agencies as well as the State to further address user conflict (e.g. establishing new Controlled Use Areas in zones where caribou migration may be deflected, modifying the dates or extent of the NPS delayed entry zone, further restricting the number and activities of permitted transporters and guides, and additional education and outreach, etc.). A non-resident caribou hunt remains open in Units 23 and 26A; the State can be encouraged to improve education of non-resident as well as non-local resident hunters about Traditional Ecological Knowledge regarding caribou behavior, and cultural norms surrounding human-caribou interactions. The National Park Service could stop allowing transporters to bring hunters into Noatak National Preserve. However, there is not currently adequate evidence that ceasing transport of non-local hunters into Noatak National Preserve would result in caribou resuming their previous migration pattern. Additionally, this alternative runs the risk of concentrating non-local users on State land around some communities.

Because there are already several Controlled Use Areas in place for Units 23 and 26A, closure to non-Federally qualified users may not reduce air traffic in areas already covered by Controlled Use Areas targeting hunter activity associated with the same species. It could, however, reduce other forms of non-local hunter presence and associated activity and noise on areas already covered by Controlled Use Areas, as well as all Federal public lands. This proposal would also likely reduce air traffic over areas and during times not currently covered by Controlled Use Areas.

Approving this request may result in increased subsistence opportunity for Federally qualified subsistence users. Reducing non-local hunting, as well as air traffic and noise associated with hunting, may remove one factor possibly contributing to delay, diversion, or cessation of the caribou migration into traditional harvest areas. The role of these activities on caribou migration is currently poorly understood, particularly in combination with the impact of climate change on caribou migration and habitat use. However, Fullman et al. (2017) suggests that while aircraft can affect caribou behavior in the short-term (< 8 hours),

which can impact hunting success, aircraft are unlikely to have long-term impacts on caribou migration through the Noatak NP. The WACH have migrated through Unit 23 for thousands of years, although specific migration routes change annually (**Figure 1**). The long-held Iñupiaq tradition of letting lead caribou pass unmolested in order to establish migration routes also suggests that once migration routes are established, other caribou will follow regardless of hunting or other disturbances such as airplanes (Dau 2015).

Some discussion regarding this closure has focused on current herd numbers and classification under State and Western Arctic Caribou Herd Working Group management levels; the herd is currently being managed at the “conservative declining” level (**Table 6**), and under these frameworks, closure to non-Federally qualified subsistence users is not recommended until the herd is at the “preservative” management level, as indicated by population estimates and bull:cow rations. However, the rationale for the request to close to non-Federally qualified users is not the current population metrics of the herd, but the continuation of subsistence uses. Specifically, the availability of the herd to Federally qualified subsistence users, and how the activity, presence, noise, and caribou-human interactions associated with non-local hunters may be affecting that availability. Traditional Ecological Knowledge indicates that interacting with caribou in particular ways, such as flying low, not letting the leader pass, or simply creating excessive noise can hinder their movement, and that such effects may not be purely transitory, or could be cumulative in nature. Therefore, it is currently unclear whether closing Federal public lands to non-Federally qualified subsistence users in either Unit 23 or Unit 26A, or both, could contribute to restoration of historic migration routes and phenology. Fullman et al (2017) suggests that while individual caribou movements can be affected by human activity, it likely does not affect long-term caribou migration through Noatak NP. However, Local and Traditional Ecological knowledge holders suggest that repeated disruption to migratory pathways may approach a tipping point, beyond which herd memory of these routes can be lost (Baltensperger and Joly 2019; Nicholson et al. 2016). Thus, acting to protect migratory pathways may be time critical.

The entirety of Unit 23 was closed to caribou hunting by non-Federally qualified subsistence users during the 2016/17 regulatory year. Testimony from the Northwest Arctic Subsistence Regional Advisory Council in the fall of 2016, following implementation of this closure, indicated that the action had a positive effect on the availability of caribou for local communities. Council members also stated that the closure allowed communities to carry out subsistence practices without tension from conflicts with non-local hunters (NWARAC 2016a).

Since 2017, there has instead been a geographically targeted closure for caribou hunting by non-Federally qualified subsistence users along the Noatak, Eli, Agashashok, and Squirrel Rivers. This targeted closure focused on mitigating user conflicts around Noatak and resulted from extensive analysis and conversations with the Northwest Arctic Council representative from Noatak. Testimony from the Northwest Arctic Council indicates that this closure has been successful in mitigating a high-conflict area and allowing residents of Noatak to harvest caribou (NWARAC 2017a). While the current closure reduced user conflicts around Noatak, including limiting on-the-ground interactions between user groups, it does not address caribou migration and availability throughout Unit 23, the focus of the current request.

The primary reason the Norwest Arctic Council submitted this special action was because of delayed caribou migration, which has prevented many subsistence users from harvesting caribou during the fall. At their fall 2020 meeting, Council members stated that only Noatak had harvested caribou. Since 2016, according to GPS-collared caribou, crossing of the Kobuk and Selawik Rivers has been delayed, while crossing of the Noatak River has remained relatively consistent (Joly and Cameron 2020, **Figure 1, Table 7**). This suggests that closing areas south of the Noatak River and north of the Kobuk River may have the greatest impact on caribou migration phenology. However, western portions of Noatak National Preserve, BLM lands within the Squirrel River drainage, Kobuk Valley NP, CAKR, and GAAR are all already closed to non-Federally qualified users. Additionally, Council members from Ambler have expressed concern in the past over closure of all Federal public lands due to the potential to concentrate non-local hunters around the Upper Kobuk villages, which are surrounded by State lands. The closure of Selawik NWR, Bering Land Bridge NP, and the BLM lands south of the Kobuk River would not have any effect on encouraging migrating caribou to cross the Kobuk River earlier in the fall.

Moose 23

If this request is approved, Federal public lands in Unit 23 will be closed to the harvest of moose by non-Federally qualified users from August 1-September 30, 2021. Only Federally qualified subsistence users—those with a customary and traditional use determination for moose in Unit 23—would be able to harvest moose on Federal public lands in Unit 23. This request seeks to reduce moose harvest by non-Federally qualified users to protect a declining population that is important to Federally qualified subsistence users.

There are substantial conservation concerns that threaten the viability of the population. Surveys indicate substantial declines in almost every survey area, and population estimates are below State objectives. Additionally, the harvestable surplus has likely been exceeded. Regulatory changes made to reduce moose harvest since 2017 under State regulations include ending the hunt for non-residents of Alaska and elimination of the antlerless moose season. Regulatory changes made under Federal regulations since 2018 include combining the Noatak River drainage and remainder hunt areas, shortening seasons, closure of the cow moose season and changing the Unit 23 harvest limit to one antlered bull. However, moose populations have continued to decline. Federally qualified subsistence users have taken steps to limit their own harvest, and the Northwest Arctic Council voted to support these restrictions. Additionally Federal public lands were closed to moose harvest by non-Federally qualified users in December 2018 via special action due to conservation and population viability concerns.

Local use and dependence on moose may increase as availability of caribou, the most important subsistence resource for residents of Unit 23, becomes less predictable due to changes in migration routes and timing. However, moose are not a traditionally preferred food in the region. Approval of this request could aid in the recovery of the Unit 23 moose population by reducing moose harvest by non-Federally qualified users and offsetting a potential increase in use of moose by Federally qualified subsistence users on Federal public lands.

If this special action request is approved, those with a history of residency and family connection in Unit 23 who are now residing outside the region would not be able to harvest moose on Federal public lands in Unit 23 Aug. 1-Sep. 30, 2021, as they are not Federally qualified subsistence users. Non-Federally qualified users who are Native corporation shareholders would still be able to hunt on Native corporation lands under State regulations.

Hunting of moose, by non-Federally qualified users, would still be permitted on State lands in the unit as well as below the mean high water line on many waterways within Federal lands (**Map 1**). Many State lands are located adjacent to Native lands, which could cause more non-Federally qualified users to harvest moose near these areas; this concern has been expressed by communities within Unit 23 in discussion about potential closures to non-Federally qualified users. Non-Federally qualified users hunting moose may still traverse Federal public lands to access State lands if this Special Action Request is approved. If all non-Federally qualified users harvest moose on State lands, this could lead to overcrowding, increasing user conflicts. The RM880 permit already requires those hunting moose in Unit 23 under State regulations to obtain their permit in the unit in July, requiring an extra trip for non-local hunters. However, there is still an option for hunting by harvest ticket for a bull with a more limited season and additional antler restrictions (50-inch antlers or antlers with 4 or more brow tines on at least one side), which does not require that hunters obtain a permit in the unit.

Moose 26A

If this request is approved, Federal public lands in Unit 26A will be closed to the harvest of moose by non-Federally qualified users from Aug. 1-Sept. 30, 2021. Only Federally qualified subsistence users—those with a customary and traditional use determination for moose in Unit 26—would be able to harvest moose on Federal public lands in Unit 26A. Hunting of moose, by non-Federally qualified users, would still be permitted on State lands in the unit as well as below the mean high water line on many waterways within Federal lands. Currently, the State’s non-resident season is closed and harvest by non-local residents in Unit 26A is very low, at an average of less than one per year (**Table 13**). Therefore, approving this request would probably not contribute to conserving the moose population.

If this special action request is approved, those with a history of residency and family connection in Unit 26A who are now residing outside of the region would not be able to harvest moose on Federal public lands in Unit 26A Aug. 1-Sep. 30, 2021, as they are not Federally qualified subsistence users. Non-Federally qualified users who are Native corporation shareholders would still be able to hunt on Native corporation lands under State regulations.

Closing to non-Federally qualified users would alleviate concerns on the part of Federally qualified subsistence users about the impact of non-local moose hunters on the moose population, as well as possible effects of non-local hunters—including those seeking out moose—on the behavior of migrating caribou. However, the Unit 26A Controlled Use Area is already in effect in this subunit under State regulations. The Unit 26A Controlled Use Area is closed to the use of aircraft for hunting moose from Jul. 1-Sep. 30 (covering the proposed closure of Aug. 1-Sep. 30), as well as Jan. 1-Mar. 31. This Controlled Use Area does not apply to use of aircraft between publicly owned airports for hunting moose. The

additional effect of this closure would be to stop foot and boat traffic associated with the single moose harvested on average per year by non-local users in Unit 26A.

OSM CONCLUSION

Support WSA21-01 with modification to only close moose hunting to non-Federally qualified users in Unit 23 from Aug. 1-Sep. 30, 2021.

Justification

Caribou in Units 23 and Unit 26A

While aircraft and non-local hunting activity can affect caribou behavior in the short-term, they have not been shown to have long-term impacts on caribou migration through the Noatak NP. While the factors affecting caribou migration are poorly understood and warrant additional research, the closure of Federal public lands is not currently warranted.

The Board has already closed areas of historically high user conflicts around Noatak in Unit 23 to caribou hunting by non-Federally qualified users, while national parks (CAKR, GAAR, KOVA) in the unit are always closed. Testimony from subsistence users and GPS-collared caribou data indicate delays in caribou crossing the Kobuk River, but not the Noatak River. Therefore, closure of the Federal lands south of the Kobuk River, including Selawik NWR, BELA, and some BLM lands would not affect the timing of caribou migrating between the Noatak and Kobuk Rivers, while most Federal lands north of the Kobuk and south of the Noatak River in Unit 23 (other than the eastern portion of Noatak National Preserve) are already closed. Additionally, closure of lands in Unit 26A are not expected to prevent delays in fall migration south of the Noatak River as these lands are located north of the Noatak River.

If Units 23 and 26A are closed to the harvest of caribou by non-Federally qualified subsistence users for August and September of 2021, user conflicts and disruption of caribou movement may increase on State lands, particularly along the upper Kobuk River. Additionally, non-Federally qualified users would still be able to access and harvest caribou on gravel bars below the mean high water mark within Federal public lands as these areas are considered State land. A closure based on the disruption of aircraft traffic on migrating caribou would also pose an unnecessary restriction on non-Federally qualified users accessing these units by means other than airplanes. Aircraft traffic from other users such as recreational boaters would still occur.

Moose in Unit 23

This request seeks to reduce moose harvest during the peak of the hunting season by non-Federally qualified users to protect a declining population that is important to Federally qualified subsistence users. There are substantial conservation concerns that threaten the viability of the population. Surveys indicate substantial declines in almost every survey area, and population estimates are below State objectives. Additionally, the harvestable surplus has likely been exceeded. Regulatory changes have been made to reduce moose harvest and promote population recovery in Unit 23 under both Federal and State regulations since 2017. However, moose populations have continued to decline. Approval of this request

could aid in the recovery of the Unit 23 moose population by reducing moose harvest by non-Federally qualified users.

Moose in Unit 26A

Currently, harvest by non-local residents in Unit 26A is very low, at an average of one per year. Therefore, approval of this request would probably not contribute to conserving the moose population. The Unit 26A Controlled Use Area is already closed to the use of aircraft for hunting moose from July 1 to September 30 as well as January 1 to March 31.

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Report to Yukon Kuskokwim Delta Regional Advisory Council Winter 2021

Report prepared by Serena Fitka and Catherine Moncrieff

Yukon River Drainage Fisheries Association Annual Board meeting:

April 27 & 28, 2021 in Fairbanks, Alaska

Due to COVID-19, our Annual meeting was held in person for the YRDFA Delegation and virtually for those who wished to attend. Both Board of Directors and Alternates were in attendance, which captured the majority of the Yukon River communities. 20 representatives were in attendance in-person and 6 attended virtually over the course of the 2 days of meetings.

The delegation gave community reports, elections took place, Bylaws were updated and 5 of the 6 resolutions were passed. The Annual meeting began with a River Blessing with Stanley Pete from Nunam Iqua, Esther McCarty from Ruby, Dorothy Shockley from Manley Hot Springs, and Paul Williams from Beaver. With the low returns of our salmon, YRDFA felt it was necessary to start incorporating our traditional values when coming together to talk about our salmon. As the YRDFA Delegation reconvened a moment of silence for the passing of Andrew Firmin from Ft. Yukon and reflection of his leadership on the Board for the past 10 years. We had the honor to have his parents in attendance along with his partner, Kara'lisa Trembley and presented the family with Andrew's award of service and dedication as a long standing YRDFA Board member.

The meeting continued with community reports from the Delegation, which reported high water throughout the summer and poor fishing conditions. After lunch, 3 guest speakers were online to give a presentation. Jill Klein with the Bering Sea Fishermen's Association gave an update on the Yukon River Comprehensive Salmon Plan. John Linderman, Co-Chair of the Yukon River Panel and Regional Supervisor for the AYK Region gave a PowerPoint presentation about the Yukon River Panel. Our final presentation was given by Emily Groves with Foraker on Fund Development.

RESOLUTIONS:

FAILED - Resolution: 2021-01: Introduced by Native Peoples' Action - Rochelle Adams-Protecting the Yukon River: Opposing Oil & Gas Development in the Yukon Flats

PASSED - Resolution: 2021-02: Support the Bering Sea Pollock Fishery Conservation of Yukon River Chinook and chum salmon

PASSED - Resolution: 2021-03: Escapement Goals for One Full Life Cycle

PASSED - Resolution: 2021-04: Transboundary Mining in the Yukon River Watershed
Joining the SE transboundary coalition

PASSED - Resolution 2021-05: Concern about Hatchery Production

PASSED - Resolution 2021-06: Concern about Oil & Gas Development in the Yukon
Flats

2021 Elections

Fishing District	Term	Member	Community
Coastal, Seat 1	3 years	Lester Wilde	Hooper Bay
Y-1, Seat 1	3 years	Stanley Pete	Nunam Iqua
Y-2, Seat 1	3 years	Bill Alstrom	St. Mary's
Y-2, Seat 2	2 years	Mike Peters	Marshall
Y-3, Seat 1	3 years	Alfred Demientieff, Jr	Holy Cross
Y-4, Seat 1	3 years	Fred Huntington, Sr.	Galena
Y-5, Seat 1	3 years	Charlie Wright	Rampart
Y-5, Seat 2	2 years	Stan Zuray	Tanana
Y-6, Seat 1	3 years	Tim McManus	Nenana
Koyukuk River	2 years	Pollock Simon, Sr.	Allakaket
Flats, Seat 1	2 years	Jan Woodruff	Eagle
Alternates:			
Y-1 Seat 1	3 years	Paul Andrews	Emmonak
Y-2 Seat 1	3 years	VACANT	
Y-2 Seat 2	2 years	VACANT	
Y-6, Seat 1	3 years	VACANT	
Yukon Flats	2 years	Rochelle Adams	Beaver



YR DFA Board of Directors and Alternates at Annual Meeting, Fairbanks, April 28, 2021.

Yukon River Salmon Summer Pre-season Preparation Meeting:

The Yukon River Summer Pre-season meeting was held in Fairbanks on April 29, 2021 with the YR DFA Delegation in attendance and other participants joined in via Zoom. Limited in-person capacity was due to COVID-19. Prior to the Pre-season meeting, YR DFA hosted a series of Yukon River fishing district meetings. These meetings were developed to provide the fishers in their districts with the additional opportunity to provide discussion and formulate feedback to fishery managers during the Pre-season meeting. All meeting minutes were presented to the fishery managers for their review. Reports of the fishing district meeting were conducted during the Pre-season meeting.

2021 Fishery Disaster Request:

A group of Yukon River organizations have been meeting to discuss the 2021 fishery disaster request. The Yukon Delta Fisheries Development Association, Tanana Chiefs Conference, Alaska Village Council Presidents, and YR DFA will be submitting a joint letter similar to last year's request to the Governor. We will be asking for support from all entities; such as, the RACs, ACs, AFN, etc. to provide support during these hard times the Yukon River communities are facing. The group has also discussed the importance of reaching out to our State and US delegation to encourage the Governor to make a quick request to the Department of Commerce for the 2021 season. We understand the Department's requirement to provide adequate reporting when requesting a fishery disaster; however, the fact that all communities were unable to harvest any Chinook, summer or fall chum salmon for subsistence states clearly shows we are in a disastrous situation.

In-Season Salmon Management Teleconferences:

The In-Season Salmon Management Teleconferences began on Jun 1, 2021 . In preparation for the teleconferences, posters were sent to all communities along the Yukon River including Canadian First Nations. A meeting was held with the fishery management team to discuss any concerns or issues associated with the upcoming season. The last two years the number of participants and length of the calls have increased. We reflected the approximate cost

association for each call if all participants stayed on for the duration of the call. The teleconference rate is \$0.09 per participant per minute.

Date	Number of Participants	Length of call in mins.	Approximate Cost
06/01/21	46	81	\$335.34
06/08/21	71	130	\$830.70
06/15/21	94	140	\$1184.40
06/22/21	83	140	\$1045.80
06/29/21	138	149	\$1850.58
07/06/21	101	199	\$1808.91
07/13/21	110	172	\$1702.80
07/20/21	77	128	\$887.04
07/27/21	71	120	\$766.80
08/03/21	65	82	\$479.70
08/10/21	67	102	\$615.06
08/17/21	Info not available		
08/24/21	During time of		
08/31/21	reporting		

Due to fishing closures throughout the Yukon River drainage we anticipated a high call volume. We appreciated all the questions, comments, and observations during the in-season teleconference. We heard the people's concerns about traditional loss and the struggles of food security that will likely occur over the course of the winter season. The other concerns we heard, which we will also make a priority, are bycatch in the Bering Sea, Area M, and climate change.

In-Season Subsistence Salmon Survey Program: Through the Inseason Subsistence Salmon Survey Program, YRDFA hires a local person in 10 communities along the Yukon River stretching from Alakanuk to Eagle to survey fishers during the Chinook salmon season in their community. The observations fishers share with YRDFA surveyors are summarized, by community to protect anonymity, and then shared with Yukon River Inseason Managers and the Yukon River community through the In-season Salmon Management Teleconferences. This important communication tool helps managers know what fishers are seeing and how they are doing in their communities. This year, we were able to hire 10 surveyors and hold a mixed in-person and virtual training event in April. Although it was a difficult season with little salmon

fishing, our surveyors did their best to survey and represent the fishers in their community. As we write this report, we are just wrapping up this season with the upper river communities. By your fall meeting time we will have a summary report and evaluation of the season. This project is funded by the FRMP through March of 2024.

Traditional Ecological Knowledge of anadromous fish in the Yukon Flats with an emphasis on Draanjik drainage: This project, funded by the FRMP, was extended until March of 2022 due to the pandemic. Instead of in-person community review meetings, we developed and sent a Community Review document to each participant and tribal council in the study for their feedback and followed up with phone calls. The TCC staff is currently working on the biological fieldwork this summer. They are conducting an aerial survey of the Kevinjik Creek in the Teedraanjik drainage to identify and locate a Coho salmon spawning area (Nèhdlij Ni'inlii) that has not yet been added to the Anadromous Waters Catalog. This location has been identified by traditional knowledge and with positive eDNA analysis. Additional fieldwork was planned for the spring and summer of 2021 to document rearing juvenile and spawning adult Chinook and chum salmon. If possible we will provide more updates at your fall meeting.

OTHER PROJECTS:

They Told Us There'd Come a Time, Conserving Fish, Preserving Tradition on the Yukon River, A catalog of Elders Warnings: This project, funded by the North Pacific Research Board, has YRDFA partnering with the Tanana Chiefs Conference young adult Emerging Leaders to research documented Local and Traditional Knowledge of salmon and search for advice or warnings from the Elders. The goal of the project in year one is to review Local and Traditional Knowledge archives for warnings from Elders about salmon shortages or threats. Early in the new year we had a virtual training workshop to learn how to access the archives. In June, the PI attended the Denakkanaanga gathering in Fairbanks to provide an update on the project. Additionally, the Emerging Leaders and the PI have met twice in Fairbanks at the UAF Rasmuson Library to spend time looking through the archives. We plan to continue working on the archives this year and next year we will do some analysis and begin interviewing contemporary Elders with questions that arise from our work in year one.

Integrating Local and Traditional Ecological Knowledge into Anadromous Waters Cataloging and Fish Inventories of select drainages of the Tanana and Yukon rivers 2021-2023: This funded, project by the Alaska Sustainable Salmon Fund (AKSSF), is a partnership between YRDFA and the Alaska Department of Fish and Game. Together, we are working with the communities of Tanana, Nenana, and Manley Hot Springs to identify important areas with anadromous fish and other fish for investigations to nominate areas for the anadromous waters catalog and the fish inventory. This summer we traveled to all three study communities and held LTK interviews and mapping activities with knowledgeable fishers and hunters. We were able to conduct a total of 20 interviews; five in Manley Hot Springs, five in Tanana, and ten in Nenana. These knowledgeable subsistence providers shared important information about fish locations. Next summer ADF&G staff will attempt to document fish presence, rearing and spawning in these locations through river boat and helicopter surveys and include them in the fish inventories and anadromous waters catalog.



2021 Post-Season Summary Current as of August 13, 2021

In-Season Management + Subsistence Fishing Opportunities

During the Chinook salmon fishing season – beginning in early May through the end of July – KRITFC In-Season Managers and Elder Advisors meet regularly with U.S. Fish and Wildlife staff to assess the salmon runs and decide whether or not to open the river to subsistence fishing. Their decisions are guided by Traditional Knowledge and local observations and data from Bethel Test Fish, Bethel sonar, and community harvest data.

The KRITFC 2021 In-Season Managers are:

- James Nicori (Kwethluk) – Upper Middle River
- Jacki Cleveland (Quinhagak) – Lower River
- Megan Leary (Napaimute) – Upper River
- Avery Hoffman (Bethel) – Lower Middle River
- Robert Lekander (Bethel) – Elder Advisor
- James Charles (Tuntutuliak) – Elder Advisor

These In-Season Managers, KRITFC staff, and fisheries management staff from the Yukon Delta National Wildlife Refuge – namely Boyd Blihovde, Aaron Moses, Spencer Reardon, and Christopher Tulik – met throughout the king, chum, and sockeye salmon season to determine federal subsistence fishing opportunities. Qu yana, Tsen’ahn, Thank you to James, Jacki, Megan, and Avery for your tireless work providing Traditional Knowledge, river-wide insights, and management recommendations this season; to Robert and James for sharing your wisdom and guidance; and to the Yukon Delta NWR staff for your partnership and collaborative leadership.

KRITFC and U.S. Fish and Wildlife provided for 11 subsistence fishing opportunities (drift and set gillnet) this season after the USFWS in-season manager closed the main stem Kuskokwim to gillnet fishing for all salmon starting June 1. These opportunities were:

- June 2 (set gillnet)
- June 5 (set gillnet)
- June 9 (set gillnet)
- June 12 (drift and set gillnet)
- June 15 (drift and set gillnet)
- June 19 (drift and set gillnet)
- July 2 (drift and set gillnet)
- July 9 (drift and set gillnet)
- July 10-11 (set gillnet)
- July 16 (drift and set gillnet)
- July 17-18 (set gillnet)

The estimated salmon harvests in the main stem lower Kuskokwim River (from Tuntutuliak to Akiak, excluding fish harvested from non-Chinook salmon spawning tributaries) during these opportunities were:

- Chinook salmon: 21,560 fish
- Sockeye salmon: 22,910 fish

- Chum salmon: 4,060 fish

These numbers come from harvest estimates produced by KRITFC and ONC with Bethel area harvest information provided by ONC; community-based harvest information provided by KRITFC harvest monitors (see more information about the CBHM Program below); and aerial surveys provided by USFWS at Yukon Delta NWR. Complete harvest estimates from each opportunity can be found on our website:

kuskosalmon.org/2021-fishing-info.

•••••

CBHM Program

The Community-Based Harvest Monitoring (CBHM) program was created by Bering Sea Fisherman’s Association (BSFA) in collaboration with KRITFC in 2017 to monitor subsistence fish harvests in lower river villages and increase community involvement in fisheries management and monitoring. In 2021, KRITFC coordinated the program and jointly funded it with Yukon Delta NWR.

Most of the 2021 harvest monitors were veterans of the program. Each harvest monitor surveys fishers in their village community after federal subsistence fishing opportunities. This season began with training on May 26. Harvest monitoring occurred during 10 of the 11 opportunities.

The 2021 CBHM program harvest monitors – and the communities in which they live and surveyed – are:

- James Heakin (Eek) – new harvest monitor
- Brianna Dock (Tuntutuliak)
- Isaiah Pavila (Tuntutuliak)
- Emmitt Nicori (Napakiak)
- Wesley Nicholai (Napaskiak)
- Dezmin Johnson (Napaskiak) – new harvest monitor
- Colleen Andrew (Kwethluk)
- William Egoak (Kwethluk)
- Alfred Epchook (Kwethluk)

Altogether, these 9 harvest monitors collected 540 total interviews from subsistence fishers. Data from each of these interviews informed KRITFC and USFWS managers about fishing trip locations, soak times, mesh and net sizes, and numbers of salmon and non-salmon species harvested.

A big quyanana to each of these harvest monitors for working with their communities to collect invaluable salmon harvest information after long days of fishing for their own families.

•••••

Takotna River Weir Project

The Takotna River provides the longest data set (18 years including 2021) of spawner returns at the Kuskokwim headwaters. Located about 2 miles upstream of the village of Takotna, it employs local weir technicians and is run in partnership with the Takotna Village Council and Alaska Department of Fish & Game.

The 2021 Takotna River weir crew faced high water conditions during the installation period of the weir. However, they were able to have the weir installed and fish-tight by July 4. Weir removal will occur in mid-August, and escapement estimates will be finalized at the end of the season (after the time of this writing).

Members of the 2021 weir crew are:

- Robert Perkins – crew leader
- Manuel Martinez – assistant crew leader
- Joe Martinez – weir technician
- Richard Watcher – weir technician
- Shawn Gover – weir technician
- Mike Dopler – weir technician

Tsen’ahn, Quyana, Thank you to each of these weir technicians for your dedication and perseverance through the season.

Note: High water conditions and COVID-19 precautions prevented installation and operation of the **Kwethluk River weir**, typically run in partnership between the Organized Village of Kwethluk, KRITFC, and USFWS. No data was collected from this weir in 2021, nor in 2020.

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In-Season Community Involvement

KRITFC strives to stay connected to and in communication with fishers throughout the river during the fishing season by:

- Holding weekly Monday river-wide teleconferences with the Yukon Delta NWR. Fishers from Tuntutuliak to McGrath joined these calls to ask about management decisions, find out the next federal subsistence fishing opportunities, and share Traditional Knowledge and fishing updates from their communities.
- Participating in ADF&G’s Kuskokwim River Salmon Management Working Group meetings each Wednesday. KRITFC’s delegates to the Working Group this season are Avery Hoffman and James Nicori, but other KRITFC Fish Commissioners, Executive Council members, In-Season Managers, and staff regularly joined these meetings as voting and public members.
- Joining the Yukon Delta NWR and ADF&G staff on KYUK’s Fish Talk, held weekly on Thursdays. Fishers from the Kuskokwim and Yukon Rivers called in to voice concerns, ask federal, state, and Tribal managers about fishing opportunities, and share fishing updates from their communities.

KRITFC wants to hear from and speak with fishing communities throughout the Kuskokwim River drainage, whether in-season or out-of-season. If you would like us to speak with your Tribal or village council, please contact us at info@kritfc.org or (907) 545-6206.



U.S. Fish & Wildlife Service

Summary of Activities

Kanuti National Wildlife Refuge



Photo credit: USFWS/Tina Moran

**Prepared for Western Interior Regional Advisory Council
August 2021**

Kanuti National Wildlife Refuge
907-456-0329 or 877-220-1853
kanuti_refuge@fws.gov
<http://kanuti.fws.gov/>

➤ ***Staffing Updates***

While not employees of Kanuti Refuge, we do have two new federal law enforcement officers supporting the Refuge. Rob Hirschboeck, the new Patrol Captain for the North Alaska Law Enforcement Patrol Zone, (which includes Kanuti, Yukon Flats, Arctic, Selawik, Togiak, Yukon Delta and Tetlin Refuges, as well as the Koyukuk/Nowitna/Innoko Complex), arrived in Alaska this summer. Officer Hirschboeck most recently comes from the Western Montana National Wildlife Refuge Complex in Kalispell, Montana, and has more than 20 years of experience working in law enforcement at refuges throughout the western and mid-western states. He is stationed in Fairbanks, and supervises all of the law enforcement officers in the zone, including Jared Long, who also arrived in Alaska this summer and is the primary officer assigned to Kanuti Refuge. Officer Long hails from Pueblo, Colorado, graduated from the Federal Law Enforcement Training Center in 2020, and recently completed his field training at South Texas National Wildlife Refuge Complex. He is also making his home in Fairbanks.

➤ ***Fish, Wildlife and Habitat Research and Monitoring***

Lynx Movements Study:

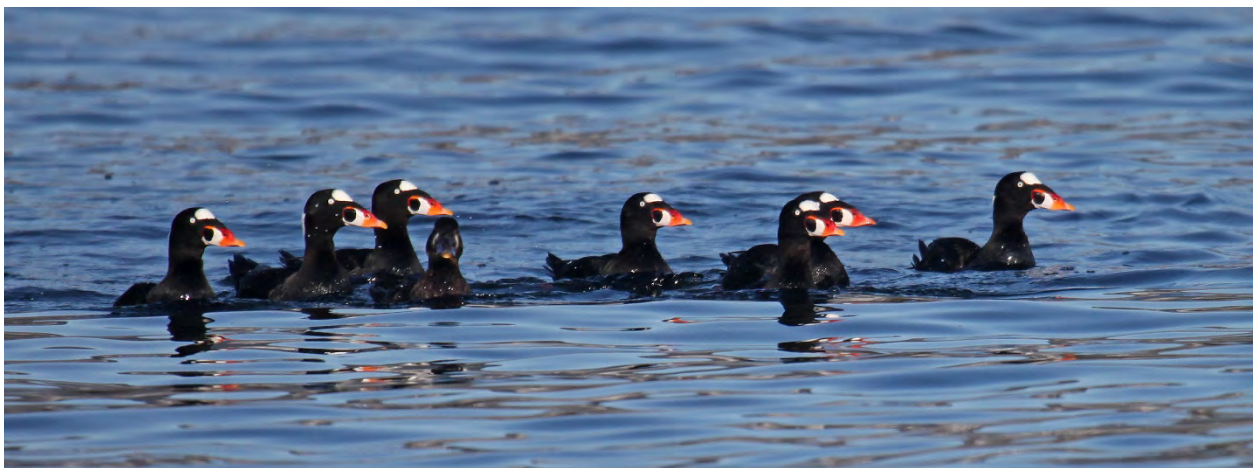
Kanuti Refuge has been part of an Interior-wide study of lynx movements along with Koyukuk/Nowitna/Innoko, Yukon Flats, and Tetlin Refuges, Gates of the Arctic National Park, and the University of Alaska Fairbanks. In 2018 and 2019, we fitted GPS collars on 20 lynx near Bettles. About a half dozen lynx were caught by trappers last winter, some collars' batteries have since died, but the collars for three lynx remain on the air. The impressive movements of these three lynx through May 2021 are shown below.



Movements of three lynx collared near Bettles in late winter 2018 (2 lynx) and 2019 (1 lynx).

Breeding Scaup/Scoter Survey:

On June 11, 2021, we completed our annual aerial survey for breeding pairs of scaup and scoters. At this time we do not yet have results for that survey.



Of breeding scoters, Kanuti Refuge tends to get mostly Surf Scoters. USFWS photo by Tim Bowman

Drained Lake Reconnaissance:

In mid-June 2021, Refuge staff investigated the water level of a lake just northeast of Kanuti Lake Cabin on the north side of the Kanuti River. This lake has been historically popular for the drop-off and/or pick-up of moose hunters. Before last fall, the lake was long and deep, providing a suitable and convenient spot for floatplane operations. However, in late September 2020, a couple hunters reported a dramatic, overnight loss of water in the lake, requiring hunters to be shuttled via very small planes to larger nearby lakes like Taiholman for departing the Refuge. This June's reconnaissance showed that two beaver dams, one large and one small, apparently breached last September, causing considerable water to flow out of the lake and into the Kanuti River. The lake is now split into two smaller, even shallower lakes with ample mudflats. It is no longer safe for floatplane operations, causing hunters and outfitters to look for sites elsewhere for moose hunting opportunities. With the water level having dropped so much, we saw evidence of many sticks penetrating the water's surface, suggesting that some time in the past, the lake had been a shrubby meadow during a similar period when beavers failed to maintain the dams. Until beavers restore the dams at the lake's outlet to the river, it will likely remain shallow for the foreseeable future.



West end of drained lake described above. Note the extensive mudflat. Even the raised grassy area in foreground would have been underwater before the beaver dams breached in September 2020. USFWS photo by Tina Moran.

Molting Goose Survey:

We completed our annual aerial molting goose survey on June 30, 2021. The crew surveyed line transects covering Greater White-fronted Goose (“white-fronts”) habitat in the Kanuti River watershed roughly from the Kilolitna River to the “Mud Lakes” (*łaats Kkokk’e*). We generally see over 90% of our molting white-fronts in this core area (one of three areas surveyed in most years).

For white-fronts this year, the crew saw 257 birds, all adults. Most (251) white-fronts were in two large flocks at the Mud Lakes; these lakes annually hosts the most white-fronts. They also saw 16 adult and 21 young Canada Geese.



A ground-based crew did observe white-front families on the Kanuti River one week before, but no young were detected during the aerial survey. USFWS photo by Tina Moran.

Beaver Cache Survey:

In late September 2020, we resurveyed the refuge with airplanes to estimate beaver caches (food piles) on the Refuge. We use this cache survey to monitor beaver abundance and track distribution on the Refuge. We last completed this survey in 2010 when we estimated 1,104 caches (with confidence range of 933-1,274). The 2020 results are not yet available.



USFWS photo of a beaver cache adjacent to an active lodge in Kanuti Refuge.

Salmon Studies: Henshaw Creek Weir

A salmon escapement monitoring project on Henshaw Creek was first established in 1999 by the U.S. Fish and Wildlife Service. A counting tower was used in 1999 to enumerate Chinook salmon and summer chum salmon. The project switched to an adult salmon weir in 2000 and in 2007, Tanana Chiefs Conference began operating the weir.

The weir was not operational in 2020 due to the pandemic. Tanana Chiefs Conference did open the weir this summer but results were not available at the time we finished this report.

Dalton Highway weed reconnaissance

In late June, Service personnel who focus on invasive species surveyed for weeds, primarily white sweetclover, along and near the Dalton Highway between the Kanuti and South Fork Koyukuk Rivers. The crews surveyed around and bridges and about 0.5 to 1.5 miles downriver

of the bridges for the Kanuti River, Fish Creek, South and North Forks of Bonanza Creek, Prospect Creek, Jim River 1, 2 and 3, Douglas Creek, and the South Fork Koyukuk. No weeds were detected along any of the waterways, despite there being white sweetclover near the bridges. White sweetclover tended not to move down the bank.

Moose Population Survey

Kanuti Refuge and the Alaska Department of Fish and Game have begun making plans for a fall 2021 moose survey. We have lacked adequate survey conditions in recent years so we hope things all come together this fall/early winter for a successful survey effort.



Photo of a calf sticking tightly to its mother as they swim right past Kanuti Lake Cabin in June 2021. USFWS photo by Tina Moran.

➤ **Fire Management**

Wildfire Activity:

On June 18, 2021, Alaska Fire Service discovered two small wildfires in Kanuti Refuge, both east of the South Fork Koyukuk River. The “Rabbit” fire was 5 acres upon discovery and remained

that size. The “Hickel” fire was discovered at 300 acres and ultimately grew to 357 acres before going out naturally.

➤ **Public Use Management**

Special Use Permits:

This year we issued special use permits authorizing three air transporters and two air taxi operators to conduct commercial operations in Kanuti Refuge.

Law Enforcement:

At the time of this report, North Alaska Law Enforcement Patrol Zone officers plan to conduct aerial and boat-based law enforcement patrols in the refuge during the moose-hunting season.

Outreach and Environmental Education:

Due to our commitment to prevent the spread of COVID-19 into rural communities we work closely with, we were unable to offer the Henshaw Creek Weir Science and Culture Camp. We look forward to hosting it again next year if conditions allow.

Questions?

If you have any questions about the Refuge, feel free to call us at 877-220-1853, or stop by one of our offices. Our headquarters office is located in the Fairbanks Federal building at 101 12th Avenue. Our field station is located near the airport in Bettles, with the Gates of the Arctic National Park and Preserve ranger station and visitor center.



Follow us on Facebook!

<https://www.facebook.com/Kanuti.Refuge/>





Preliminary 2021 Yukon River Chinook and Summer Chum Salmon Fisheries Review

Fall Regional Advisory Council Meeting Packet All data current as of August 9, 2021

Presented by the U.S. Fish and Wildlife Service Yukon Team
Fairbanks Wildlife Conservation Office
101 12th Avenue, Rm 110
Fairbanks, AK 99701
Fax (907) 456-0454

Holly Carroll, Yukon River Subsistence Fishery Manager

I joined Service as the Federal manager in November, 2020, and look forward to connecting directly with Yukon Tribes, fishermen, and all stakeholders. Please contact me at:

Phone: (907) 351-3029

Email: holly_carroll@fws.gov

Gerald Maschmann, Yukon River Subsistence Fishery Asst. Manager

I've been working on the Yukon River since 2003 assisting the Federal Manager in fulfilling our mandate to protect Yukon River fisheries for future generations of subsistence users.

Phone: (907) 456-0406

Gerald_Maschmann@fws.gov

Keith Herron Ivy, Yukon River Subsistence Fishery Asst. Manager

I joined Service as a Biologist and assistant manager focused on increasing tribal consultation and youth outreach in March 2021. I look forward to working with Yukon Tribes, fisherman and stakeholders. Please contact me at:

Phone: (907) 312-3397

Keith_Ivy@fws.gov

This summary is compiled in cooperation with the Alaska Department of Fish and Game (ADF&G)

The Yukon River summer management season is nearly complete as of this writing (August 10, 2021) and the tail end of the Chinook Salmon run is passing the border into Canada. Much of the information in this report is preliminary. Fall season management is currently in full swing and a complete review could not be included as of this writing. The preliminary 2021 Yukon River fall Chum and Coho salmon fisheries review will be presented at the winter Regional Advisory Council meetings.

Tribal Consultation and Public Outreach

The U.S. Fish and Wildlife Service (Service) has a core mission to consult with Federal Tribes and the Yukon team has been working to expand and improve government-to-government consultation. In May, the subsistence fishery manager, Holly Carroll, sent the Preseason Salmon Outlook flier to 55 Yukon drainage Tribes introducing herself as the new manager, seeking feedback, guidance, or any discussion they want to have regarding the fisheries management strategy for 2021. The team's Keith Herron Ivy followed up with phone calls to each Tribe to make sure they are getting the necessary information about fishery management and to connect with them on any concerns they may have. We appreciated the direct communication our management team had with Tribal members in an effort to have meaningful participation in decision-making. We recognize the importance of coordination, consultation and follow-up between the Service's subsistence management team and the Federally recognized Tribes living along the Yukon River and we look forward to creating and maintaining effective working relationships.

We also engaged in public outreach by sending the Outlook flier presenting the finalized pre-season management strategy to all Yukon River households on May 13 and released as a cooperative ADF&G and Service advisory announcement #1:

<http://www.adfg.alaska.gov/static/applications/dcfnewsrelease/1262168922.pdf>

The outlook and management strategy were discussed in depth at the following meetings: Yukon River Panel, Yukon River Intertribal Fish Commission (YRITFC) preseason meeting; and Yukon River Drainage Fishermen's Association (YRDFA) Board meeting and Public preseason fishermen's meeting. Inseason assessment data and management actions were discussed weekly on the Tuesday YRDFA teleconferences which were widely attended this season, and often allowed for up to two and a half hours of discussion each week.

Throughout the season our staff was responsive to daily requests from community members by phone or over email on many topics around salmon management in dozens of communities. This gave us input into our decision-making and enabled us to share relevant in-season salmon management information.

2021 Yukon River Chinook and Summer Chum Salmon Season Outlook

The Chinook Salmon run was forecasted to be similar to or smaller than 2020, with a drainage-wide outlook of between 102,000 to 189,000 fish. The outlook sent to households and discussed at preseason meetings indicated the need for front end closures up through the midpoint of the run, and that these actions would be taken based on the forecast and that more closures might be needed or that fishing might occur after the midpoint, depending on inseason abundance of salmon. The summer Chum Salmon run was forecasted to be near 1.2 million fish and provide

for escapement, normal subsistence harvests as well as additional commercial, personal use, and sport fishing opportunities.

Management Approach and Summer Season Review

The State of Alaska has the management authority on the Yukon River. Service's Federal management team analyzes assessment data and works closely and cooperatively with ADFG's management team to produce a management strategy preseason, and to make daily inseason decisions. The Federal inseason manager is delegated authority from the Federal Subsistence Board to issue emergency special actions when necessary to ensure the conservation of a healthy fish population, to continue subsistence uses of fish, or for public safety reasons. Management actions are decided upon by consensus and advisory announcements are crafted by both teams together. Because of this approach, there has not been a need for the federal manager to take special actions for more than a decade. And hopefully, this cooperative management has made fishery management actions clearer to all users and areas of the river.

As per the pre-season management strategy, subsistence salmon fishing was closed in the lower Yukon on June 2 (just as early Chinook Salmon arrived). Because of the poor outlook, tributaries and the Coastal district were also closed to salmon fishing at the start of the season. Overall, Pilot Station Sonar passage estimates indicated the drainage-wide Chinook Salmon run was near the lower end of the preseason outlook and summer Chum Salmon abundance was unexpectedly very poor at all lower river assessment with no typically large pulses seen. It was clear early in the season that the summer Chum were coming in well below the outlook and there was no harvestable surplus available for subsistence fishing for summer Chum Salmon. Unfortunately, with the poor abundance of Chinook Salmon and the critically low abundance of summer Chum Salmon, subsistence salmon fishing remained closed to salmon fishing throughout the drainage for the entire summer management season. When run sizes are so poor, there is no harvestable surplus; all salmon must escape to their spawning grounds in order to have viable returns 4, 5, and 6 years in the future. See Figures 1 and 2 for the end of season passage estimates of Chinook and summer Chum salmon compared to all previous years at the Pilot Station Sonar project. Both runs were some of the lowest on record.

The guiding principles outlined in the Alaska National Interest Lands Conservation Act (ANILCA) Title VIII acknowledge the importance of sound management principles; the importance of conservation of healthy populations of fish; and "the continuation of the opportunity for subsistence uses by rural residents of Alaska, including both Natives and non-Natives...is essential to Native physical, economic, traditional, and cultural existence..." When run sizes are so small that any harvest may have a negative impact on spawning success, we have the responsibility to manage for the conservation of healthy populations of fish. There is a need to balance the sacrifices the fishermen will experience in the current season, with the importance of the protecting the salmon returns for the fishermen and subsistence communities that will also rely on these returns 4, 5, and 6 years from now.

The drainage-wide Chinook and summer Chum salmon runs were some of the smallest on record, and with no projected harvestable surplus above what was needed to escape to the spawning grounds. The Federal manager, Holly Carroll, followed stipulations outlined in her delegation of authority by the Federal Subsistence Board as well as her obligations under

ANILCA Title VIII, Section 816 (b), which states that subsistence fishing may be closed “to assure the continued viability of such populations”. Managers allowed as much opportunity to harvest non-salmon species as possible. Subsistence fishing targeting non-salmon species was open throughout the drainage using 4-inch or smaller mesh gillnet (limited to 60 feet in length) and other legal gear for non salmon during both summer and fall seasons. After transitioning to the fall season, opportunities to harvest other salmon such as Pink and Sockeye salmon were provided with dip nets and hook and line in districts that have those species, however, all Chinook and chum salmon were required to be released alive immediately. Because subsistence fishing was closed, all other consumptive uses such as commercial, personal use and sport fishing were also closed for Chinook, summer chum and fall chum throughout the drainage.

Subsistence harvest estimates will not be available until after household surveys are completed and results finalized, typically in December. But it is likely that Yukon households will have experienced record-low harvests for Chinook, summer chum, and fall chum salmon. This represents the loss of over 190,000 salmon (based on historical harvest averages) to Yukon River families. Closures on these populations were not taken lightly, and we recognize the severe hardship to subsistence fishermen in the loss of meals and traditional practices that these closures represent.

Preliminary Escapement Overview

The drainage-wide stock abundance as indicated by Pilot Station Sonar and genetic sampling indicated a very weak run of Chinook, and despite fishing closures, Chinook Salmon counts were below average at all projects where escapement is monitored. The East Fork Andreafsky River goal was not met, and goals are not projected to be met at the Chena and Salcha rivers in the Tanana River drainage. The Henshaw Creek escapement (in the Koyukuk River drainage) was well below average. Systems with aerial-based escapement goals will be monitored, weather permitting.

Passage estimates at the Eagle Sonar as of August 9, represented approximately 90% of Canadian-origin Chinook run at the project based on late run timing (Figure 3). The estimate of 26,972 Chinook salmon may end up being one of the lowest on record and indicates the 42,500-55,000 Interim Management Escapement Goal will not be met.

The 2021 summer Chum Salmon run was the lowest on record. Estimated passage past the Pilot Station Sonar was approximately 153,500 summer Chum salmon, well below the lower end of the drainage-wide escapement goal of 500,000-1.2 million. Escapement goals at the East Fork Andreafsky and Anvik rivers were not met and summer Chum salmon escapements at the Henshaw Creek, Chena River, and Salcha River were well below average.

Preliminary Fall Season Assessment and Management as of August 9

The fall season management is underway at time of writing. The fall Chum Salmon projection, based on the relationship between summer Chum Salmon and fall Chum Salmon run sizes, was for a run size less than 300,000 fish, which is critically low. According to the State of Alaska regulatory fall Chum Salmon Management Plan, the projection does not meet the threshold of 300,000 fish needed to allow subsistence fishing. Therefore, fall season began with full closures on subsistence salmon fishing for fall Chum Salmon, which is unprecedented.

The fall Chum Salmon abundance at LYTF and Mt. Village Test Fishery (MVTf), have been well below average so far this season. The Pilot Station Sonar passage for fall Chum Salmon through August 9 was 68,496, which is well below the historical cumulative median of 306,984. The midpoint of the run for fall Chum Salmon is August 10, while a typical late year midpoint is August 15. The current projected run size is unlikely to meet the drainagewide escapement goal of 300,000-600,000 fall Chum Salmon, tributary escapement goals and Canadian treaty objectives.

Future Expectations

Given that subsistence salmon fishing was closed throughout the river, escapement was much lower than expected based on inseason estimates at Pilot Station Sonar. This is the third year in a row where the expected number of fish escaping into Canada is much lower than expected. We do not know the reasons for this yet, but law enforcement patrolled all areas of the river this season, engaging with fishermen and indicated good compliance with the fishing closures, therefore it is unlikely that large illegal harvests occurred. En route mortality of Chinook may be occurring due to environmental factors such as the observed warm water temperatures in tributaries and the mainstem Yukon River and/or the effects of the parasite *Ichthyophonus*. Service and ADF&G collected samples opportunistically this season (only on salmon naturally killed in a test fishery or caught in legal 4-inch gear) to test for prevalence and severity of *Ichthyophonus* and results of these studies and suggestions for future mortality research will be discussed at winter meetings.

Juvenile salmon research in the Bering Sea has led to an effective model for forecasting adult returns of Chinook to the Yukon River three years ahead. This model has been quite accurate and is indicating the 2022 run may be similar or smaller than the run size in 2021. Run sizes as small as we saw this year are likely to need heavy fishing restrictions to full closures in order to get enough Chinook salmon to the spawning grounds to preserve them for future generations. Fishermen should start preparing now for the eventuality that there may be little to no Chinook salmon fishing next year. Unfortunately, we do not have Bering Sea juvenile-based forecasts for Chum Salmon, although researchers are working on refining forecasting models for chum.

Managers would like to ask the Regional Council members, Tribal Governments, and other stakeholder groups for their help in preparing their communities for another poor salmon season. Post-season reviews and pre-season meetings at the Regional Advisory Councils, Tribal consultations, and with other stakeholder groups will enable us to continue to share information and communicate in a timeline manner to maximize input for future in-season decision-making. For example, fishermen on the YR DFA teleconferences reported using 4-inch gillnets to catch non-salmon species, however, many fishermen reported not having this gear. We encourage fishermen to make plans to harvest other species in years when Chinook or Chum Salmon abundance is poor, and to invest in gear types such as 4-inch, which can even be used in the winter, through the ice. If the Chinook Salmon run is poor, but Chum Salmon abundance is strong, managers may be able to allow dip net opportunity that allows the harvest of Chum Salmon, with the live release of Chinook Salmon, so investing in selective gear types such as dip nets may also be recommended.

The managers would like to acknowledge the very serious hardship this season has caused Yukon River families. We would also like to thank Yukon River fishermen for their compliance during this difficult year and commend those Tribes and communities that took steps to provide fishing gear, freezers, and came up with creative solutions to compensate for loss of salmon meals. We also thank the Bristol Bay fishermen and processors and organizations that helped to distribute non-Yukon salmon to families in many villages. Yukon fishermen have shown incredible resiliency in adapting to the changing environment and changing salmon run sizes.

Figure 1. Cumulative passage of Chinook salmon at the Pilot Station Sonar from 1995 through 2021. Passage for 2021 is preliminary, and ongoing as of August 9, 2021.

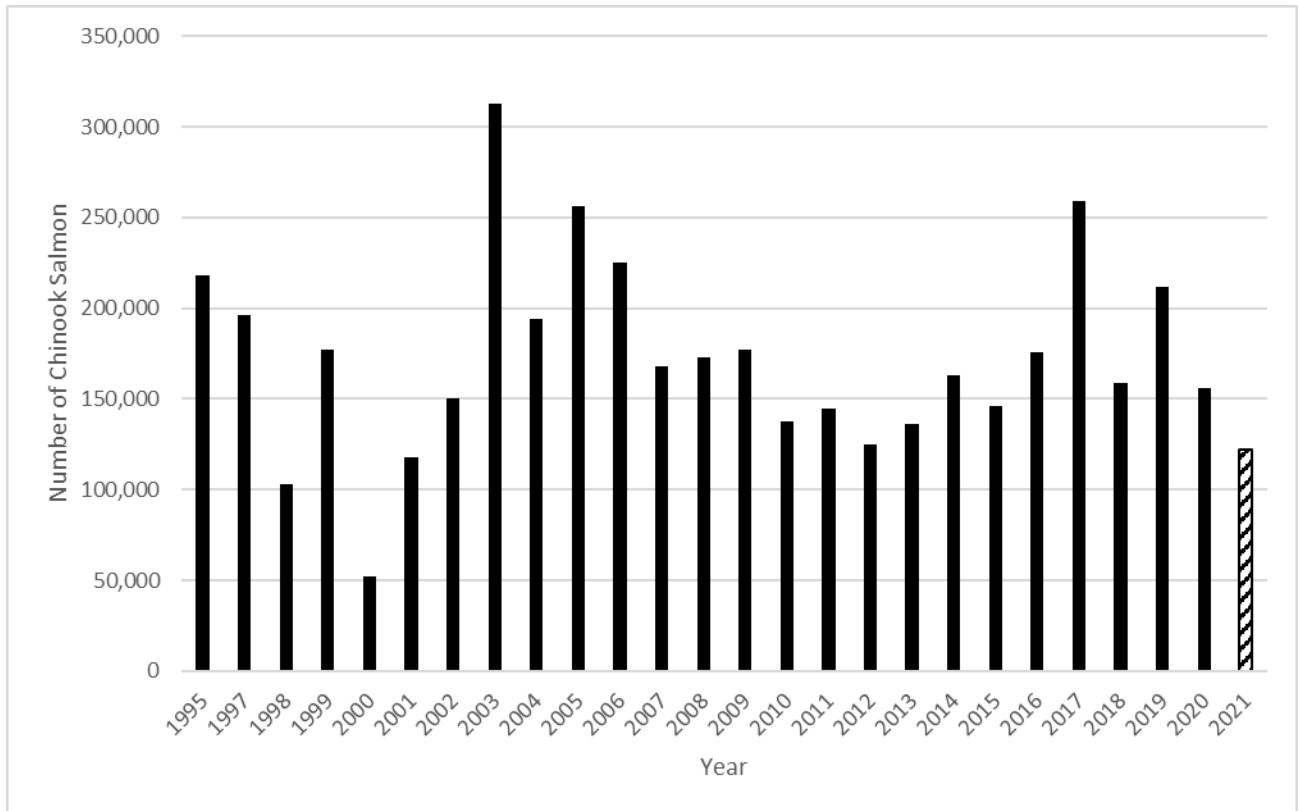


Figure 2. Cumulative passage of summer Chum at the Pilot Station Sonar project from 1995 through 2021. The dashed lines indicate the drainage-wide escapement goal range of 500,000 to 1.2 million, which was established in 2016. Passage for 2021 is preliminary but is considered complete through July 18, after which all chum are considered fall Chum Salmon.

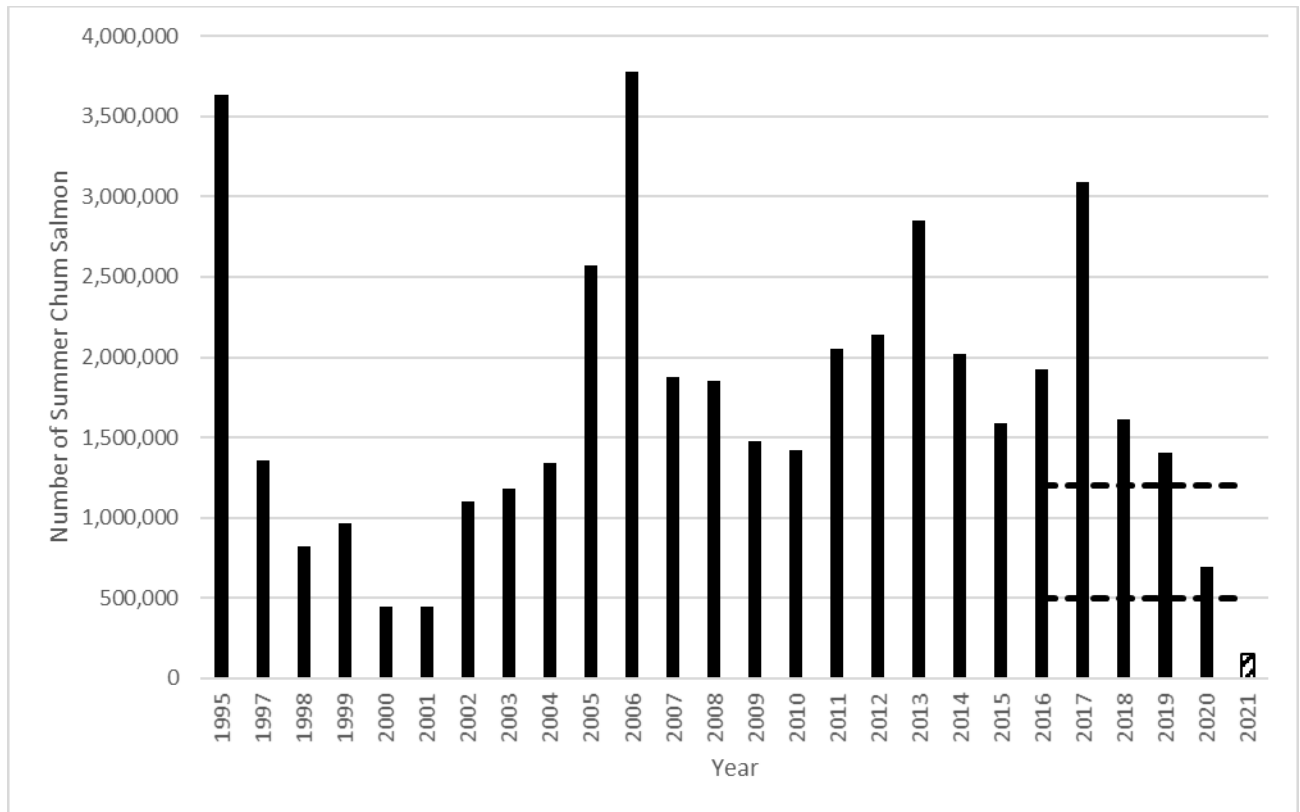
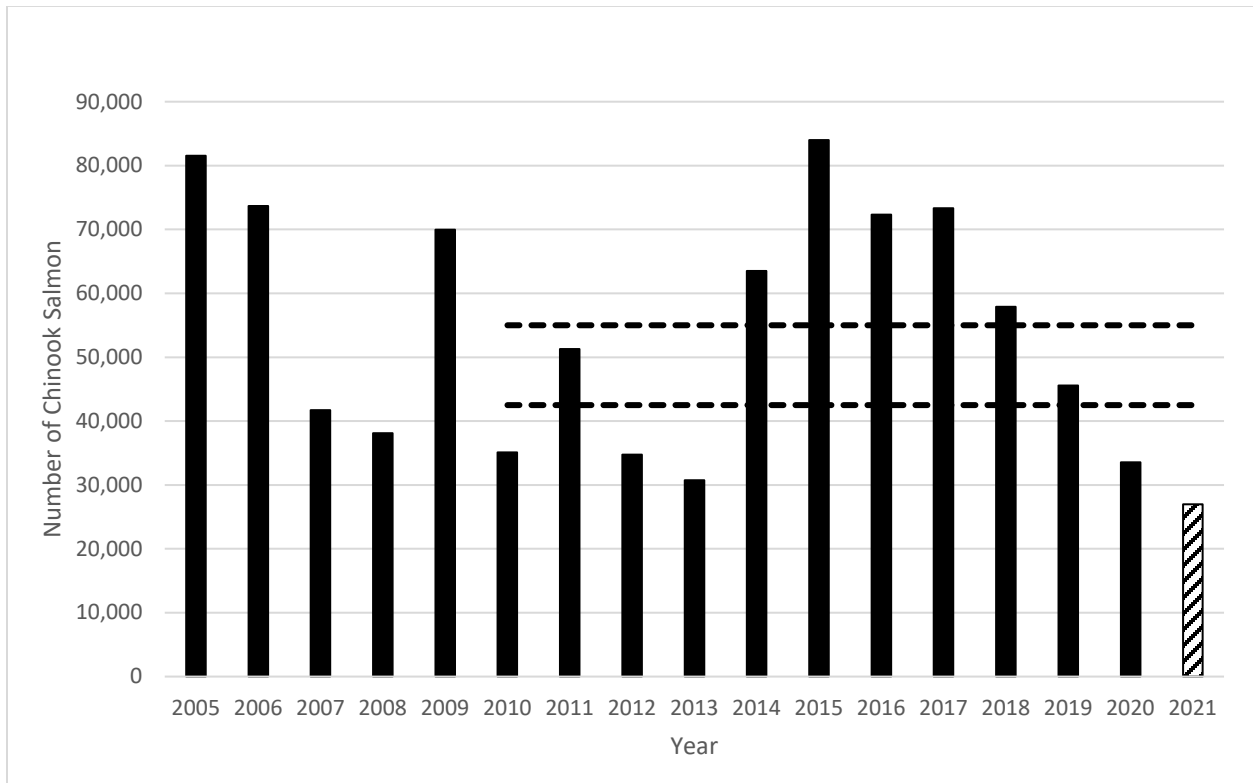


Figure 3. Cumulative passage estimates of Canadian-origin Chinook salmon at Eagle Sonar from 2005 through 2021. Passage for 2021 is preliminary, and ongoing as of August 9, 2021. The dashed lines are the Interim Management Escapement Goal range of 42,500-55,000, established in 2010.



**BLM Central Yukon Field Office
Report to the Western Interior Regional Advisory Council
Teleconference
October 13-14, 2021**

PLANNING

Contact: Chel Ethun 474-2253

- The Central Yukon Draft Resource Management Plan/Environmental Impact Statement (RMP/EIS) public comment period ended on June 9, 2021. The BLM is currently reviewing the comments received and working to craft a Final Resource Management Plan/Environmental Impact Statement (FEIS). It is anticipated that the FEIS will be released in early 2022.
- Copies of the Central Yukon Draft RMP/EIS are available for review and download on the project website: <https://eplanning.blm.gov/eplanning-ui/project/35315/510>. Additional information on the plan and planning process is available as well.

RECREATION

Contact: Bill Hedman, 474-2375

- The CYFO currently authorizes 32 Special Recreation Permits (SRPs) operating in the Western Interior region:
 - 10 commercial hunting guides (5 operating in or around the Dalton Highway Corridor)
 - 22 tour companies (3 of which are dog mushing tour guides operating out of Galbraith Lake and Chandalar Shelf).

REALTY

Contact: Sheri Wilson 474-2246

- The CYFO realty program is processing or administering the following authorizations of interest:
 - The Bettles Winter Trail right-of-way is under current authorization until 2029.
 - In January 2019, BLM authorized a 5-year right-of-way to the North Slope Borough for a staging area at the material pit at near Galbraith Lake and to construct, operate and maintain a winter trail to access the village of Anaktuvuk Pass by borough organized convoy. The route is only open when the State of Alaska, BLM, and the North Slope Borough Municipal Code standards are met. Applications for other uses of this route, such as commercial hauling, have been submitted.
 - The fiber optic lines installed by BorTek and Quintillion are authorized until 2035. BLM continues to monitor the routes as the land stabilizes and revegetates.
 - A research authorization is in place studying frozen debris lobes along the Dalton Highway which expires in 2036.
- Multi-year realty projects:
 - The BLM granted a ROW to Alaska Gasline Development Corporation (AGDC) for the Alaska LNG pipeline on December 31, 2020. See the Federal Infrastructure Projects Steering Committee's

website for additional information: <https://www.permits.performance.gov/permitting-projects/alaska-Ing-project>. AGDC will need to meet requirements of the grant before a Notice to Proceed can be issued to start construction. BLM has not seen any forward movement on this project.

- The BLM granted a ROW to the Alaska Industrial Development and Export Authority (AIDEA) for the construction of the Ambler Road on January 5, 2021. AIDEA is in the pre-construction phase of the project and BLM is working diligently to keep all lines of communication open as this project advances.

PLACER MINING

Contacts: John Barefoot 474-2250; Tara Hutchison 474-2241

- One placer mining operation is undergoing modifications to their mining plans for the 2022 mining season.
- Two new plans of operations are being processed on the following drainages: South Fork Koyukuk River and Clara Creek.
- There were eight active federal placer gold mining operations in the CYFO in 2021.

SAND AND GRAVEL

Contacts: John Barefoot 474-2250; Tara Hutchison 474-2241

- Alaska Department of Transportation and Public Facilities (ADOT&PF) continued to resurface the Dalton Highway during the summer of 2021. DOT&PF mined and crushed material at mineral material sites at mileposts 125, MP 154 and MP 253.
- There were 7 active federal mineral material sites in CYFO in 2021. There were 3 new mineral material sales out of 3 gravel pits.

WILDLIFE

Contact: Erin Julianus 474-2358; Jennifer McMillan 251-8128

- The CYFO continues to contribute to interagency efforts to track Dall's sheep abundance and population composition in the Central Brooks Range. In 2021, the BLM entered a partnership with the NPS Arctic Network to conduct surveys which included all BLM managed lands in the vicinity of the Dalton Highway. Surveys were conducted using the established distance estimation transect surveys which provide a modelled estimate of population size. Available results will be communicated by the NPS project lead, Will Deacy.
- The CYFO is continuing a study designed to locate and characterize naturally occurring mineral sources which are important habitat for Dall's sheep. Field work related to this project was conducted in 2021.
- In 2021 an aerial raptor survey was conducted by BLM contractors. Focal species were bald and golden eagles, but other cliff nesting birds were also documented. The survey area extended 2 km to the east and west of the highway between the Yukon River Bridge and Galbraith Lake as well as some areas outside of this where ground disturbing activities are most likely to occur. Results and reporting will be available by the end of 2021.

- In 2021 USGS resumed their annual Breeding Bird Surveys (BBS) nationwide. Surveys were conducted by BLM staff and volunteers in the vicinity of the Dalton Highway.

ECOLOGY

Contact: Jennifer McMillan 251-8128

- 2022 is planned as the seventh year of herbicide treatment at a closed mineral material site and the fourth year of treatment at six additional mineral material sites and the Bettles Road staging area. Treatment has been largely successful and will continue with the goals of creating weed-free material sites and removing invasive plants from heavily trafficked areas.
- Formal monitoring and inventory of various infestations of invasive plants in the Dalton Highway vicinity, including the roadside white sweetclover north of Wiseman, was conducted in 2021.
- A hand-crew contracted by CYFO commenced manual and mechanical treatment of invasive plants in June and July of 2021. Treatment sites included high priority sites not feasibly treatable via herbicide; including but not limited to the roadside infestation of white sweetclover north of Wiseman and infested areas adjacent to waterways.

FISHERIES AND HYDROLOGY

Contact: David Esse 474-2365; Matthew Whitman 474-2249

- BLM's Aquatic Assessment, Inventory, and Monitoring (AIM) program conducted stream surveys this summer in the Brooks Range along the Dalton Highway corridor and in the region around Galena.
- Multiple sites along Gold Creek were monitored for turbidity during the summer of 2021 utilizing water quality meters that logged several measurements per day. This data will contribute to an ongoing evaluation of sedimentation issues within that drainage.
- Technical assistance was provided by the BLM for a post-mining stream reclamation effort on Davis Creek, a tributary to the South Fork Koyukuk River. Approximately two-thirds of the project was successfully completed in 2021.
- In 2021, the CYFO completed the third year of its aquatic invasive species inventory and monitoring project along the Dalton Highway. Chapman Lake, near Coldfoot, was inventoried for the invasive aquatic plant elodea. No elodea was detected during the survey.

ARCHAEOLOGY

Contact: Crystal Glassburn 474-2240

- The CYFO cultural resource staff spent six days floating approximately 45 miles of the Dulbi River in July to inventory for archaeological sites. The trip was successful, and six prehistoric sites were identified that aid in understanding prehistoric land use and resource procurement along that stretch of the river. More work is planned for future years.

- CYFO cultural resource staff also completed proactive monitoring of historic cabins and mining sites near Coldfoot and Wiseman in August. The work focused on updating site locations, recording site boundaries with GPS, taking photos, and evaluating the condition of the historic sites.
- The CYFO is leading the National Historic Preservation Act Section 106 process for the Ambler Road Project (<https://www.blm.gov/AmblerRoadEIS>) and developed a Programmatic Agreement that outlines how inventory, evaluation, and resolution of adverse effects to historic properties will be completed during the life of the project. Consultation is ongoing throughout the life of the project, and the BLM continues to engage and seek input for the Section 106 process.
- The CYFO is also a consulting party for the AKLNG National Historic Preservation Act Section 106 process and has provided input for the development of a Cultural Resource Management Plan. Although FERC is the lead federal agency for the Project, it would cross about 250 miles of BLM-managed lands, including several historic properties that would need to be considered under the Section 106 process.

LAW ENFORCEMENT

Contact: Steve Mazur 474-2366

- Law Enforcement Ranger/Pilot Steve Mazur spent considerable time patrolling the Dalton Corridor both in the air and on the ground this field season. Steve coordinates diligently with other law enforcement agencies (U.S. Fish and Wildlife Service, Alaska State Troopers) to be as efficient as possible. His efforts yield many helpful positive public contacts resulting in assistance to people in need, education of the public about various potential violations, and of course enforcement of laws and regulations. His recent efforts included over three weeks straight patrolling the Dalton Corridor with LE staff from other agencies during the fall hunting season. Steve will continue with patrols as moose season proceeds and beyond into the fall. Steve also assists with resource work when appropriate, including the aviation-based Dall's sheep surveys done in cooperation with National Park Service this past summer.

United States Department of the Interior



BUREAU OF LAND MANAGEMENT
Anchorage Field Office
4700 BLM Road
Anchorage, Alaska 99507-2591

Bureau of Land Management – Anchorage Field Office **Updates to Subsistence Regional Advisory Councils** **Fall 2021 Meetings**

Summer 2021 saw a return to some field work operations. BLM staff worked diligently to get back into the swing of field season, while adhering to all COVID-19 protocols and mitigations. Preventing the COVID-19 spread has been a critical focus for all programs.

An overview map of the Anchorage Field Office can be found at:

https://www.blm.gov/sites/blm.gov/files/documents/files/Maps_Alaska_Anchorage-Field-Office.pdf

BLM Alaska publicly available interactive maps are available at: <https://blm-egis.maps.arcgis.com/apps/MinimalGallery/index.html?appid=d2da853631fe4b60ac768f19bec4e84b>

Wildlife

- Contributed funds in an Interagency Agreement with the NPS to help fund the Western Arctic Caribou Herd Working Group meeting this December. The meeting is funded by BLM, National Park Service, US Fish & Wildlife Service (USFWS), and Alaska Department of Fish & Game (ADF&G). The Working Group will discuss the management of the herd and its current population status.
- Assisted ADF&G with muskox classification counts on the Seward Peninsula in April, by providing a helicopter and field staff from Nome to count muskox groups, for the 2021 Peninsula wide muskox population estimate.
- Issued subsistence permits in July for the Federal muskox hunts in GMU 22B and 22D on the Seward Peninsula.
- Issued subsistence permits in August for the Federal moose hunt in in GMU 22A to Unalakleet residents.
- Completed two breeding bird survey routes on the Unalakleet and Anvik rivers in June. These routes provide data to the US Geological Survey to determine bird population trends across North America.
- Contributed funds through an Interagency Agreement with the USFWS Togiak Wildlife Refuge to help monitor the Mulchatna Caribou Herd. Funds will be used to capture and collar

caribou in the Goodnews Bay and Carter spit area to help determine movement of animals that use that area.

Aquatics

- Collected genetic sampling in August of arctic char and water in the Kigluaik Mountains on the Seward Peninsula for environmental DNA.
- Completed initial aquatic habitat baseline data work around Aniak and Galena as part of its National Assessment, Inventory, and Monitoring Program (AIM). AIM data provides a framework to inventory and quantitatively assess the condition and trend of natural resources on public lands.
- Ongoing stream gaging flow quantification efforts on Big River and Unalakleet Wild & Scenic River
- Ongoing water quality monitoring work at Platinum and Nixon Fork Mines
- Provided juvenile salmon identification books for the Bristol Bay Fly Fishing and Guide Academy being held August.

Ecology

- Developed a terrestrial monitoring program for the Kobuk Seward Peninsula Planning Area as part of its AIM Program. In July 2021, 38 plots were established and sampled using this monitoring framework. Data on plant cover, bare ground, invasive species, sensitive species, and soil structure were collected. In addition to these national core monitoring indicators, BLM has developed new methods to collect data on lichen cover and disturbance to determine rangeland health in areas that BLM permits reindeer grazing.
- In August 2021, will visit and maintain seven exclosures on the Seward Peninsula. These small fenced-in areas protect vegetation from grazing, providing a baseline to learn about the long-term effects of grazing on lichens and plants. The exclosures were installed in 2011 and 2012 and now require a comprehensive maintenance visit. Monitoring will occur next year to assess how the vegetation within them has changed over the past 10 years.
- Issued four firewood harvest permits to residents on the Seward Peninsula.
- In August 2021, plans to install two permafrost monitoring stations along the Iditarod National Historic Trail near Nikolai. These stations will monitor the trail's impact to permafrost soil properties and to provide important data to fill a spatial gap and assist University of Alaska-Fairbanks efforts to model permafrost temperatures across Alaska. Also collaborating with local schools in Nikolai and McGrath to develop a program to educate and involve local students in the project and further their understanding of the permafrost soils around them.

- Collaborated with the United State Forest Service Forest Inventory and Analysis Program (FIA) to facilitate data collection at 50 plot locations on BLM within the FIA's Southwest Inventory Unit.
- Invasive species inventory, treatment, and monitoring data was entered into BLM's new Vegetation Management Action Portal that houses all of BLM's spatial data relating to vegetation treatments. This new database will greatly reduce redundant data entry from field users and will increase analysis and reporting capabilities.
- Anchorage Area:
 - Collected pre-treatment data in June 2021 for a collaborative University of Alaska-Anchorage research project to learn how to construct fuel breaks that are more resilient to spruce bark beetle attack and wind events. The project will establish three experimental fuel break treatment plots plus one control plot on Campbell Tract. Spruce trees in the three treatment plots will be thinned to 8-12 foot spacing. The three treatments vary in how the felled material will be processed: 1) stand thinned and trees left exactly as felled, 2) stand thinned and trees cut to 4-6 foot lengths and scattered within the treatment area, and 3) stand thinned and felled trees chipped and scattered within the treatment area. Treatments are planned for early winter of 2021.
 - Conducted invasive species control treatments on Campbell Tract in July with another planned for August 2021. White sweet clover, bird vetch, orange hawkweed, bird cherry, and yellow toadflax were spot treated within a 6-acre area that is assessed annually.
 - Continues to support the Anchorage Cooperative Invasive Species Management Area through an assistance agreement to partially fund meetings, public events, and chairperson coordination.

Recreation

- In August 2021, plan to inspect guide and outfitter camps in GMU 23.
- Issued new Special Recreation Permit (SRP) for guided bear hunts in GUA 22-06,07. July BLM conducted permit monitoring for one camp location used during 2 spring bear hunts.
- Conducted SRP monitoring in the Nulato Hills area, Kateel River, Galena, along the Golsovia & Unalakleet Rivers

Iditarod National Historic Trail

- Conducted public shelter cabin inspections along the Iditarod National Historic Trail (NHT).
- BLM partner the Iditarod Historic Trail Alliance is supporting and working with the community of White Mountain to develop a new public shelter cabin along the Iditarod Trail in the Topkok Hills west of the town.
- The Iditarod NHT program is providing technical assistance to the Iditarod Historic Trail Alliance and Nome Kennel Club for the installation of safety way-markers along the trail east of Nome.

Realty

- The Bureau of Land Management is announcing next steps in the implementation of the Alaska Native Vietnam-era Veterans Land Allotment Program and is seeking public comments to support an environmental assessment that will consider the effects of opening certain lands to selection by eligible Alaska Native Vietnam-era Veterans. The lands to be analyzed are associated with 28 million acres identified in five public land orders signed in January 2021. The 60-day public comment period ends on Sept. 21, 2021.
 - Maps and other planning documents associated with the project are available on the BLM's National NEPA Register at <https://eplanning.blm.gov/eplanning-ui/project/2014748/510>
 - For additional information on the environmental assessment development, contact project lead Racheal Jones at rajones@blm.gov
 - For questions on the Alaska Native Vietnam-era Veteran Allotment Program of 2019 visit <https://www.blm.gov/alaska/2019AKNativeVetsLand> or contact Paul Krabacher at pkrabach@blm.gov

Hazmat

- With new Hazmat staff onboard, start planning for cleanup activities at nine remote sites near Salmon Lake, Rohn, Golsovia Creek, and Jacksmith Creek. Activities will include removal of non-hazardous solid waste, non-historic structures, and oil/hazardous substances contamination
- Conducted a site visit and assessment with the US Army Corps of Engineers at the Kodiak Burma Road Military Munitions Response Program Site.
- Attended the annual Project Delivery Team meeting for the Kodiak Buskin Beach Formerly Used Defense Site

Minerals

- Conducted inspections in late June at two operations in the Nome area, assessing the cleanup of unauthorized use and occupancy and a Notice of exploration.
- Continues to work with operators in the Flat area addressing compliance issues including ongoing reclamation and monitoring.
- Conducted inspection of Platinum Mine in early August. Mining and Aquatics staff are working with claimant to move forward the Salmon River Fish Passage Enhancement Project.

Subsistence Regional Advisory Council Correspondence Policy

The Federal Subsistence Board (Board) recognizes the value of the Regional Advisory Councils' role in the Federal Subsistence Management Program. The Board realizes that the Councils must interact with fish and wildlife resource agencies, organizations, and the public as part of their official duties, and that this interaction may include correspondence. Since the beginning of the Federal Subsistence Program, Regional Advisory Councils have prepared correspondence to entities other than the Board. Informally, Councils were asked to provide drafts of correspondence to the Office of Subsistence Management (OSM) for review prior to mailing. Recently, the Board was asked to clarify its position regarding Council correspondence. This policy is intended to formalize guidance from the Board to the Regional Advisory Councils in preparing correspondence.

The Board is mindful of its obligation to provide the Regional Advisory Councils with clear operating guidelines and policies, and has approved the correspondence policy set out below. The intent of the Regional Advisory Council correspondence policy is to ensure that Councils are able to correspond appropriately with other entities. In addition, the correspondence policy will assist Councils in directing their concerns to others most effectively and forestall any breach of department policy.

The Alaska National Interest Lands Conservation Act, Title VIII required the creation of Alaska's Subsistence Regional Advisory Councils to serve as advisors to the Secretary of the Interior and the Secretary of Agriculture and to provide meaningful local participation in the management of fish and wildlife resources on Federal public lands. Within the framework of Title VIII and the Federal Advisory Committee Act, Congress assigned specific powers and duties to the Regional Advisory Councils. These are also reflected in the Councils' charters. (*Reference: ANILCA Title VIII §805, §808, and §810; Implementing regulations for Title VIII, 50 CFR 100 __.11 and 36 CFR 242 __.11; Implementing regulations for FACA, 41 CFR Part 102-3.70 and 3.75*)

The Secretaries of Interior and Agriculture created the Federal Subsistence Board and delegated to it the responsibility for managing fish and wildlife resources on Federal public lands. The Board was also given the duty of establishing rules and procedures for the operation of the Regional Advisory Councils. The Office of Subsistence Management was established within the Federal Subsistence Management Program's lead agency, the U.S. Fish and Wildlife Service, to administer the Program. (*Reference: 36 CFR Part 242 and 50 CFR Part 100 Subparts C and D*)

Policy

1. The subject matter of Council correspondence shall be limited to matters over which the Council has authority under §805(a)(3), §808, §810 of Title VIII, Subpart B §___.11(c) of regulation, and as described in the Council charters.
2. Councils may, and are encouraged to, correspond directly with the Board. The Councils are advisors to the Board.
3. Councils are urged to also make use of the annual report process to bring matters to the Board's attention.

6/15/04

4. As a general rule, Councils discuss and agree upon proposed correspondence during a public meeting. Occasionally, a Council chair may be requested to write a letter when it is not feasible to wait until a public Council meeting. In such cases, the content of the letter shall be limited to the known position of the Council as discussed in previous Council meetings.
5. Except as noted in Items 6, 7, and 8 of this policy, Councils will transmit all correspondence to the Assistant Regional Director (ARD) of OSM for review prior to mailing. This includes, but is not limited to, letters of support, resolutions, letters offering comment or recommendations, and any other correspondence to any government agency or any tribal or private organization or individual.
 - a. Recognizing that such correspondence is the result of an official Council action and may be urgent, the ARD will respond in a timely manner.
 - b. Modifications identified as necessary by the ARD will be discussed with the Council chair. Councils will make the modifications before sending out the correspondence.
6. Councils may submit written comments requested by Federal land management agencies under ANILCA §810 or requested by regional Subsistence Resource Commissions (SRC) under §808 directly to the requesting agency. Section 808 correspondence includes comments and information solicited by the SRCs and notification of appointment by the Council to an SRC.
7. Councils may submit proposed regulatory changes or written comments regarding proposed regulatory changes affecting subsistence uses within their regions to the Alaska Board of Fisheries or the Alaska Board of Game directly. A copy of any comments or proposals will be forwarded to the ARD when the original is submitted.
8. Administrative correspondence such as letters of appreciation, requests for agency reports at Council meetings, and cover letters for meeting agendas will go through the Council's regional coordinator to the appropriate OSM division chief for review.
9. Councils will submit copies of all correspondence generated by and received by them to OSM to be filed in the administrative record system.
10. Except as noted in Items 6, 7, and 8, Councils or individual Council members acting on behalf of or as representative of the Council may not, through correspondence or any other means of communication, attempt to persuade any elected or appointed political officials, any government agency, or any tribal or private organization or individual to take a particular action on an issue. This does not prohibit Council members from acting in their capacity as private citizens or through other organizations with which they are affiliated.

Approved by the Federal Subsistence Board on June 15, 2004.

6/15/04

Building Partnerships and Capacity for Federal Subsistence Fisheries Management and Research in the North

Partners for Fisheries Monitoring Program (PFMP)

Introduction

The Partners for Fisheries Monitoring Program was established in 2002 to increase the opportunity for Alaska Native and rural organizations to participate in Federal subsistence management. The program provides funding for fishery biologist, social scientist, or educator positions within the organization, with the intent of building and sustaining the organization's fisheries management expertise. In addition, the program supports a variety of opportunities for local, rural students to connect with subsistence management through science camps and paid internships.

The program has provided funding to mentor more than 100 college and 450 high school students, some of whom have gone on to become professionals in the field of natural resource conservation. To date with 13.3 million dollars spent, the program has supported nine Alaska Native organizations in building capacity. Organizations are funded for up to four years through a competitive grant process.

How to Get Involved

The next funding opportunity will open in 2023; it is never too early to reach out and to begin planning the components of a proposed PFMP program. The Office of Subsistence Management (OSM) is happy to answer questions and provide advice regarding its various funding programs.

OSM also partners with the Alaska Native Science and Engineering Program (ANSEP) to provide internship opportunities that expose students to careers in natural resource management. If your existing Alaska based fisheries program could benefit from a student internship, or if your program has exciting fisheries-related opportunities to challenge and educate Alaska's rural youth, please be sure to let us know!

For more information, please visit our site at <https://www.doi.gov/subsistence/partners>. You can also contact the program's coordinator, Karen Hyer at karen_hyer@fws.gov or 907-786-3689.

Partner Contacts

- **BBNA:** Cody Larson, clarson@bbna.com
- **YTT:** Jennifer Hanlon, jhanlon@ytttribe.org
- **NVE:** Matt Piche, matt.piche@eyak-nsn.gov
- **NVN:** Dan Gillikin, dangillikin@gmail.com
- **ONC:** Janessa Esquible, jesquible@nativecouncil.org

- TCC: Brian McKenna, brian.mckenna@tananachiefs.org
- QTU: Chandra Poe, chandra@qawalagin.com

2021 Partners Program Participant Summaries

Bristol Bay Native Association (BBNA)

The Bristol Bay Native Association (BBNA) researches and highlights the role of fish used in satisfying a way of life, through collaborative investigations with our member tribes, universities, and state and federal managers. These partnerships inform our citizens of any changes to the public's relationships with fish and emphasize the value in the co-production of traditional knowledge and contemporary sciences research.

The BBNA Partners program funding is used in supporting the conversation between our residents, communities, and the managers tasked with decision-making on essential food resources. The program reinforces public input to the region's Fish and Game Advisory Committees, NPS Subsistence Resource Commissions, and the Federal Regional Advisory Council, while relaying information gathered from the social science investigations. Recent focus has been on subsistence fishery funding from section 12005 of the Cares Act, and the Chignik Fisheries disaster relief efforts.

Over the past year, the program informed and collaborated on multiple investigations and recent publications, some of which are available online and focus on; The Naknek River Subsistence Salmon Harvest, Subsistence Salmon Sharing Networks on the Alaska Peninsula, Voices of Alaska Native Women Fishers, Sharing Food and Community Resilience, and a Subsistence Harvest Assessment and Stock Composition of Dolly Varden and Nonsalmon Fish Stocks in the Togiak National Wildlife Refuge.

BBNA's program has coordinated dozens of internships with partners like Lake Clark National Park, Togiak National Wildlife Refuge, Alaska Dept. of Fish and Game, and the University of Washington. The leaders involved in these summer experiences have guided many students into careers in natural resource management. Some of those students have now become the mentors to the next cohort of future leaders. While the 2020 summer internships were successfully held virtually, we are looking forward to getting the hands-on field experiences in 2021!

Yakutat Tlingit Tribe (YTT)

Yakutat Tlingit Tribe (YTT) is a federally recognized tribe with 820 enrolled Tribal Members located on the northern coast of the Gulf of Alaska. Developing conservation concerns about local salmon stocks have highlighted the need for building capacity for fisheries monitoring and management in the YTT Environmental Department. Through the Partners Program, YTT hired a full time Fisheries Biologist in 2020 to participate in subsistence management and instill place-based knowledge on the Situk River. YTT's Fisheries Biologist partners with the Yakutat District River Ranger to serve as the primary contacts to the public on the Situk River (April-September).

The team's primary job is to contact Situk users to promote stewardship and cultural awareness. Being on the river during peak fishing seasons, they can communicate conservation messages to anglers streamside on topics like catch and release, don't tread on redds, salmon ecology, angler etiquette, current regulations, alternative fishing sites, and habitat degradation. The biologist provides river users with

context about history and cultural importance of salmon with the Situk being the primary source for subsistence in Yakutat. In the past, brown bears associating anglers with fish has been a safety concern for both people and bears on the Situk. However, in coordination with the USFS Wildlife Biologist and Fish and Game, the River Rangers have aggressively worked to curb the behaviors amongst fisherman that lead to this problem. The consistent presence of the partners alone will prompt stewardship and good behavior amongst the varied Situk River users.

The Partners Program has enhanced YTT's capacity by broadening the scope of resources and tools available to the Tribe such as allowing access to valuable data like river use, stream restoration trainings, and research methods like eDNA. This partnership forges a strong foundation that strengthens and supports the YTT Environmental Department's capacity to identify and respond to conservation concerns that impact tribal interests. YTT looks forward to expanding the department and welcoming an intern under the Partners Program.

Tanana Chiefs Conference (TCC)

The Tanana Chiefs Conference (TCC) serves as a non-profit organization for the Interior region of Alaska. The TCC region covers an area of 235,000 square miles and overlaps three separate National Wildlife Refuges (NWR): Kanuti, Koyukuk-Innoko-Nowitna, and the Yukon Flats. Since its creation, the TCC has become the provider of several programs in the Interior of Alaska. Through contracts with the Bureau of Indian Affairs, TCC is responsible for the management and delivery of services such as housing, land management, tribal government assistance, education and employment services, and natural resources management.

Within TCC's organizational structure, the Wildlife and Parks (W&P) Program is responsible for serving the subsistence needs of its tribes and tribal members. The Partners Program allows the TCC W&P Program the ability to maintain a fulltime fisheries biologist on staff and has allowed TCC to develop the capacity to address the subsistence needs of TCC tribes and tribal members by conducting a variety of fisheries research programs and also by participating in federal and state fisheries management meetings.

Through the Partners Program, TCC has successfully operated the Henshaw Creek Weir salmon monitoring project in the upper Koyukuk River. TCC strives to recruit and hire local technicians and youth to assist with the project each year. The Henshaw project also hosts an annual summer science and culture camp that is jointly operated by TCC and the Kanuti NWR. Elders and youth are brought together at the camp where the Elders teach students traditional skills (like setting nets, cutting and drying fish, and Athabascan language). TCC and Kanuti staff provide lessons in western science such as weir sampling, salmon biology and ecology and fisheries management.

Outside of the Henshaw Creek Weir project, TCC has been able to lead other fisheries investigations such as updating the Yukon River Chinook and chum salmon genetic baselines, mapping salmon spawning habitat and updating the Anadromous Waters Catalog and exploring the capabilities of small unmanned aerial systems to assist with salmon research and management. Additionally, each year they host one or two Alaska Native Science and Engineering Program (ANSEP) summer bridge students and provide them with the opportunity to gain hands on knowledge and experience in fisheries management within the Yukon River drainage.

Native Village of Eyak (NVE)

The Native Village of Eyak's Department of the Environment and Natural Resources (NVE-DENR) Fisheries Program focuses on population monitoring, filling data gaps, using traditional ecological knowledge to improve data collection, and working with partners to ensure a future with healthy robust fish populations while supporting sustainable fisheries. PFMP funds are used to support a permanent fish biologist responsible for leading the fisheries program and seasonal fisheries interns who gain valuable hands-on experience.

The current PFMP is also supporting the development of a youth science and subsistence camp and outreach with other organizations and researchers throughout the region. Current research led by NVE's Partners Program biologist includes Chinook salmon inriver abundance, Copper River (2003-2021); Chinook salmon distribution and stock specific run timing, Copper River (2019-2021); Klutina River salmon enumeration sonar pilot study (2021-2024).

Furthermore, NVE is continually sharing its resources and expertise to accomplish more work through partnerships with other researchers. Current partners on side-studies include Alaska Department of Fish and Game Division of Sport Fish and Commercial Fisheries, Prince William Sound Science Center, and Ahtna Intertribal Resource Commission.

Native Village of Napaimute (NVN)

The Native Village of Napaimute (NVN) is a federally recognized tribe and has about 100 members; the village is only seasonally occupied currently. The Napaimute Partners in Fisheries Monitoring Program main goals are to; improve effectiveness of local outreach related to fisheries management, provide opportunities in natural resource education and experience for local youth, build local capacity through strategic program and workforce development, and develop a sustainable natural resource program.

Outreach related to fisheries management is achieved by participating in management discussions with various advisory groups i.e., Kuskokwim River Inter Tribal Fish Commission, Kuskokwim Salmon Management Working Group, and agencies (ADF&G, USFWS). We routinely post in-season management actions on social media and around the Villages to keep fishers informed on the latest regulations.

Our youth outreach involves two projects; the Math Science Expedition (MSE) and the George River Internship (GRI). The MSE is tailored more to be leadership development experience with some exposure to fisheries ecology and data collection. The MSE typically accommodates 25-30 students on a two week-long rafting trip down the Salmon and Aniak Rivers.

The GRI is an advanced paid Internship opportunity on the George River where Interns learn about river ecology, hydrology, sampling techniques for fish and benthic macro- invertebrates, leadership skills and career opportunities in the area of natural resource management.

The PFMP has allowed us to build the capacity to peruse funding for and help support fisheries monitoring programs (Aniak Test Fishery & Salmon River Weir) funded through the USFWS Fisheries Resource Monitoring Program, along with several environmental monitoring and fisheries assistance projects. Projects are mostly staffed by local residents and Alaska Native Science and Engineering Students (ANSEP).

Orutsararmiut Native Council (ONC)

Orutsararmiut Native Council (ONC) is the Federally recognized Tribal Government for the Native Village of Bethel, Alaska and has greatly expanded its Partners Program since 2008. ONC Partners Program strives to support ongoing fisheries in season and postseason monitoring programs; serve as a mentor for rural, Alaska Native student interns in coordination with other state, federal, and tribal entities; communicate results of the fisheries monitoring program projects to various audiences to enhance federal subsistence management awareness in rural communities; continue youth internship programs; and pursue external funds and partnerships to expand the current Partners Program. In the past, with the support of the Partners Program, ONC was able to conduct annual Science & Culture Camps, as well as science, technology, engineering, and math (STEM) middle school career exploration programs in Bethel with the help of Alaska Native Science & Engineering Program (ANSEP) and several other partner agencies.

Our Partners Program also became involved with the Aniak & Salmon River Math & Science Expedition by fisheries educational outreach with youth from the middle Kuskokwim. ONC's involvement with youth camp programs throughout the years was able to reach many students ranging from 6th to 12th grade. Despite the difficulties and cancellations that came with the COVID-19 pandemic, ONC's Partners Program work has continued in a safe manner with new procedures and creative methods to engage youth. We would like to sincerely thank the Office of Subsistence Management and other partnering entities, for without their support, our program would not have had the ability to support the youth of the Yukon-Kuskokwim Delta. The support of our partners has allowed ONC to have great success in expanding its involvement on scientific and educational outreach projects and programs.

Qawalangin Tribe of Unalaska (QTU)

The Qawalangin Tribe of Unalaska is a federally recognized sovereign nation. The Unangan people have continuously occupied their homelands along the Aleutian and Pribilof Islands for thousands of years, relying on a close relationship with the sea and lands.

As a new participant in the Partners program, the Tribe is looking forward to continuing work to ensure healthy subsistence species and food sovereignty for generations to come.

A key project in our first year as a Partners program participant was collaborating with ADFG to operate a weir at McLees Lake, monitoring this sockeye run that is an important subsistence resource for the community. In our first year, we restored structures at the site that had fallen into disrepair during a 2-year gap in funding for the weir. Our staff gained experience in weir setup and operations and scale sampling. We are looking forward to building our staff capacity and increasing our presence at the weir in coming seasons and working to ensure continuity of this important salmon monitoring site.

In addition to continuing work at the McLees weir in partnership with ADFG, in the coming years we are looking forward to establishing a strong outreach and education program to build awareness and support of subsistence resource management, so important to our coastal community.

Winter 2022 Regional Advisory Council Meeting Calendar

Last updated 3/19/2021

Due to travel budget limitations placed by Department of the Interior on the U.S. Fish and Wildlife Service and the Office of Subsistence Management, the dates and locations of these meetings will be subject to change.

Sunday	Monday	Tuesday	Wednesday-	Thursday	Friday	Saturday
Feb. 6	Feb. 7 Window Opens	Feb. 8	Feb. 9	Feb. 10	Feb. 11	Feb. 12
		BB - Naknek		SC - Anchorage		
Feb. 13	Feb. 14	Feb. 15	Feb. 16	Feb. 17	Feb. 18	Feb. 19
	NWA - Kotzebue		WI - Galena			
Feb. 20	Feb. 21 PRESIDENTS DAY HOLIDAY	Feb. 22	Feb. 23	Feb. 24	Feb. 25	Feb. 26
		KA - Kodiak				
Feb. 27	Feb. 28	Mar. 1	Mar. 2	Mar. 3	Mar. 4	Mar. 5
		YKD - Bethel		SP - Nome		
Mar. 6	Mar. 7	Mar. 8	Mar. 9	Mar. 10	Mar. 11	Mar. 12
		EI - Fort Yukon				
		NS - TBD				
Mar. 13	Mar. 14	Mar. 15	Mar. 16	Mar. 17	Mar. 18	Mar. 19
Mar. 20	Mar. 21	Mar. 22	Mar. 23	Mar. 24	Mar. 25	Mar. 26
		SEA - Sitka			Window Closes	

Fall 2022 Regional Advisory Council Meeting Calendar

Last updated 8/5/2021

Due to travel budget limitations placed by Department of the Interior on the U.S. Fish and Wildlife Service and the Office of Subsistence Management, the dates and locations of these meetings will be subject to change.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<i>Aug. 7</i>	<i>Aug. 8 Window Opens</i>	<i>Aug. 9</i>	<i>Aug. 10</i>	<i>Aug. 11</i>	<i>Aug. 12</i>	<i>Aug. 13</i>
<i>Aug. 14</i>	<i>Aug. 15</i>	<i>Aug. 16</i>	<i>Aug. 17</i>	<i>Aug. 18</i>	<i>Aug. 19</i>	<i>Aug. 20</i>
<i>Aug. 21</i>	<i>Aug. 22</i>	<i>Aug. 23</i>	<i>Aug. 24</i>	<i>Aug. 25</i>	<i>Aug. 26</i>	<i>Aug. 27</i>
<i>Aug. 28</i>	<i>Aug. 29</i>	<i>Aug. 30</i>	<i>Aug. 31</i>	<i>Sep. 1</i>	<i>Sep. 2</i>	<i>Sep. 3</i>
<i>Sep. 4</i>	<i>Sep. 5 Labor Day Holiday</i>	<i>Sep. 6</i>	<i>Sep. 7</i>	<i>Sep. 8</i>	<i>Sep. 9</i>	<i>Sep. 10</i>
<i>Sep. 11</i>	<i>Sep. 12</i>	<i>Sep. 13</i>	<i>Sep. 14</i>	<i>Sep. 15</i>	<i>Sep. 16</i>	<i>Sep. 17</i>
<i>Sep. 18</i>	<i>Sep. 19</i>	<i>Sep. 20</i>	<i>Sep. 21</i>	<i>Sep. 22</i>	<i>Sep. 23</i>	<i>Sep. 24</i>
<i>Sep. 25</i>	<i>Sep. 26</i>	<i>Sep. 27</i>	<i>Sep. 28</i>	<i>Sep. 29</i>	<i>Sep. 30</i>	<i>Oct. 1</i>
<i>Oct. 2</i>	<i>Oct. 3</i>	<i>Oct. 4</i>	<i>Oct. 5</i>	<i>Oct. 6</i>	<i>Oct. 7</i>	<i>Oct. 8</i>
<i>Oct. 9</i>	<i>Oct. 10 Columbus Day Holiday</i>	<i>Oct. 11</i>	<i>Oct. 12</i>	<i>Oct. 13</i>	<i>Oct. 14</i>	<i>Oct. 15</i>
<i>Oct. 16</i>	<i>Oct. 17</i>	<i>Oct. 18</i>	<i>Oct. 19</i>	<i>Oct. 20</i>	<i>Oct. 21</i>	<i>Oct. 22</i>
<i>Oct. 23</i>	<i>Oct. 24</i>	<i>Oct. 25</i>	<i>Oct. 26</i>	<i>Oct. 27</i>	<i>Oct. 28</i>	<i>Oct. 29</i>
<i>Oct. 30</i>	<i>Oct. 31</i>	<i>Nov. 1</i>	<i>Nov. 2</i>	<i>Nov. 3</i>	<i>Nov. 4 Window Closes</i>	<i>Nov. 5</i>

**Department of the Interior
U. S. Fish and Wildlife Service**

Western Interior Alaska Subsistence Regional Advisory Council

Charter

1. **Committee's Official Designation.** The Council's official designation is the Western Interior Alaska Subsistence Regional Advisory Council (Council).
2. **Authority.** The Council is renewed by virtue of the authority set out in the Alaska National Interest Lands Conservation Act (ANILCA) (16 U.S.C. 3115 (1988)), and under the authority of the Secretary of the Interior, in furtherance of 16 U.S.C. 410hh-2. The Council is regulated by the Federal Advisory Committee Act (FACA), as amended (5 U.S.C. Appendix 2).
3. **Objectives and Scope of Activities.** The objective of the Council is to provide a forum for the residents of the Region with personal knowledge of local conditions and resource requirements to have a meaningful role in the subsistence management of fish and wildlife on Federal lands and waters in the Region.
4. **Description of Duties.** Council duties and responsibilities, where applicable, are as follows:
 - a. Recommend the initiation, review, and evaluation of proposals for regulations, policies, management plans, and other matters relating to subsistence uses of fish and wildlife on public lands within the Region.
 - b. Provide a forum for the expression of opinions and recommendations by persons interested in any matter related to the subsistence uses of fish and wildlife on public lands within the Region.
 - c. Encourage local and regional participation in the decision-making process affecting the taking of fish and wildlife on the public lands within the Region for subsistence uses.
 - d. Prepare an annual report to the Secretary containing the following:
 - (1) An identification of current and anticipated subsistence uses of fish and wildlife populations within the Region.
 - (2) An evaluation of current and anticipated subsistence needs for fish and wildlife populations within the Region.
 - (3) A recommended strategy for the management of fish and wildlife populations within the Region to accommodate such subsistence uses and needs.

- (4) Recommendations concerning policies, standards, guidelines, and regulations to implement the strategy.
- e. Appoint one member to the Gates of the Arctic National Park Subsistence Resource Commission in accordance with section 808 of ANILCA.
- f. Make recommendations on determinations of customary and traditional use of subsistence resources.
- g. Make recommendations on determinations of rural status.
- h. Provide recommendations on the establishment and membership of Federal local advisory committees.
- i. Provide recommendations for implementation of Secretary's Order 3347: Conservation Stewardship and Outdoor Recreation, and Secretary's Order 3356: Hunting, Fishing, Recreational Shooting, and Wildlife Conservation Opportunities and Coordination with States, Tribes, and Territories. Recommendations shall include, but are not limited to:
 - (1) Assessing and quantifying implementation of the Secretary's Orders, and recommendations to enhance and expand their implementation as identified;
 - (2) Policies and programs that:
 - (a) increase outdoor recreation opportunities for all Americans, with a focus on engaging youth, veterans, minorities, and other communities that traditionally have low participation in outdoor recreation;
 - (b) expand access for hunting and fishing on Bureau of Land Management, U.S. Fish and Wildlife Service, and National Park Service lands in a manner that respects the rights and privacy of the owners of non-public lands;
 - (c) increase energy, transmission, infrastructure, or other relevant projects while avoiding or minimizing potential negative impacts on wildlife; and
 - (d) create greater collaboration with States, Tribes, and/or Territories.
- j. Provide recommendations for implementation of the regulatory reform initiatives and policies specified in section 2 of Executive Order 13777: Reducing Regulation and Controlling Regulatory Costs; Executive Order 12866: Regulatory Planning and Review, as amended; and section 6 of Executive Order

13563: Improving Regulation and Regulatory Review. Recommendations shall include, but are not limited to:

Identifying regulations for repeal, replacement, or modification considering, at a minimum, those regulations that:

- (1) eliminate jobs, or inhibit job creation;
- (2) are outdated, unnecessary, or ineffective;
- (3) impose costs that exceed benefits;
- (4) create a serious inconsistency or otherwise interfere with regulatory reform initiative and policies;
- (5) rely, in part or in whole, on data or methods that are not publicly available or insufficiently transparent to meet the standard for reproducibility; or
- (6) derive from or implement Executive Orders or other Presidential and Secretarial directives that have been subsequently rescinded or substantially modified.

Alternate members may be appointed to the Council to fill vacancies if they occur out of cycle. An alternate member must be approved and appointed by the Secretary before attending the meeting as a representative. At the conclusion of each meeting or shortly thereafter, provide a detailed recommendation meeting report, including meeting minutes, to the Designated Federal Officer (DFO).

5. **Agency or Official to Whom the Council Reports.** The Council reports to the Federal Subsistence Board Chair, who is appointed by the Secretary of the Interior with the concurrence of the Secretary of Agriculture.
6. **Support.** The U.S. Fish and Wildlife Service will provide administrative support for the activities of the Council through the Office of Subsistence Management.
7. **Estimated Annual Operating Costs and Staff Years.** The annual operating costs associated with supporting the Council's functions are estimated to be \$180,000, including all direct and indirect expenses and 1.15 Federal staff years.
8. **Designated Federal Officer.** The DFO is the Subsistence Council Coordinator for the Region or such other Federal employee as may be designated by the Assistant Regional Director – Subsistence, Region 11, U.S. Fish and Wildlife Service. The DFO is a full-time Federal employee appointed in accordance with Agency procedures. The DFO will:
 - (a) Approve or call all Council and subcommittee meetings;

- (b) Prepare and approve all meeting agendas;
 - (c) Attend all committee and subcommittee meetings;
 - (d) Adjourn any meeting when the DFO determines adjournment to be in the public interest; and
 - (e) Chair meetings when directed to do so by the official to whom the advisory committee reports.
9. **Estimated Number and Frequency of Meetings.** The Council will meet 1-2 times per year, and at such times as designated by the Federal Subsistence Board Chair or the DFO.
10. **Duration.** Continuing.
11. **Termination.** The Council will be inactive 2 years from the date the Charter is filed, unless, prior to that date, the charter is renewed in accordance with the provisions of section 14 of the FACA. The Council will not meet or take any action without a valid current charter.
12. **Membership and Designation.** The Council's membership is composed of representative members as follows:

Ten members who are knowledgeable and experienced in matters relating to subsistence uses of fish and wildlife and who are residents of the Region represented by the Council.

To ensure that each Council represents a diversity of interests, the Federal Subsistence Board in their nomination recommendations to the Secretary will strive to ensure that seven of the members (70 percent) represent subsistence interests within the Region and three of the members (30 percent) represent commercial and sport interests within the Region. The portion of membership representing commercial and sport interests must include, where possible, at least one representative from the sport community and one representative from the commercial community.

The Secretary of the Interior will appoint members based on the recommendations from the Federal Subsistence Board and with the concurrence of the Secretary of Agriculture.

For geographic membership balance, it is a Council goal to seat three members who reside in the Northern Koyukuk area (Unit 24), three members who reside in the Middle Yukon (Unit 21A-D), three members who reside in the Upper Kuskokwim area (Unit 19), and one member who resides in the Grayling/Anvik/Shageluk/Holy Cross area (GASH-Unit 21E).

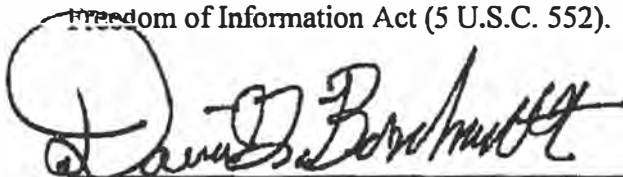
Members will be appointed for 3-year terms. Members serve at the discretion of the Secretary.

Alternate members may be appointed to the Council to fill vacancies if they occur out of cycle. An alternate member must be approved and appointed by the Secretary before attending the meeting as a representative. The term for an appointed alternate member will be the same as the term of the member whose vacancy is being filled.

Council members will elect a Chair, Vice-Chair, and Secretary for a 1-year term.

Members of the Council will serve without compensation. However, while away from their homes or regular places of business, Council and subcommittee members engaged in Council, or subcommittee business, approved by the DFO, may be allowed travel expenses, including per diem in lieu of subsistence, in the same manner as persons employed intermittently in Government service under section 5703 of title 5 of the United States Code.

13. **Ethics Responsibilities of Members.** No Council or subcommittee member will participate in any Council or subcommittee deliberations or votes relating to a specific party matter before the Department or its bureaus and offices including a lease, license, permit, contract, grant, claim, agreement, or litigation in which the member or the entity the member represents has a direct financial interest.
14. **Subcommittees.** Subject to the DFOs approval, subcommittees may be formed for the purpose of compiling information and conducting research. However, such subcommittees must act only under the direction of the DFO and must report their recommendations to the full Council for consideration. Subcommittees must not provide advice or work products directly to the Agency. Subcommittees will meet as necessary to accomplish their assignments, subject to the approval of the DFO and the availability of resources.
15. **Recordkeeping.** Records of the Council, and formally and informally established subcommittees or other subgroups of the Council, must be handled in accordance with General Records Schedule 6.2, and other approved Agency records disposition schedule. These records must be available for public inspection and copying, subject to the Freedom of Information Act (5 U.S.C. 552).



Secretary of the Interior

DEC 12 2019

Date Signed

DEC 13 2019

Date Filed

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