



U.S. Department of the Interior Economic Report FY 2018



September 30, 2019

Prepared by the Department of the Interior Office of Policy Analysis

Table of Contents

Definitions and Concepts	iv
Introduction	1
Outputs Produced, Economic Values and Economic Contributions	2
Contributors	18

List of Tables

Table 1. Interior-Managed Resources: Production Quantities and Values, FY 2010-FY 2018	6
Table 2. Estimated FY 2018 Economic Contributions Resulting from Interior’s Activities	9
Table 3. Summary of FY 2018 Economic Contributions by Bureau	10
Table 4. Estimated Value Added Supported by Interior Activities, by Sector and State	12
Table 5. Estimated Total Output Supported by Interior Activities, by Sector and State	14
Table 6. Estimated Total Jobs Supported by Interior Activities, by Sector and State	16



Zion National Park, UT
National Park Service – Tom Morris

Definitions and Concepts

GDP: Gross domestic product measures the value of all final goods and services produced within an economy during a specified period.

Input-Output Modeling: Represents the interactions among the many sectors of the National economy, or of regional economies such as individual States.

Value Added: Measures the contribution of DOI's activities to the Gross Domestic Product (GDP) of a regional or the National economy. Value added is the difference between DOI's estimated total output (sales or receipts and other operating income) and the cost of any intermediate inputs (consumption of goods and services purchased from other industries or imported).

Economic Output: The total estimated value of production of goods and services supported by DOI's activities. Output is the sum of all intermediate sales (business to business) and final demand (sales to consumers, and exports).

Employment: The total number of jobs supported by DOI-managed activities.

Activities: As used to estimate economic contributions, "activities" means the full range of actions associated with facilitating the use of lands and waters managed by Interior. This includes actions undertaken by the Federal government as well as subsequent actions undertaken by private sector individuals and businesses.

Inflation-Adjusted Prices: The "nominal" or "current-dollar" price of a good reflects the cost of a good at the time it is produced. The "real" price is adjusted for inflation, to allow comparing valuations for goods produced at different dates.

CPI-U: The Consumer Price Index (CPI) is a measure of the average change in prices over time in a fixed market basket of goods and services. The CPI-U is the Bureau of Labor Statistics CPI for All Urban Consumers.



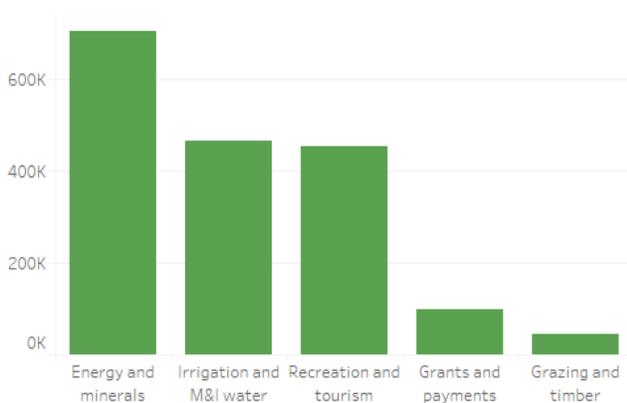
Introduction

The U.S. Department of the Interior (DOI, or Interior) plays an integral role in conserving America’s natural resources and heritage, honoring our cultures and Tribal communities, and supplying the energy to power the Nation. Interior’s people, programs, and responsibilities affect Americans across all of the 50 States and Territories. The Department is the steward of 20 percent of the Nation’s lands, managing national parks, national wildlife refuges, and other public lands, and assisting States, Tribes, and others in the management of natural and cultural resources.

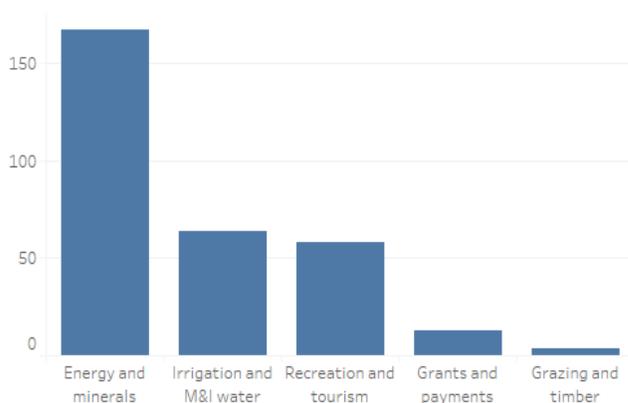
The Department’s economic contributions arise as the Department carries out its unique mission, managing Federal lands and waters, and making investments that conserve and restore natural landscapes and the cultural heritage of the Nation. Departmental management also facilitates private sector activities that result in economic contributions. For example, Interior grants access to public lands and offshore areas for conventional and renewable energy development. DOI lands and waters produced nearly one-fifth of the Nation’s energy in FY 2018. These leasing activities allow the private sector to invest, creating economic output and employment. Similarly, the recreation opportunities provided by DOI’s lands and waters promote visitor spending, which contributes to local and regional economies. Water supplied by Interior’s facilities for irrigation and municipal and industrial purposes supports private sector agricultural and urban activities. While challenging to evaluate in economic terms, the cutting-edge research in geology, hydrology, and biology undertaken by DOI informs resource management and private sector decision making.

In FY 2018, production and activities on DOI lands contributed about \$183 billion to the Nation’s GDP, supported about \$315 billion in economic output, and supported an estimated 1.8 million jobs.¹ This report includes key tables and summary information on the economic contributions associated with Interior’s activities. A more detailed set of information, including State-level results, interactive visualization tools, and supplementary materials can be found at: <https://doi.sciencebase.gov/doidv>.

Jobs Supported by Activity



Economic Output by Activity (\$ billions)



¹ The FY 2018 DOI contribution to the nation’s GDP was about 11% larger than the FY 2017 contribution. Much of this change reflects somewhat higher oil production and prices. This report represents the tenth in a series of annual economic reports.

Outputs Produced, Economic Values and Economic Contributions

Summary information related to economic contributions, value added, employment, and other economic values associated with Interior's diverse activities is presented below, followed by tables that provide additional detail.²

- **Fossil Fuel Energy:** In FY 2018, Interior-managed lands and waters produced 923 million barrels of crude oil, 4.6 trillion cubic feet of natural gas, and 322 million tons of coal. This represents about a quarter of domestic oil production, approximately 15% of natural gas production, and close to half of U.S. coal production. Some average prices in FY 2018 included \$64.01/bbl for oil, \$2.94/mcf of natural gas, and \$12.39 per ton of Powder River Basin coal. Average oil prices were higher in FY 2018 than in FY 2017, while average natural gas prices were slightly lower (\$50.53/bbl for oil and \$3.09/mcf for natural gas, 2018- $\$$). Oil and gas produced from Interior lands and waters supported an estimated \$85.4 billion in value added, \$139 billion in economic output, and 607,000 jobs. Coal produced from Interior lands supported an estimated \$6.5 billion in value added, \$11.5 billion in economic output, and 36,000 jobs.
- **Renewable Energy:** In FY 2018, Interior lands and facilities produced 41.3 TWh of hydropower. Interior lands host renewable power projects for solar (7,171 MW), wind (3,249 MW), and geothermal energy (1,648 MW).³ The BLM has approved 112 renewable energy projects, including 27 solar projects (two in FY 2018), 35 wind projects, and 50 geothermal projects. Combined, they represent a total of 12,060 megawatts of capacity. Renewable energy activities supported an estimated \$3.8 billion in economic output and over 15,000 jobs.
- **Non-fuel Minerals:** In FY 2018, Interior lands produced a wide variety of minerals. For example, an estimated 98,144 kg of gold were produced from the Bureau of Land Management (BLM) lands in Nevada;⁴ the average price of gold in 2018 was \$1,270 per troy ounce. Non-fuel mineral production supported an estimated \$7.4 billion in value added, \$12.7 billion in economic output, and about 45,700 jobs.

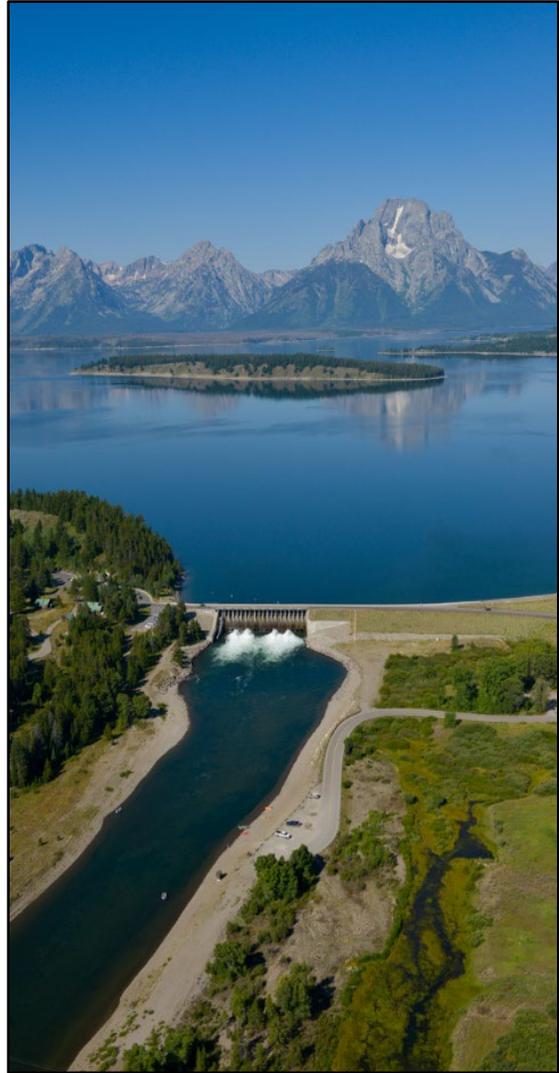


² Many activities on Interior lands are associated with external costs. As a general matter, market prices do not reflect many of these costs. Various regulations and other requirements designed to address adverse environmental impacts internalize some (but not all) of these external costs. Market prices also typically do not fully reflect various ecosystem service values provided by Interior-managed lands. Tribal production is included to the extent that data is available.

³ Approved capacities on BLM land as of November 2018 would produce approximately 37.7 TWh over a year (assuming median capacity factors for each technology, as reported by NREL). Assuming the same contributions per TWh as for Reclamation hydropower, 37.7 TWh of renewable generation would support \$2.9 billion in total economic output and about 11,000 jobs.

⁴ 98,144 kg is equivalent to 3.15 million troy ounces. Data on gold production from BLM lands in Nevada is for CY 2018.

- **Recreation:** In FY 2018, Interior’s lands hosted an estimated 486 million visits. The net economic value of a visit to Interior lands varies depending on the activity. For FY 2018, visitation to Interior sites supported an estimated \$33.4 billion in value added, \$58.1 billion in economic output, and about 452,000 jobs.
- **Water:** Interior stores and delivers water for irrigation, municipal and industrial (M&I) uses, and other uses. The value of water varies widely according to location, type of use, and climatic conditions. Interior’s irrigation (Bureau of Reclamation (BOR) and the Bureau of Indian Affairs (BIA)) and M&I water supply activities supported an estimated \$34.5 billion in value added, \$63.4 billion in economic output, and 466,000 jobs. Interior also delivers water to support wildlife refuges and other environmental uses that are difficult to value fully and are not typically reflected in economic contribution estimates.
- **Forage and Grazing:** In FY 2018, Interior lands provided access to 11.1 million animal unit months (AUMs) of forage – 8.9 million from BLM and 2.2 million from Tribal lands. This production supported an estimated \$2.6 billion in economic output and about 42,000 jobs. Prices for forage vary widely, from the \$1.41 per AUM fee on BLM-managed lands to \$24.00 per AUM on State and private grazing lands.⁵ The Federal fee is an administrative price and not a market price. Differences between the costs of grazing private leases and the costs of grazing public leases should also be recognized. For example, private landlords may provide additional services like fencing, water infrastructure, secure access, check-up visits, and rights to hunt, fish and harvest timber in the area.
- **Timber:** In FY 2018, about 573,000 mbf (thousand board-feet) of sawtimber was harvested on BLM and Tribal lands. Approximately 68 percent of the harvest came from lands managed by BIA, while the remaining percentage came from BLM-managed lands. This timber harvest supported about \$0.3 billion in value added, \$0.8 billion in economic output, and about 3,000 jobs. In addition to traditional sawtimber, Interior forestry lands provide various other products including biomass, fuelwood, poles, posts, and a variety of other products (e.g., seeds, Christmas trees, and mushrooms). The economic contributions supported by some of these products have not been explicitly analyzed.



⁵ BLM and USFS decreased the Federal grazing fee to \$1.87 in 2017 and further decreased it to \$1.41 in 2018, pursuant to the statutory requirements under the Public Rangelands Improvement Act of 1978. Source for private grazing fee (16-state average): https://www.nass.usda.gov/Charts_and_Maps/Grazing_Fees/gf_am.php

- **Grants/Payments:** Activities related to grant and payment programs administered by Interior supported about \$8.2 billion in value added, \$12.75 billion in economic output, and about 97,600 jobs in FY 2018.⁶ Within these totals:
 - Indian Affairs direct payments to Tribal governments supported \$0.9 billion in value added, \$1.35 billion in economic output, and about 9,300 jobs.
 - Grants and payments to Insular areas⁷ supported \$0.8 billion in value added and about 26,000 jobs. Economic output estimates supported by these grants and payments were not readily available at the time of publication.
- **Restoration:** Every Interior bureau engages in some form of restoration from physical structures to habitat and cultural resources. Restoration typically involves spending on construction, habitat management, etc. The employment supported by these activities can range from 12 to 30 jobs per million dollars of spending.
- **Conservation:** Conservation is a component of recreation, restoration, water management, and even some mineral development activities. The value added, economic contributions, and employment supported by DOI's conservation-related activities are difficult to measure and are not included in this report. Many benefits of nature conservation accrue to households, communities, and economies, and are not defined with a set of consistent metrics or bought and sold in markets. This creates challenges in the valuation of these goods and services.



- **Scientific Information:** Interior collects a vast array of scientific information including land cover data collected by satellite, geologic data on minerals, and species counts. This information is a critical input that helps support private markets, the production processes of private entities, and many public sector decisions. Some of the benefits of this information are relatively well-quantified, but not all of Interior's major information investments are in fields with standardized methods to analyze these benefits.

⁶ It is possible that grants and payments support some of the economic activity reported for other DOI activities throughout this report. We have not attempted to correct for this source of potential double-counting.

⁷ *Insular* refers to the U.S. territories of American Samoa, Guam, the U.S. Virgin Islands and the Commonwealth of the Northern Mariana Islands, as well as the sovereign nations of the Federated States of Micronesia, the Republic of the Marshall Islands, and the Republic of Palau.

- Investments in research and development (R&D) and scientific data collection promote economic growth and innovation, ensure American competitiveness in a global marketplace, and are critical to achieving Interior’s mission. Investments in Interior’s R&D can improve U.S. strategic mineral supplies, understanding of ecosystem services, water use and availability, and natural hazard preparedness. Much scientific knowledge is difficult to value and monetize in markets, and hence is underprovided by the private sector. The economic values associated with the production and dissemination of scientific information are only partially incorporated in the market prices of traded goods and services.
- The Department's scientific, technical and engineering personnel are engaged in a broad range of cooperative activities to develop and disseminate innovative technologies, including in FY 2018:⁸
 - Publishing over 10,500 reports, books, papers, fact sheets, and other publications, including almost 4,500 in scientific publications.
 - Collaborating on 740 Cooperative Research & Development Agreements (CRADAs), of which 422 were initiated in FY 2018.
 - Engaging in at least 249 other collaborative R&D relationships.
 - Disclosing nine new inventions. In addition, seven patents were filed and six patents were received.
 - Managing 17 active licenses for inventions and other intellectual property earning about \$51,000 collectively.



⁸ U.S. Department of the Interior Annual Report on Technology Transfer, FY 2018 Activities.

Table 1. Interior-Managed Resources: Production Quantities and Values, FY 2010-FY 2018

Commodity ^a	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	
Recreation ^b	<i>Visits to DOI sites (million)</i>	439	434	417	407	423	443	473	483	486
	<i>Economic value per visit (2018-\$)</i>	\$43.13 to \$134.22								
Crude Oil ^c	<i>DOI production and Tribal (millions of barrels)</i>	724	658	632	672	723	796	809	871	923
	<i>WTI - Average price per bbl (2018-\$)</i>	\$88.83	\$103.42	\$104.58	\$103.01	\$105.33	\$59.85	\$43.26	\$50.53	\$64.01
Natural Gas ^d	<i>DOI production and Tribal (trillions of cubic feet)</i>	6.6	6.1	5.8	5.3	5.1	5.1	4.9	4.7	4.6
	<i>Avg spot price per thousand cubic feet (2018-\$)</i>	\$5.21	\$4.60	\$2.99	\$3.90	\$4.67	\$3.23	\$2.39	\$3.09	\$2.94
Coal ^e	<i>DOI production and Tribal (millions of tons)</i>	478	464	461	422	424	409	310	348	322
	<i>Avg price per short ton subbituminous coal (2018-\$)</i>	\$14.43	\$15.34	\$9.72	\$11.25	\$12.20	\$10.51	\$10.49	\$12.06	\$12.39
Hardrock Minerals - gold ^f	<i>Estimated gold production on Federal lands in NV (kg)</i>	99,330	100,620	76,223	76,224	77,739	74,662	79,925	91,427	98,144
	<i>Avg gold price per ounce (CY, 2018-\$)</i>	\$1,239	\$1,652	\$1,755	\$1,525	\$1,346	\$1,232	\$1,310	\$1,292	\$1,270
Forage ^g	<i>BLM, AUMs permitted (millions)</i>	8.0	8.7	9.0	8.6	8.2	8.3	8.6	8.7	8.9
	<i>Price per AUM (2018-\$)</i>	\$1.41 to \$24.00								
Timber ^h	<i>BLM, commercial sawtimber harvested (mbf)</i>	183,558	217,929	208,496	235,346	244,246	271,018	223,041	227,216	184,960
	<i>BIA harvested timber (mbf)</i>	396,532	359,697	333,209	336,320	261,089	344,787	445,636	384,246	388,002
	<i>Total for BLM and BIA (mbf)</i>	580,090	577,626	541,705	571,666	505,335	615,805	668,677	611,462	572,963
	<i>Average Western OR BLM received price per mbf (2018-\$)</i>	\$103.31	\$104.69	\$131.10	\$137.39	\$166.05	\$201.70	\$229.25	\$216.71	\$251.67

(Table continues)

Commodity ^a		FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Electricity generation										
Hydroelectric	Net generation, Twh	35.8	48.6	47.5	39.8	38	36.1	36.7	43.9	41.3
	Geothermal ⁱ									
	New approved capacity, MW (CY)	30	374	70	103	0	0	80	0	0
Wind ⁱ	New approved capacity, MW (CY)	150	236	1815	626	0	0	0	0	0
Solar ⁱ	New approved capacity, MW (CY)	1265	1825	489	1000	770	955	287	0	580
<i>Average electricity spot price per MWh ^j</i>										
	<i>Mid-Columbia (NW) (2018-\$)</i>	\$37.96	\$30.77	\$23.50	\$33.76	\$40.75	\$27.46	\$29.12	\$26.56	\$31.74
	<i>SP-15 (California) (2018-\$)</i>	\$42.52	\$38.99	\$36.56	\$44.87	\$54.87	\$38.02	\$33.90	\$37.00	\$49.40
Irrigation and M&I Water (estimated deliveries)	<i>Million acre-feet ^k</i>	26.7	26.7	26.7	27.3	24.4	24.9	26.2	26.1	27.3
	\$ per acre-foot ^l	Values per a-f can range from \$0 - \$4,500/a-f depending on region, end-use, and other special circumstances. The high end of the range would not typically be encountered.								
Ecosystem Services	Ecosystem services are measured in many different metrics; information on annual flows of these services is not readily available. Because most ecosystem services are not bought and sold in markets, prices are not readily available.									

Notes to Table 1

^a Unit values are FY 2018 market values or estimated economic value, depending on the commodity. Values for prior years have been adjusted for inflation using the CPI-U. Market prices do not always fully reflect the costs and benefits associated with production from federal lands.

^b Currently available datasets do not track visitors' activities. The range of economic values per visit are the low and high average values for general recreation from the USGS Benefit Transfer Toolkit, updated to 2018-\$ using the CPI-U. See <https://my.usgs.gov/benefit-transfer/>.

^c Production is based on ONRR production volumes. Includes production on tribal land. Crude oil prices are monthly West Texas Intermediate (WTI) per-barrel spot prices from EIA.gov, averaged over the fiscal year. WTI is a benchmark price used for indexing crude oil.

^d Production is based on ONRR production volumes. Includes production on Tribal land. Natural gas prices are monthly Henry Hub per-mcf spot prices from EIA.gov, averaged over the fiscal year.

^e Production is based on ONRR production volumes. Includes production on Tribal land. Price data are from ONRR Monthly Market Analysis reports starting in 2012; prior to 2012, coal prices were from EIA.gov.

(Table continues)

^f Gold production for 2008-2011 are estimates of production from the Federal estate. Production for 2012 forward represents production from Federal estate in Nevada based on data from the State of Nevada. Prices are from the most recent USGS Mineral Commodity Summaries. 1 kg is equivalent to 32.15 troy ounces.

^g The low-end is the 2018 Federal grazing fee. This value is adjusted for three factors based on costs in the Western States of (1) the rental charge for pasturing cattle on private rangelands, (2) the sales price of beef cattle, and (3) the cost of livestock production. Congress also established that the annual fee adjustment could not exceed 25% of the previous year's fee; the high-end value is the 16 Western State average rental price for private forage in 2018, as reported by the USDA, NASS. Differences between the costs of grazing private leases and the costs of grazing public leases should also be recognized. For example, private landlords may provide additional services like fencing, water infrastructure, secure access, check-up visits, and rights to hunt, fish and harvest timber in the area. For FY 2018, BIA permitted an estimated 2.2 million AUMs. Historic BIA grazing data are not available.

^h Source: BLM Data. Data include sawtimber harvested for commercial use. Additional sawtimber is harvested from BLM managed lands under the Stewardship Program and Special Forest Products Program. These volumes represent a relatively small proportion of the volume and are not shown in this table. Other wood-based timber products not included in these volumes include biomass, posts, poles, fuelwood, and "other."

ⁱ Source: BLM data. The data represents approved capacity on BLM land as of November 2018, which would produce approximately 37.7 TWh over a year (assuming median capacity factors for each technology, as reported by NREL). Assuming the same contributions per TWh as for Reclamation hydropower, 37.7 TWh of renewable generation would support \$2.9 billion in total economic output and about 11,000 jobs.

^j Prices are wholesale on-peak electricity prices for the indicated regions from EIA.gov, averaged over the fiscal year. Wholesale electricity prices for the Northwest and California regions are the most appropriate price series when considering the role of DOI lands in electricity generation due to the geographic location of electricity generation facilities on DOI lands and the fact that this electricity is sold on the wholesale power market.

^k Some Reclamation-supplied water (not reported) provides benefits for other uses, such as supporting instream flows or National Wildlife Refuges.

^l Values depend on the region, end-use, and other circumstances; the high end of the range would be relatively rare. "The Importance of Water to the U.S. Economy, Highlights Document." EPA, Office of Water, December 2012.

Table 2. Estimated FY 2018 Economic Contributions Resulting from Interior's Activities

Category	Direct Economic Contribution (billions, 2018-\$)	Total Economic Contributions¹ (billions, 2018-\$)	Value Added (billions, 2018-\$)	Total Domestic Jobs Supported
DOI Payroll (63,061 FTEs in FY 2018)	7.09	10.59	5.97	63,552
Grants & Payments to non-Federal Entities ²	5.12	11.41	7.33	88,325
Support for Tribal Governments	0.57	1.35	0.88	9,316
Public Resources as Inputs to Production				
Recreation and Tourism	24.04	58.13	33.38	451,775
<i>Energy</i>				
Oil and gas	70.36	139.03	85.39	607,359
Coal	5.39	11.52	6.53	36,010
Hydropower	1.34	3.15	1.76	11,753
Wind Power	0.02	0.18	n/a	1,018
Geothermal	0.08	0.25	n/a	1,159
Solar	0.05	0.18	n/a	1,161
Locatable Minerals and Hardrock Leasables ³	4.33	9.59	5.55	34,915
Salable and Other Leasable Minerals	1.48	3.09	1.85	10,791
<i>Other Production</i>				
Irrigation water	19.48	51.99	28.18	412,202
M&I water	4.43	11.40	6.34	53,754
Grazing	1.09	2.56	n/a	41,822
Timber	0.34	0.78	0.28	2,928
Total	145.21	315.21	183.42	1,827,840

¹ Total economic contributions equals the sum of direct, indirect, and induced contributions. The direct contribution effect is the known or predicted change in the local economy that is to be studied. The indirect contribution effect is the business-to-business transactions required to satisfy the direct effect. Finally, the induced contribution is derived from local spending on goods and services by people working to satisfy the direct and indirect effects. For payroll contributions, the total effect includes only the induced effects from household spending of salaries by Interior employees. The direct effect is equal to Interior's wage bill. In an economic contribution analysis of salaries, the direct effect would not be part of the total, and this entry would be 0. This does not imply that the induced effects are zero.

² This category excludes payments via U.S. Treasury.

³ Contribution estimates are based on production from Federal lands in Nevada (for locatable minerals), northwest Colorado (for locatable limestone and gypsum), and Eastern States (for leasable hardrock minerals primarily in Missouri) only. In addition to Nevada and northwest Colorado, locatable mineral production from Federal lands exists in many Western States. With the exception of Nevada and northwest Colorado, information on production by ownership (private, State, or Federal) was not available.

Note: Totals may not add due to rounding. The value added and economic contribution estimates do not capture output or employment effects beyond payroll spending and natural resource production. Bureaus are engaged in various other activities funded by appropriations, e.g., construction, road building, education, etc. Contributions associated with renewables may be underestimated because electricity generation data is not readily available.

Table 3. Summary of FY 2018 Economic Contributions by Bureau

Bureau	Direct Economic Contribution (billions, 2018- $\$$)	Total Economic Contribution (billions, 2018- $\$$)	Total Value Added (billions, 2018- $\$$)	Total Domestic Jobs Supported
National Park Service				
Recreation ¹	16.58	40.12	23.39	328,915
Fish and Wildlife Service				
Recreation	2.44	5.80	3.21	39,156
Bureau of Indian Affairs²				
Oil and gas	5.65	10.11	6.55	39,905
Coal	0.67	1.40	0.79	4,412
Irrigation water	2.68	8.05	3.53	57,962
Grazing	0.01	0.04	n/a	436
Timber	0.09	0.19	0.07	733
Other minerals ³	0.01	0.01	0.00	62
BIA Subtotal	9.10	19.80	10.95	103,510
Bureau of Land Management				
Oil and gas	36.44	71.53	48.43	300,104
Coal	4.72	10.12	5.74	31,598
Geothermal	0.08	0.25	n/a	1,159
Locatable Minerals and Hardrock Leasable Minerals	4.33	9.59	5.55	34,915
Salable and Other Leasable Minerals	1.47	3.08	1.84	10,729
Grazing	1.08	2.53	n/a	41,386
Timber ⁴	0.26	0.58	0.21	2,195
Recreation	2.74	6.80	3.78	47,233
Wind	0.02	0.18	n/a	1,018
Solar	0.05	0.18	n/a	1,161
BLM Subtotal	51.19	104.86	65.55	471,498
Bureau of Reclamation				
Hydropower	1.34	3.15	1.76	11,753
Irrigation water	16.80	43.94	24.65	354,240
M&I water	4.43	11.40	6.34	53,754
Recreation	2.27	5.40	2.99	36,472
BOR Subtotal	24.84	63.90	35.74	456,219
Bureau of Ocean Energy Management/Bureau of Safety and Environmental Enforcement				
Oil and gas	28.28	57.40	30.40	267,350
Subtotal: All Bureau Production Contributions	132.43	291.87	169.25	1,666,648

(Table continues)

U.S. Department of the Interior Economic Report, Fiscal Year 2018

Bureau	Direct Economic Contribution (billions, 2018-\$)	Total Economic Contribution (billions, 2018-\$)	Total Value Added (billions, 2018-\$)	Total Domestic Jobs Supported
DOI Budgetary Items				
DOI Payroll (63,061 FTEs in FY 2018)				
National Park Service	1.84	2.75	1.55	16,529
Fish and Wildlife Service	1.00	1.49	0.84	8,954
Bureau of Land Management	1.08	1.61	0.91	9,641
Bureau of Reclamation	0.66	0.98	0.55	5,888
Bureau of Safety and Environmental Enforcement	0.12	0.18	0.10	1,062
Bureau of Ocean Energy Management	0.09	0.13	0.07	773
Bureau of Indian Affairs	0.69	1.03	0.58	6,160
US Geological Survey	0.93	1.39	0.78	8,345
Office of Surface Mining Reclamation and Enforcement	0.05	0.08	0.04	474
Office of Insular Affairs	0.01	0.01	0.01	77
Other Interior Offices	0.63	0.94	0.53	5,650
Subtotal: DOI Payroll	7.09	10.59	5.97	63,552
Grants, Payments, and Tribal Support				
Grants and Payments to non-Federal Entities ⁵	5.12	11.41	7.33	88,325
Support for Tribal Governments	0.57	1.35	0.88	9,316
Subtotal: Grants, Payments and Tribal Support	5.69	12.75	8.20	97,640
Total DOI Production and Budget	145.21	315.21	183.42	1,827,840

¹ Recreation economic contribution estimates include values from U.S. territories.

² Does not include sales of renewable energy on tribal land.

³ Source: BIA and ONRR data. Due to data limitations, values may not match those reported by ONRR.

⁴ The economic output associated with fuelwood harvest on BLM lands was overestimated in previous years due to a data conversion error. The economic output reported here is based on correct FY 2018 harvest data.

⁵ Excludes payments via U.S. Treasury. Does not include leasing revenues and corporate taxes that flow to the Treasury as a result of Interior's offshore mineral activities. These revenues are included in the BOEM totals.

Table 4. Estimated Value Added Supported by Interior Activities, by Sector and State¹ (FY 2018, \$ billions)

State	Recreation ^{2,3}	Energy & Minerals ^{2,5}	Grazing & Timber ⁴	Major Grants & Payments ⁶	DOI Payroll ⁷	All Sectors ⁸
Alabama	0.06	0.64	0.00	0.07	0.01	0.78
Alaska	1.47	0.79	0.00	0.12	0.11	2.49
Arizona	1.82	0.18	0.01	0.09	0.22	2.32
Arkansas	0.14	0.15	0.00	0.03	0.01	0.33
California	3.65	2.68	0.01	0.21	0.40	6.94
Colorado	1.21	6.07	0.01	0.22	0.43	7.94
Connecticut	0.00	0.11	0.00	0.01	0.00	0.12
Delaware	0.00	0.03	0.00	0.01	0.00	0.04
District of Columbia	0.59	0.23	0.00	0.00	0.07	0.89
Florida	0.74	1.04	0.00	0.04	0.07	1.89
Georgia	0.36	0.29	0.00	0.04	0.05	0.74
Hawaii	0.56	0.06	0.00	0.01	0.03	0.66
Idaho	0.28	0.23	0.01	0.06	0.10	0.67
Illinois	0.04	0.44	0.00	0.06	0.01	0.55
Indiana	0.07	0.32	0.00	0.03	0.01	0.43
Iowa	0.04	0.09	0.00	0.02	0.00	0.15
Kansas	0.04	0.23	0.00	0.02	0.01	0.30
Kentucky	0.08	0.16	0.00	0.08	0.01	0.34
Louisiana	0.07	5.17	0.00	0.12	0.06	5.42
Maine	0.36	0.02	0.00	0.01	0.01	0.40
Maryland	0.18	0.40	0.00	0.02	0.03	0.64
Massachusetts	0.81	0.20	0.00	0.02	0.06	1.09
Michigan	0.21	0.24	0.00	0.04	0.02	0.52
Minnesota	0.11	0.13	0.00	0.05	0.04	0.33
Mississippi	0.13	0.64	0.00	0.04	0.01	0.83
Missouri	0.23	0.17	0.00	0.04	0.03	0.48
Montana	0.76	0.56	0.01	0.11	0.08	1.52
Nebraska	0.04	0.06	0.00	0.02	0.02	0.14
Nevada	0.82	3.77	0.00	0.05	0.10	4.74
New Hampshire	0.01	0.03	0.00	0.01	0.00	0.05
New Jersey	0.15	0.19	0.00	0.02	0.02	0.38
New Mexico	0.27	14.96	0.00	0.65	0.15	16.02
New York	0.64	0.41	0.00	0.04	0.05	1.13

(Table continues)

State	Major					All Sectors ⁸
	Recreation ^{2,3}	Energy & Minerals ^{2,5}	Grazing & Timber ⁴	Grants & Payments ⁶	DOI Payroll ⁷	
North Carolina	1.18	0.30	0.00	0.04	0.03	1.54
North Dakota	0.06	4.69	0.00	0.07	0.03	4.86
Ohio	0.06	0.47	0.00	0.06	0.02	0.60
Oklahoma	0.10	1.17	0.00	0.04	0.04	1.35
Oregon	0.97	0.07	0.21	0.07	0.14	1.44
Pennsylvania	0.41	0.53	0.00	0.16	0.06	1.16
Rhode Island	0.02	0.03	0.00	0.01	0.00	0.06
South Carolina	0.10	0.14	0.00	0.02	0.01	0.27
South Dakota	0.24	0.03	0.00	0.02	0.05	0.35
Tennessee	0.57	0.18	0.00	0.04	0.03	0.81
Texas	0.32	13.14	0.00	0.15	0.07	13.68
Utah	1.47	2.20	0.00	0.17	0.10	3.94
Vermont	0.00	0.01	0.00	0.01	0.00	0.03
Virginia	1.00	0.47	0.00	0.05	0.22	1.75
Washington	0.54	0.18	0.07	0.06	0.12	0.98
West Virginia	0.05	0.10	0.00	0.09	0.02	0.26
Wisconsin	0.08	0.12	0.01	0.04	0.03	0.28
Wyoming	0.83	13.22	0.00	0.61	0.05	14.71

¹ Data is not available to show economic contributions associated with hydropower, irrigation and M&I water by state.

² Contributions from activities on BIA land are not included due to lack of state-specific information.

³ Recreation contributions are based on visitor spending at units managed by BLM, BOR, FWS and NPS.

⁴ Timber contributions are based on harvests on BLM and BIA lands. BIA timber contributions are estimated using methods based on BLM's FY 2018 per-ccf contributions for each state. Grazing value added is not available.

⁵ Energy & Minerals contributions are based on activities related to onshore and offshore oil and gas, coal, non-metallic minerals. Value added from geothermal, wind, and solar electricity generation is not available.

⁶ Grants and Payments include AML, PILT, royalties and certain other grants (Sport Fish, Wildlife Restoration, State and Tribal Wildlife Grants, Land and Water Conservation Fund with GOMESA, Historic Preservation, Coastal Impact Assistance Program, Cooperative Endangered Species Conservation Fund, and Refuge Revenue Sharing).

⁷ DOI payroll contributions are the economic contribution of DOI employees spending their pay.

⁸ These totals represent contributions supported by energy, minerals, grazing, timber, salaries and grants and payments in each of the 50 States and the District of Columbia. The economic contributions reported in Table 4 were estimated using a national-level model that includes interstate "leakages" not captured in state-level models. Therefore, a sum of state totals would not equal the national total.

Table 5. Estimated Total Output Supported by Interior Activities, by Sector and State¹ (FY 2018, \$ billions)

State	Recreation ^{2,3}	Energy & Minerals ^{2,5}	Grazing & Timber ⁴	Major Grants & Payments ⁶	DOI Payroll ⁷	All Sectors ⁸
Alabama	0.10	1.39	0.00	0.12	0.01	1.63
Alaska	2.47	1.07	0.00	0.17	0.18	3.91
Arizona	3.09	0.33	0.10	0.14	0.38	4.04
Arkansas	0.26	0.36	0.00	0.05	0.02	0.68
California	5.90	4.79	0.11	0.30	0.64	11.75
Colorado	2.05	8.97	0.16	0.32	0.74	12.25
Connecticut	0.00	0.19	0.00	0.02	0.00	0.22
Delaware	0.01	0.05	0.00	0.02	0.00	0.07
District of Columbia	0.83	0.43	0.00	0.00	0.11	1.37
Florida	1.24	2.06	0.00	0.08	0.13	3.51
Georgia	0.62	0.57	0.00	0.07	0.09	1.34
Hawaii	0.86	0.13	0.00	0.02	0.05	1.05
Idaho	0.52	0.40	0.49	0.09	0.18	1.68
Illinois	0.07	0.88	0.00	0.10	0.02	1.06
Indiana	0.12	0.75	0.00	0.05	0.02	0.94
Iowa	0.06	0.18	0.00	0.03	0.01	0.28
Kansas	0.08	0.45	0.00	0.04	0.03	0.59
Kentucky	0.14	0.34	0.00	0.14	0.02	0.64
Louisiana	0.12	10.36	0.00	0.17	0.11	10.77
Maine	0.60	0.04	0.00	0.02	0.02	0.69
Maryland	0.29	0.71	0.00	0.03	0.06	1.09
Massachusetts	1.26	0.36	0.00	0.03	0.09	1.74
Michigan	0.35	0.49	0.00	0.08	0.04	0.96
Minnesota	0.19	0.24	0.00	0.08	0.08	0.59
Mississippi	0.24	1.37	0.00	0.07	0.03	1.71
Missouri	0.42	0.35	0.00	0.07	0.06	0.90
Montana	1.42	0.98	0.32	0.17	0.15	3.05
Nebraska	0.08	0.11	0.00	0.03	0.03	0.25
Nevada	1.35	6.20	0.30	0.08	0.17	8.10
New Hampshire	0.01	0.06	0.00	0.02	0.01	0.10
New Jersey	0.24	0.35	0.00	0.03	0.03	0.65
New Mexico	0.49	18.87	0.36	0.90	0.26	20.89
New York	0.95	0.74	0.00	0.06	0.07	1.82
North Carolina	2.07	0.57	0.00	0.07	0.05	2.76

(Table continues)

State	Recreation ^{2,3}	Energy & Minerals ^{2,5}	Grazing & Timber ⁴	Major Grants & Payments ⁶	DOI Payroll ⁷	All Sectors ⁸
North Dakota	0.11	5.98	0.00	0.11	0.06	6.25
Ohio	0.11	0.98	0.00	0.10	0.03	1.22
Oklahoma	0.18	2.15	0.00	0.08	0.07	2.48
Oregon	1.66	0.12	0.77	0.10	0.23	2.89
Pennsylvania	0.70	1.07	0.00	0.26	0.09	2.12
Rhode Island	0.04	0.06	0.00	0.02	0.00	0.11
South Carolina	0.18	0.31	0.00	0.03	0.02	0.53
South Dakota	0.44	0.07	0.02	0.04	0.09	0.66
Tennessee	0.94	0.37	0.00	0.07	0.05	1.43
Texas	0.54	23.25	0.00	0.24	0.12	24.15
Utah	2.65	3.48	0.17	0.25	0.18	6.74
Vermont	0.01	0.02	0.00	0.02	0.01	0.06
Virginia	1.70	0.86	0.00	0.08	0.37	3.01
Washington	0.85	0.33	0.11	0.09	0.20	1.58
West Virginia	0.09	0.20	0.00	0.15	0.04	0.48
Wisconsin	0.13	0.24	0.01	0.07	0.06	0.52
Wyoming	1.47	18.38	0.34	0.85	0.09	21.13

¹ Data is not available to show economic contributions associated with hydropower, irrigation and M&I water by state.

² Contributions from activities on BIA land are not included due to lack of state-specific information.

³ Recreation contributions are based on visitor spending at units managed by BLM, BOR, FWS and NPS.

⁴ Timber contributions are based on harvests on BLM and BIA lands. BIA timber contributions are estimated using methods based on BLM's FY 2018 per-ccf contributions for each state. BIA grazing contributions are not available due to lack of state-specific data.

⁵ Energy & Minerals contributions are based on activities related to onshore and offshore oil and gas, coal, non-metallic minerals, and geothermal, wind, and solar electricity generation.

⁶ Grants and Payments include AML, PILT, royalties and certain other grants (Sport Fish, Wildlife Restoration, State and Tribal Wildlife Grants, Land and Water Conservation Fund with GOMESA, Historic Preservation, Coastal Impact Assistance Program, Cooperative Endangered Species Conservation Fund, and Refuge Revenue Sharing).

⁷ DOI payroll contributions are the economic contribution of DOI employees spending their pay.

⁸ These totals represent contributions supported by energy, minerals, grazing, timber, salaries and grants and payments in each of the 50 States and the District of Columbia. The economic contributions reported in Table 5 were estimated using a national-level model that includes interstate "leakages" not captured in state-level models. Therefore, a sum of state totals would not equal the national total.

Table 6. Estimated Total Jobs Supported by Interior Activities, by Sector and State¹ (FY 2018, jobs)

State	Recreation ^{2,3}	Energy & Minerals ^{2,5}	Grazing & Timber ⁴	Major Grants & Payments ⁶	DOI Payroll ⁷	All Sectors ⁸
Alabama	1,135	8,039	0	1,028	86	10,288
Alaska	21,303	3,477	20	1,315	1,225	27,339
Arizona	28,536	1,583	2,479	1,094	2,588	36,280
Arkansas	3,026	1,380	0	432	156	4,994
California	47,330	21,129	1,181	1,833	3,793	75,266
Colorado	17,374	38,779	2,144	2,619	4,945	65,861
Connecticut	32	680	0	131	31	874
Delaware	47	211	0	109	20	386
District of Columbia	6,750	1,435	0	16	660	8,860
Florida	11,747	9,664	0	569	902	22,883
Georgia	6,451	2,556	0	499	648	10,154
Hawaii	6,708	604	0	117	304	7,733
Idaho	5,040	2,091	6,450	828	1,377	15,786
Illinois	529	3,309	0	671	157	4,667
Indiana	1,352	2,300	0	384	139	4,175
Iowa	702	642	0	262	67	1,674
Kansas	660	2,510	0	326	188	3,684
Kentucky	1,578	1,469	0	1,224	154	4,425
Louisiana	1,136	49,258	0	1,538	814	52,746
Maine	6,140	210	23	194	151	6,718
Maryland	2,740	2,743	0	213	359	6,055
Massachusetts	10,824	1,225	0	165	595	12,808
Michigan	3,449	1,926	2	536	312	6,225
Minnesota	1,716	995	29	560	519	3,819
Mississippi	3,116	12,740	17	692	205	16,769
Missouri	4,711	1,504	0	565	428	7,208
Montana	14,536	4,333	3,246	1,617	1,220	24,951
Nebraska	808	493	2	263	230	1,796
Nevada	11,522	22,103	4,138	572	1,125	39,459
New Hampshire	92	214	0	157	58	522
New Jersey	2,328	1,483	0	160	174	4,145
New Mexico	4,878	55,759	8,894	9,037	2,017	80,586
New York	8,139	3,009	0	368	455	11,971
North Carolina	21,703	2,608	0	492	346	25,148
North Dakota	1,086	17,741	28	959	393	20,207

(Table continues)

State	Recreation ^{2,3}	Energy & Minerals ^{2,5}	Grazing & Timber ⁴	Major Grants & Payments ⁶	DOI Payroll ⁷	All Sectors ⁸
Ohio	1,158	3,628	0	754	202	5,742
Oklahoma	1,548	10,864	1	613	536	13,562
Oregon	15,505	580	7,220	778	1,664	25,747
Pennsylvania	7,469	4,320	0	2,027	658	14,474
Rhode Island	329	227	0	118	20	693
South Carolina	1,850	1,212	0	253	132	3,446
South Dakota	4,786	440	258	362	706	6,553
Tennessee	9,231	1,441	0	482	335	11,489
Texas	4,894	105,946	0	1,731	791	113,362
Utah	25,704	15,619	3,894	2,177	1,253	48,647
Vermont	76	121	0	148	51	395
Virginia	17,611	3,590	0	624	2,535	24,360
Washington	7,095	1,462	1,129	602	1,226	11,514
West Virginia	1,079	989	0	1,452	322	3,841
Wisconsin	1,449	964	147	516	431	3,506
Wyoming	15,387	60,818	3,605	8,096	689	88,595

¹ Data is not available to show economic contributions associated with hydropower, irrigation and M&I water by state.

² Contributions from activities on BIA land are not included due to lack of state-specific information.

³ Recreation contributions are based on visitor spending at units managed by BLM, BOR, FWS and NPS.

⁴ Timber contributions are based on harvests on BLM and BIA lands. BIA timber contributions are estimated using methods based on BLM's FY 2018 per-ccf contributions for each state. BIA grazing contributions are not available due to lack of state-specific data.

⁵ Energy & Minerals contributions are based on activities related to onshore and offshore oil and gas, coal, non-metallic minerals, and geothermal, wind, and solar electricity generation.

⁶ Grants and Payments include AML, PILT, royalties and certain other grants (Sport Fish, Wildlife Restoration, State and Tribal Wildlife Grants, Land and Water Conservation Fund with GOMESA, Historic Preservation, Coastal Impact Assistance Program, Cooperative Endangered Species Conservation Fund, and Refuge Revenue Sharing).

⁷ DOI payroll contributions are the economic contribution of DOI employees spending their pay.

⁸ These totals represent contributions supported by energy, minerals, grazing, timber, salaries and grants and payments in each of the 50 States and the District of Columbia. The economic contributions reported in Table 6 were estimated using a national-level model that includes interstate "leakages" not captured in state-level models. Therefore, a sum of state totals would not equal the national total.

Contributors

The Office of Policy Analysis would like to acknowledge the following staff of the Department of the Interior who developed economic contribution information and collaborated across bureaus and offices in order to produce this Report:

Office of the Secretary

Shawn Buckner
Christian Crowley
Fabiano Franco
Chloe Mayne
Ann Miller
Benjamin Simon
Kristin Skrabis

National Park Service

Lynne Koontz

Bureau of Land Management

Rebecca Moore

Fish and Wildlife Service

Jim Caudill

Bureau of Indian Affairs

Martin Abeyta
Jack Stevens

Bureau of Reclamation

Bill Taylor
DeShawn Woods

Bureau of Ocean Energy Management

Sarah Peters Coffman
Mark Jensen

Office of Surface Mining Reclamation and Enforcement

Mark Gehlhar

US Geological Survey

Catherine Cullinane Thomas

