U.S. Department of the Interior

Economic Report

FY 2017

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Prepared by the Department of the Interior Office of Policy Analysis

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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 the 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. 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: Economists refer to the "real" value of a good when the "nominal" price has been adjusted for inflation. This allows for comparing valuations for goods produced at different dates.

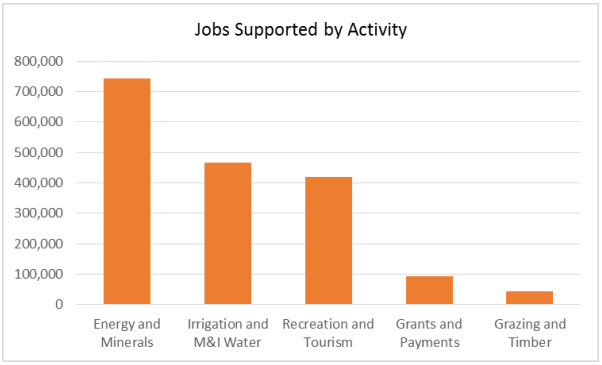
GDP deflator: An index tracking changes in the prices of final goods and services produced in an economy.

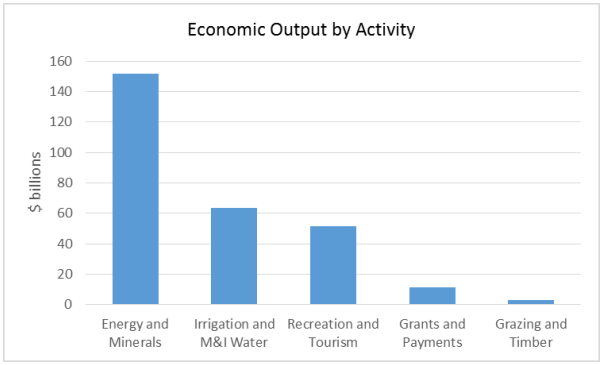
Introduction

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 our future. Interior's people, programs, and responsibilities impact 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, providing roughly a quarter of the Nation's domestic supplies of oil and natural gas. These oil and gas 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. Irrigation and municipal and industrial water stored and supplied by Interior's facilities 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 2017, production and activities on DOI lands were associated with about $165 billion in value added, about $292 billion in economic output, and supported an estimated 1.8 million jobs. 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.[1]





[1] The value of all commodities and other inputs to production associated with Interior's activities increased over the past year by about 18 percent in nominal terms, from $115 billion in FY 2016 to $137 billion in FY 2017. Much of this change reflects somewhat higher energy production and prices. This report represents the ninth 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 below, followed by tables that provide additional detail.[2]

- **Fossil Fuel Energy:** In FY 2017, Interior-managed lands and waters produced 869 million barrels of crude oil, 4.6 trillion cubic feet of natural gas, and 347 million tons of coal. Some average prices in FY 2017 included $49.33/bbl for oil, $3.02/mcf of natural gas, and $11.78 per ton of Powder River Basin coal. Oil and natural gas prices were somewhat higher in FY 2017 than in FY 2016 ($42.62/bbl for oil and $2.36/mcf for natural gas, $2017). Oil, gas and coal produced from Interior lands and waters supported: an estimated $79.4 billion in value added; an estimated economic output contribution of $134 billion; and an estimated 676,000 jobs.
- **Renewable Energy**: In FY 2017, Interior lands and facilities produced 43.9 million MWh of hydropower. Interior lands host renewable power projects for solar (4,462 MW), wind (2,479 MW), and geothermal energy (1,620 MW).[3] In FY 2017, the Bureau of Land Management (BLM) did not approve any new wind, solar, or geothermal projects on public lands. Renewable energy activities supported an estimated $4.3 billion in output and over 18,600 jobs.
- **Non-fuel Minerals**: In FY 2017, Interior lands produced a wide variety of minerals. For example, an estimated 91,400 kg of gold were produced from the Bureau of Land Management (BLM) lands in Nevada;[4] the average price of gold in 2017 was $1,260 per troy ounce. Non-fuel mineral production supported an estimated value added of $7.0 billion, estimated economic output of $13.5 billion; and about 48,700 jobs.
- **Recreation**: In FY 2017, Interior's lands hosted an estimated 483 million visits. The net economic value of a visit to Interior lands varies depending on the activity. For FY 2017, visitation to Interior sites supported an estimated $29.0 billion in value added, $51.6 billion in economic output, and about 418,000 jobs.
- **Water**: Interior stores and delivers water for irrigation, municipal and industrial (M&I), 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 $34.3 billion in value added, about $63.4 billion in economic output, an estimated 465,000 jobs. Interior also delivers water to support in-stream flows, wildlife refuges, and other uses that are difficult to value fully and not typically reflected in economic contribution estimates.

[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.

[3] Installed capacities on BLM land as of November 2017.

[4] 91,400 kg is equivalent to 2.94 million troy ounces. Data on gold production from BLM lands in Nevada is for CY 2016.

- **Forage and Grazing**: In FY 2017, Interior lands provided access to 10.6 million animal unit months (AUMs) of forage. Prices for forage vary widely, from the $1.87 per AUM fee on BLM-managed lands to $19.30 per AUM on State and private grazing lands.[5] This production supported an estimated $2.5 billion in economic output and about 41,000 jobs. The federal fee is an administrative 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 2017, about 597,000 mbf (1 mbf = 1,000 board-feet) of sawtimber was harvested on BLM and tribal lands. Approximately 62 percent of the harvest came from lands managed by BIA, while the remaining percent came from BLM-managed lands. This timber harvest supported about $0.3 billion in value added, roughly $0.8 billion in economic output, and about 3,400 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 these products could not be explicitly analyzed.
- **Grants/Payments**: Activities related to grant and payment programs administered by Interior supported about $7.1 billion in value added, $11.3 billion in economic output, about 94,000 jobs in FY 2017.[6] Within these totals:
    - Indian Affairs grants to support tribal governments supported value added of $0.8 billion, economic output of $1.3 billion, and about 9,000 jobs.
    - Grants and payments to Insular areas[7] 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.
- **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 accruing to households, communities, and economies are not defined with a set of consistent metrics nor are they bought and sold in markets. This creates challenges in the valuation of these goods and services.
- **Scientific Data**: Interior collects and provides public information ranging from satellite data to 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 mature standardized methods to analyze these benefits.

[5] BLM increased the federal grazing fee to $2.11 in 2016 and decreased it to $1.87 in 2017, pursuant to the statutory requirements under the Public Rangelands Improvement Act of 1978. Source for private and state grazing fee: http://usda.mannlib.cornell.edu/usda/nass/AgriPric/2010s/2018/AgriPric-01-30-2018.pdf

[6] It is possible that grants and payments support some of the economic activity reported for other sectors 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 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 research and development 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:
  - Collaborating on 841 Cooperative Research and Development Agreements, of which 477 were new in FY 2017.
  - Engaging In at least 247 other collaborative R&D relationships.
  - Disclosure of twelve new inventions. In addition, five patents were filed and three patents were received.
  - Managing 15 licenses for inventions and other intellectual property earning about $50,000.

Table 1. Interior-Managed Resources: Production Quantities and Values, FY 2009-FY 2017

Commodity [a]		FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Recreation [b]	*Visits to Interior sites (millions)*	415	439	434	417	407	423	443	473	483
	Economic value per visit (2017-$)					$38 to $66				
Crude Oil [c]	*Federal production (millions of barrels)*	651	724	659	633	673	723	795	810	869
	WTI - Average price per bbl (inflation adjusted, 2017-$)	$76.49	$94.99	$106.55	$101.38	$105.57	$102.50	$50.17	$42.62	$49.33
Natural Gas [d]	*Federal production (trillions of cubic feet)*	6.7	6.6	6.1	5.7	5.3	5.1	5.1	4.9	4.6
	Average wellhead price per thousand cubic feet (inflation adjusted, 2017-$)	$4.53	$5.36	$4.43	$2.87	$3.84	$4.55	$3.14	$2.36	$3.02
Coal [e]	*Federal production (millions of tons)*	490	478	464	461	421	424	409	310	347
	Average price per short ton subbituminous coal (inflation adjusted, 2017-$)	$14.04	$14.43	$15.34	$9.72	$11.25	$12.20	$10.51	$10.34	$11.78
Hardrock Minerals – Gold [f]	*Estimated gold production on Federal lands (2008-2011) and Federal lands in NV (2012-2017) (kg)*	95,890	99,330	100,620	76,223	76,223	77,738	74,661	79,924	91,427
	Average gold price per troy ounce (calendar year) (inflation adjusted, 2017-$)	$1,032	$1,239	$1,652	$1,755	$1,445	$1,311	$1,309	$1,206	$1,260
Forage [g]	*BLM, AUMs permitted (millions)*	8.6	8.7	9.1	8.9	8.5	8.2	8.3	8.6	8.7
	Price per animal unit month (2017-$)					$1.87 to $19.30				
Timber [h]	*BLM commercial sawtimber harvested (thousand board-feet, mbf)*	190,504	183,558	218,467	208,943	236,889	252,689	271,501	227,478	227,216
	BIA harvested timber (mbf)	426,250	396,532	359,697	333,209	336,320	261,089	344,787	445,636	369,462
	Total for BLM and BIA (mbf)	616,754	580,090	578,164	542,152	573,209	513,778	616,288	673,114	596,678

(Table continues)

Commodity [a]		FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
	Average Western OR BLM received price per mbf (inflation adjusted, 2017-$)	$174.71	$103.74	$100.61	$126.98	$132.48	$159.13	$194.71	$223.87	$211.54
Electricity Generation										
Hydroelectric	*Net generation (million MWh)*	39.5	35.8	48.6	47.5	39.8	38.0	36.1	36.7	43.9
Geothermal [i]	*New approved capacity (MW)*	67.5	30	312	70	110	0	0	48	0
Wind [i]	*New approved capacity (MW)*	4	150	654	1815	826	0	0	0	0
Solar [i]	*New approved capacity (MW)*	0	3,662	850	0	1,000	768	492	287	0
	Average electricity spot price per MWh [j] *(calendar year) (inflation adjusted, 2017-$)*									
	Mid-Columbia (Northwest)	$36.81	$37.06	$30.04	$22.94	$32.96	$39.78	$26.81	$28.42	$31.91
	SP-15 (California)	$39.54	$41.51	$38.06	$35.68	$43.80	$53.56	$37.12	$33.09	$35.72
Water										
Irrigation, and Municipal & Industrial	*Million acre-feet delivered (estimated)* [k]	n/a	n/a	n/a	26.7	27.3	24.4	24.9	26.2	26.1
	$ per acre-foot [l]					$1 to $4,500				
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.									
Data and Information	Interior collects and provides public information ranging from satellite data to 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 mature standardized methods to analyze these benefits.									

(Table continues)

Notes to Table 1.

[a] Unit values are FY 2017 market values or estimated economic value, depending on the commodity. Values for prior years have been adjusted for inflation using the GDP deflator from https://www.bea.gov/iTable. 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. Low end estimate is the mean study value for "general recreation"; high end estimate is for "wildlife viewing." This range also includes activities such as sightseeing, camping, picnicking and visiting beaches. Source: John Loomis (2005) "Updated Outdoor Recreation Use Values on National Forests and Other Lands," updated to 2017-$ using the GDP deflator.

[c] Production is based on ONRR production volumes. Includes production on tribal land. Crude oil prices are West Texas Intermediate (WTI) calendar-year per-barrel spot prices from EIA.gov. 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 Henry Hub calendar-year per-mcf spot prices from EIA.gov.

[e] 2008-2011 coal prices from EIA.gov: http://www.eia.gov/totalenergy/data/annual/pdf/sec7_21.pdf; 2012-2017 price data are from ONRR Monthly Market Analysis reports

[f] Gold figures for 2008-2011 are estimates of gold production from the Federal estate. Production for 2012-2017 represents production from Federal estate in Nevada based on data from the State of Nevada. https://minerals.usgs.gov/minerals/pubs/mcs/2018/mcsapp2018.pdf.

[g] The low-end is the 2017 value of the Federal grazing fee which represents the fair market value of grazing, beginning with a 1966 base value of $1.23 per AUM. 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 11 Western State average rental price for private forage in 2017, 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 2017, BIA permitted an estimated 1.9 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. Generation information is not available for these resources. The data represents approved capacity. In FY 2017 there was no new capacity approved.

[j] Prices are annual average on-peak. Source: EIA – Electric Market National Overview, Regional Spot Prices. These are average annual wholesale electricity prices for the indicated regions. The FY 2016 DOI Economic Report presented average annual Nationwide retail electricity prices. Wholesale electricity prices for the Northwest and California regions are a more 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 National Wildlife Refuges.

[l] Values depending 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 Economic Contributions Resulting from Interior's Activities

Category	Direct Economic Contribution (billions, 2017-$)	Total Economic Contributions: Direct + Indirect + Induced[1] (billions, 2017-$)	Value Added (billions, 2017-$)	Total Domestic Jobs Supported
DOI Payroll				
~78,000 employees in 2017	6.85	10.34	5.77	63,339
Grants & Payments to non-Federal Entities[2]	4.49	9.96	6.29	84,447
Support for Tribal Governments	0.58	1.29	0.82	9,245
Public Resources as Inputs to Production				
Recreation and Tourism	25.36	51.59	28.99	418,432
Energy				
Oil, gas and coal	67.22	133.95	79.38	676,151
Hydropower	1.31	3.32	1.85	12,447
Wind Power	0.03	0.44	n/a	2,490
Geothermal	0.08	0.23	n/a	1,082
Solar	0.11	0.35	n/a	2,579
Locatable Minerals and Hardrock Leasables[3]	3.95	9.84	5.08	36,108
Salable and Other Leasable minerals	1.53	3.65	1.94	12,634
Other Production				
Irrigation water	19.58	52.41	28.18	413,262
M&I water	4.27	11.00	6.13	52,136
Grazing	1.05	2.49	n/a	41,322
Timber	0.35	0.792	0.29	3,359
Total	**136.76**	**291.65**	**164.71**	**1,829,032**

[1] The direct effect is the known or predicted change in the local economy that is to be studied. The indirect effect is the business to business transactions required to satisfy the direct effect. Finally, the induced effect is derived from local spending on goods and services by people working to satisfy the direct and indirect effects.

[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.

Table 3. Summary of FY 2017 Economic Contributions by Bureau

Production Inputs (DOI Activity)	FY 2017			
Bureau	**Direct Economic Contribution**[5] (billions, 2017-$)	**Total Economic Contribution** (billions, 2017-$)	**Total Value Added** (billions, 2017-$)	**Total Domestic Jobs Supported**
National Park Service				
Recreation[1]	18.04	35.75	20.28	306,237
Fish and Wildlife Service				
Recreation	2.33	5.33	2.95	37,794
Bureau of Indian Affairs[2]				
Oil, gas and coal	4.17	9.85	6.00	45,786
Irrigation water	2.61	7.96	3.31	47,003
Grazing	0.02	0.05		595
Timber	0.05	0.12	0.04	508
Other minerals[3]	0.01	0.10	0.05	347
BIA Subtotal	6.86	18.09	9.40	94,238
Bureau of Land Management				
Oil, gas and coal	30.38	71.42	43.14	322,292
Geothermal	0.08	0.23	-	1,082
Locatable Minerals and Hardrock Leasable Minerals	3.95	9.84	5.08	36,108
Salable and Other Leasable Minerals	1.52	3.55	1.89	12,287
Grazing	1.03	2.43		40,727
Timber	0.30	0.67	0.24	2,852
Recreation	3.33	6.71	3.67	47,488
Wind	0.03	0.44	-	2,490
Solar	0.11	0.35	-	2,579
BLM Subtotal	40.73	95.64	54.02	467,905

(Table continues)

Bureau of Reclamation				
Hydropower	1.31	3.32	1.85	12,447
Irrigation water	16.97	44.45	24.87	366,259
M&I water	4.27	11.00	6.13	52,136
Recreation	1.66	3.80	2.10	26,913
BOR Subtotal	24.21	62.57	34.95	457,754
Bureau of Ocean Energy Management/ Bureau of Safety and Environmental Enforcement	32.68	52.68	30.24	308,073
Subtotal: All Bureau Production Contributions	124.85	270.06	151.83	1,672,001

DOI Budgetary Items	**FY 2017**			
	Amount (billions, 2017-$)	**Total Economic Contribution** (billions, 2017-$)	**Total Value Added** (billions, 2017-$)	**Total Domestic Jobs Supported**
Payroll				
National Park Service	1.79	2.70	1.51	16,557
Fish and Wildlife Service	0.99	1.49	0.83	9,157
Bureau of Land Management	1.03	1.56	0.87	9,540
Bureau of Reclamation	0.60	0.91	0.51	5,551
Bureau of Safety and Environmental Enforcement	0.12	0.18	0.10	1,078
Bureau of Ocean Energy Management	0.08	0.12	0.07	763
Indian Affairs	0.66	1.00	0.56	6,139
US Geological Survey	0.91	1.38	0.77	8,434

(Table continues)

DOI Budgetary Items	FY 2017			
	Amount (billions, 2017-$)	**Total Economic Contribution** (billions, 2017-$)	**Total Value Added** (billions, 2017-$)	**Total Domestic Jobs Supported**
Office of Surface Mining Reclamation and Enforcement	0.05	0.08	0.04	488
Office of Insular Affairs	0.01	0.002	0.001	10
Other Interior Offices	0.61	0.92	0.51	5,622
Subtotal DOI Payroll (~78,000 employees in 2017)	6.85	10.34	5.77	63,339
Grants, Payments, and Tribal Support				
Grants and Payments to non-Federal Entities[4]	4.49	9.96	6.29	84,447
Support for Tribal Governments	0.58	1.29	0.82	9,245
Subtotal Grants, Payments and Tribal Support	5.07	11.26	7.11	93,692
Total DOI Production and Budget	**136.76**	**291.65**	**164.71**	**1,829,032**

[1] Recreation sales value and 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] 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.

[5] In some cases the direct economic contribution equals a sales value. For Recreation, the values presented are the sales values, or total visitor expenditures.

Table 4. Estimated Value Added Supported by Interior Activities, by Sector and State[1] (FY 2017, $ billions)

State	Recreation Value Added[2,3]	Energy & Minerals Value Added[2,5]	Grazing & Timber Value Added[4]	Major Grants & Payments Value Added[6]	DOI Payroll Value Added[7]	All Sectors Value Added[8]
Alabama	0.06	1.45	0.00	0.04	0.01	1.55
Alaska	1.40	0.27	0.00	0.09	0.11	1.87
Arizona	1.40	0.27	0.00	0.07	0.21	1.96
Arkansas	0.15	0.10	0.00	0.03	0.01	0.28
California	2.56	2.61	0.01	0.20	0.36	5.73
Colorado	1.06	3.94	0.01	0.19	0.41	5.60
Connecticut	0.00	0.13	0.00	0.01	0.00	0.14
Delaware	0.00	0.03	0.00	0.01	0.00	0.05
District of Columbia	0.57	0.00	0.00	0.00	0.07	0.64
Florida	0.78	0.94	0.00	0.04	0.07	1.84
Georgia	0.33	0.51	0.00	0.04	0.06	0.94
Hawaii	0.40	0.17	0.00	0.01	0.03	0.60
Idaho	0.26	0.20	0.01	0.05	0.09	0.61
Illinois	0.04	0.45	0.00	0.05	0.01	0.56
Indiana	0.08	0.20	0.00	0.03	0.01	0.31
Iowa	0.03	0.10	0.00	0.02	0.00	0.15
Kansas	0.03	0.15	0.00	0.02	0.01	0.22
Kentucky	0.08	0.21	0.00	0.07	0.01	0.38
Louisiana	0.06	4.18	0.00	0.04	0.06	4.34
Maine	0.24	0.04	0.00	0.01	0.01	0.31
Maryland	0.19	0.61	0.00	0.02	0.03	0.85
Massachusetts	0.48	0.23	0.00	0.02	0.05	0.78
Michigan	0.20	0.28	0.00	0.04	0.02	0.54
Minnesota	0.10	0.19	0.00	0.05	0.04	0.38
Mississippi	0.12	1.07	0.00	0.02	0.01	1.22
Missouri	0.17	0.24	0.00	0.04	0.03	0.49
Montana	0.70	0.45	0.01	0.08	0.08	1.32
Nebraska	0.04	0.08	0.00	0.02	0.02	0.15

State	Recreation Value Added[2,3]	Energy & Minerals Value Added[2,5]	Grazing & Timber Value Added[4]	Major Grants & Payments Value Added[6]	DOI Payroll Value Added[7]	All Sectors Value Added[8]
Nevada	0.57	3.27	0.00	0.05	0.10	3.98
New Hampshire	0.01	0.04	0.00	0.01	0.01	0.06
New Jersey	0.16	0.28	0.00	0.02	0.02	0.47
New Mexico	0.25	9.27	0.00	0.46	0.14	10.12
New York	0.58	0.62	0.00	0.04	0.04	1.28
North Carolina	1.07	0.54	0.00	0.04	0.03	1.67
North Dakota	0.06	3.41	0.00	0.06	0.03	3.56
Ohio	0.07	0.43	0.00	0.05	0.02	0.57
Oklahoma	0.11	0.50	0.00	0.03	0.04	0.69
Oregon	0.82	0.12	0.22	0.05	0.13	1.33
Pennsylvania	0.41	0.49	0.00	0.12	0.05	1.08
Rhode Island	0.02	0.05	0.00	0.01	0.00	0.08
South Carolina	0.10	0.21	0.00	0.02	0.01	0.34
South Dakota	0.24	0.04	0.00	0.02	0.05	0.36
Tennessee	0.54	0.18	0.00	0.04	0.03	0.78
Texas	0.30	10.81	0.00	0.08	0.07	11.27
Utah	1.31	2.13	0.00	0.15	0.10	3.70
Vermont	0.00	0.03	0.00	0.01	0.00	0.04
Virginia	0.87	0.87	0.00	0.04	0.22	2.00
Washington	0.56	0.41	0.05	0.05	0.12	1.19
West Virginia	0.05	0.06	0.00	0.07	0.02	0.20
Wisconsin	0.07	0.19	0.01	0.04	0.03	0.34
Wyoming	0.83	11.21	0.00	0.63	0.05	12.72

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

[2] BIA data are not included in these totals due to lack of State-specific information.

[3] Recreation value added is 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 2017 per-ccf contributions for each State. Grazing value added is not available.

[5] Energy & Minerals value added is 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 value added 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 value added is the economic contribution of DOI employees spending their pay.

[8] These totals represent value added 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 State[1] (FY 2017, $ billions)

State	Recreation Total Output[2,3]	Energy & Minerals Total Output[2,5]	Grazing & Timber Total Output[4]	Major Grants & Payments Total Output[6]	DOI Payroll Total Output[7]	All Sectors Total Output[8]
Alabama	0.10	2.79	0.00	0.07	0.01	2.98
Alaska	2.39	0.33	0.00	0.14	0.19	3.05
Arizona	2.42	0.43	0.09	0.12	0.37	3.42
Arkansas	0.27	0.16	0.00	0.05	0.02	0.50
California	4.24	4.73	0.10	0.29	0.59	9.96
Colorado	1.82	6.48	0.18	0.28	0.72	9.48
Connecticut	0.00	0.21	0.00	0.02	0.00	0.24
Delaware	0.01	0.05	0.00	0.02	0.00	0.08
District of Columbia	0.85	0.00	0.00	0.00	0.10	0.95
Florida	1.32	1.61	0.00	0.08	0.13	3.14
Georgia	0.58	0.76	0.00	0.07	0.09	1.50
Hawaii	0.64	0.23	0.00	0.02	0.05	0.93
Idaho	0.50	0.36	0.48	0.08	0.17	1.59
Illinois	0.07	0.76	0.00	0.08	0.02	0.93
Indiana	0.13	0.35	0.00	0.05	0.02	0.55
Iowa	0.06	0.17	0.00	0.03	0.01	0.27
Kansas	0.07	0.30	0.00	0.04	0.03	0.44
Kentucky	0.15	0.32	0.00	0.12	0.02	0.61
Louisiana	0.10	8.93	0.00	0.06	0.11	9.20
Maine	0.43	0.07	0.00	0.03	0.02	0.55
Maryland	0.30	0.85	0.00	0.03	0.05	1.24
Massachusetts	0.75	0.38	0.00	0.03	0.09	1.24
Michigan	0.33	0.47	0.00	0.08	0.04	0.92
Minnesota	0.18	0.34	0.00	0.08	0.07	0.68
Mississippi	0.22	2.20	0.00	0.03	0.03	2.48
Missouri	0.31	0.40	0.00	0.07	0.05	0.83
Montana	1.35	0.85	0.33	0.14	0.15	2.81
Nebraska	0.07	0.12	0.00	0.04	0.03	0.26
Nevada	0.95	6.26	0.26	0.08	0.16	7.71
New Hampshire	0.01	0.07	0.00	0.02	0.01	0.11

State	Recreation Total Output[2,3]	Energy & Minerals Total Output[2,5]	Grazing & Timber Total Output[4]	Major Grants & Payments Total Output[6]	DOI Payroll Total Output[7]	All Sectors Total Output[8]
New Jersey	0.25	0.47	0.00	0.03	0.03	0.77
New Mexico	0.46	13.74	0.36	0.65	0.26	15.47
New York	0.88	1.02	0.00	0.06	0.07	2.02
North Carolina	1.90	0.80	0.00	0.07	0.05	2.81
North Dakota	0.11	4.82	0.00	0.09	0.05	5.07
Ohio	0.12	0.74	0.00	0.09	0.03	0.98
Oklahoma	0.20	0.83	0.00	0.06	0.07	1.16
Oregon	1.45	0.20	0.80	0.08	0.22	2.75
Pennsylvania	0.70	0.83	0.00	0.21	0.09	1.83
Rhode Island	0.04	0.07	0.00	0.02	0.00	0.13
South Carolina	0.18	0.33	0.00	0.04	0.02	0.56
South Dakota	0.44	0.09	0.02	0.04	0.09	0.68
Tennessee	0.93	0.29	0.00	0.07	0.05	1.34
Texas	0.51	18.80	0.00	0.14	0.11	19.57
Utah	2.40	3.60	0.18	0.23	0.17	6.58
Vermont	0.01	0.04	0.00	0.02	0.01	0.07
Virginia	1.47	1.22	0.00	0.07	0.36	3.13
Washington	0.92	0.62	0.09	0.08	0.20	1.91
West Virginia	0.09	0.09	0.00	0.12	0.04	0.33
Wisconsin	0.12	0.34	0.02	0.07	0.06	0.60
Wyoming	1.49	18.00	0.32	0.88	0.09	20.78

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

[2] BIA data are not included in these totals due to lack of State-specific information.

[3] Recreation output is 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 2017 per-ccf contributions for each State. BIA grazing contributions are not available at the State level.

[5] Energy & Minerals output is 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 output 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 output is the economic contribution of DOI employees spending their pay.

[8] These totals represent output 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 State[1] (FY 2017, jobs)

State	Recreation[2,3]	Energy & Minerals[2,5]	Grazing & Timber[4]	Major Grants & Payments[6]	DOI Payroll[7]	Total[8]
Alabama	1,150	19,820	0	598	88	21,657
Alaska	22,632	1,186	18	1,017	1,258	26,112
Arizona	23,652	2,764	2,387	945	2,636	32,382
Arkansas	3,201	977	0	441	166	4,785
California	36,479	24,937	1,110	1,783	3,676	67,985
Colorado	16,220	31,185	2,341	2,289	5,034	57,068
Connecticut	35	1,240	0	155	30	1,459
Delaware	48	334	0	112	20	514
District of Columbia	7,170	0	0	18	630	7,818
Florida	12,773	9,497	0	586	921	23,777
Georgia	6,191	4,820	0	490	683	12,184
Hawaii	5,730	1,449	0	114	319	7,613
Idaho	5,001	1,272	6,411	780	1,371	14,836
Illinois	570	4,413	0	580	162	5,724
Indiana	1,607	2,050	0	353	139	4,149
Iowa	707	1,025	2	260	65	2,059
Kansas	622	1,878	0	333	192	3,026
Kentucky	1,737	1,994	0	1,047	156	4,934
Louisiana	1,017	47,499	0	527	842	49,886
Maine	4,705	473	30	227	152	5,586
Maryland	3,009	5,264	0	207	358	8,838
Massachusetts	7,284	2,255	0	174	552	10,264
Michigan	3,481	2,837	1	550	296	7,166
Minnesota	1,698	1,986	26	605	507	4,822
Mississippi	2,912	14,630	7	276	215	18,040
Missouri	3,521	2,435	0	549	406	6,912
Montana	14,693	3,577	3,324	1,285	1,234	24,112
Nebraska	774	791	4	287	248	2,104
Nevada	8,290	23,831	3,733	564	1,108	37,525
New Hampshire	93	416	0	157	62	727
New Jersey	2,441	2,782	0	164	173	5,561
New Mexico	4,724	64,485	8,693	6,363	1,999	86,264
New York	8,120	5,957	0	359	424	14,861
North Carolina	20,814	5,078	0	497	350	26,739
North Dakota	1,068	18,625	23	806	387	20,908
Ohio	1,407	4,297	0	700	201	6,605
Oklahoma	1,787	4,523	1	501	535	7,347
Oregon	14,306	1,225	7,524	592	1,712	25,359
Pennsylvania	7,550	4,850	0	1,556	637	14,594
Rhode Island	339	461	0	122	22	944

State	Recreation[2,3]	Energy & Minerals[2,5]	Grazing & Timber[4]	Major Grants & Payments[6]	DOI Payroll[7]	Total[8]
South Carolina	1,963	2,072	0	280	131	4,447
South Dakota	5,143	674	261	365	692	7,136
Tennessee	9,826	1,798	0	505	367	12,496
Texas	4,944	105,292	0	992	776	112,003
Utah	24,149	17,243	4,045	1,940	1,259	48,636
Vermont	67	270	0	152	47	535
Virginia	15,947	7,461	0	550	2,545	26,505
Washington	8,347	3,767	976	579	1,246	14,915
West Virginia	1,107	600	0	1,110	329	3,146
Wisconsin	1,322	1,941	177	528	424	4,392
Wyoming	16,061	71,572	3,522	8,039	704	99,898

[1] Data is not available to show jobs associated with irrigation and M&I water by state.
[2] BIA data are not included in these totals due to lack of State-specific information.
[3] Recreation jobs are based on visitor spending at units managed by BLM, BOR, FWS and NPS.
[4] Timber jobs are based on harvests on BLM and BIA lands. BIA timber jobs are estimated using methods based on BLM's FY 2017 per-ccf contributions for each State. BIA grazing contributions are not available at the State level.
[5] Energy & Minerals jobs 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 jobs 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 jobs are the economic contribution of DOI employees spending their pay.
[8] These totals represent jobs supported by energy, minerals, grazing, timber, salaries and grants and payments in each of the 50 States and the District of Columbia. The jobs 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

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Office of the Secretary

Shawn Buckner

Sarah Cline

Christian Crowley

Ann Miller

Wali Osman

Benjamin Simon

Kristin Skrabis

Adam Stern

Fish and Wildlife Service

Ted Maillet

US Geological Survey

Catherine Cullinane Thomas

Bureau of Indian Affairs

Martin Abeyta

Jack Stevens

Steven Payson

National Park Service

Lynne Koontz

Bruce Peacock

Bureau of Land Management

Rebecca Moore

Josh Sidon

Bureau of Ocean Energy Management

Sarah Peters Coffman

Mark Jensen

Bureau of Reclamation

Bill Taylor

DeShawn Woods

Office of Surface Mining Reclamation and Enforcement

Mark Gehlhar