PAG Report No. 39
December 2018

Endowment Lands Contributions to Idaho's Economy

by
Philip S. Cook, Greg Alward, and Dennis R. Becker*

EXECUTIVE SUMMARY

Idaho owns approximately 2.4 million acres of Endowment Lands, managed as endowed trusts for the benefit of public schools and other beneficiary institutions. The Idaho State Board of Land Commissioners (Land Board) is the trustee for the nine Endowment Lands trusts. Each trust consists of three main parts: the land asset, managed by the Idaho Department of Lands (IDL), and a Permanent Fund and an Earnings Reserve Fund managed by the Endowment Fund Investment Board (EFIB).

Endowment Lands produce revenues for the beneficiaries in a variety of ways. Almost one million acres of Endowment Lands are timberlands, managed for timber that supplies the forest products industry with raw material. Over 1.4 million acres of Endowment Lands are rangelands, managed for grazing forage that supplies the livestock industry. Other Endowment Land uses include farming, residences, mineral and oil and gas exploration, communications sites, and other commercial purposes.

Distributions to endowment beneficiaries are made annually. In FY 2017, distributions totaled $63.7 million, with $36.7 million going to public schools. In inflation-adjusted (2017) dollars, overall distributions grew at an average annual compound interest rate of 4.0% between FY 2007 and FY 2017.

An input-output model was used to measure the contributions of Endowment Lands to Idaho's economy. Three sources of economic effects were measured: effects generated by inputs (timber, forage, minerals, etc.) from Endowment Lands to various industries; spending of distributions by beneficiaries; and expenditures by IDL and EFIB for land and financial asset management, respectively.

In 2017, Endowment Lands contributed in total (direct and support effects) $1.35 billion in output, 7,641 jobs, and $531.3 million in gross state product (GSP) including $315.4 million in wages.

Timberlands, which account for 41% of Endowment Lands, contributed over 6,000 jobs and $440 million in GSP to Idaho's economy through land management expenditures, timber sales and harvesting, and forest products manufacturing.

The spending of distributions from the Endowment Lands trusts by beneficiaries contributed to almost 1,400 jobs statewide, contributing $75 million in GSP.

* Principal Researcher, Senior Researcher, and Director, respectively, Policy Analysis Group.

University of Idaho
College of Natural Resources
Policy Analysis Group
875 Perimeter Drive MS 1134
Moscow, Idaho 83844-1134
208-885-5776
pag@uidaho.edu
uidaho.edu/cnr/pag

Acknowledgments

The authors thank the following individuals for their review of an earlier draft of this report:

Larry Teeter, Ph.D.
Professor and Director
Forest Policy Center
Auburn University
Auburn, Alabama

Diane French
Division Administrator
Lands and Waterways
Idaho Department of Lands
Boise, Idaho

Table of Contents

Tables, Figures, and Sidebars

Tables

Figures

Sidebars

Introduction

When Idaho became a state in 1890, it was granted over 3.6 million acres of land by the federal government to be managed as endowed trusts for the financial benefit of public schools and other institutions.[1] Over time, the state sold and traded parcels of land so that as of 2018 the state owns approximately 2.4 million acres of these Endowment Lands. The Idaho State Board of Land Commissioners (Land Board)—Governor, Secretary of State, Attorney General, Superintendent of Public Instruction, and State Controller—is the trustee for the Endowment Lands trusts. According to the Idaho Constitution, the trusts must be managed "in such manner as will secure the maximum long-term financial return" to the trust beneficiaries (Article 9, Section 8).

There are nine Endowment Lands trusts (**Table 1** and **Figure 1**). Seven of the nine trusts have a single beneficiary institution, and two benefit multiple institutions. Eight of the nine trusts are structured and operate similarly; the Capitol Permanent trust is somewhat different (see **Sidebar 1**). The following discussion about trust structure and administration applies to the other eight trusts.

Each trust consists of three main parts (**Figure 2**): the land asset, managed by the Idaho Department of Lands (IDL), and a Permanent Fund and an Earnings Reserve Fund managed by the Endowment Fund Investment Board (EFIB). Public schools are the largest beneficiary of Idaho's Endowment Lands.

Table 1. Endowment Lands trusts: beneficiaries, land area, Permanent Fund value, and Earnings Reserve Fund value, FY 2017.

Endowment Trust Beneficiary	Land (acres)	Permanent Fund (million $)	Earnings Reserve Fund (million $)
Public Schools	2,076,829	$912	$344
Charitable Institutions	77,241	$108	$38
Idaho State University (4/15)*			
Juvenile Corrections (4/15)			
State Hospital North (4/15)			
Veterans Hospital (1/6)			
School for the Deaf and Blind (1/30)			
School of Science (University of Idaho)	75,497	$91	$41
Normal Schools	59,639	$93	$37
Lewis-Clark State College (1/2)			
Idaho State University, Education Department (1/2)			
University of Idaho	55,094	$81	$34
Agricultural College (University of Idaho)	33,526	$28	$12
State Hospital South	31,376	$84	$40
Penitentiary	28,915	$41	$19
Capitol	7,283	$29	$5
TOTAL	**2,445,400**	**$1,467**	**$570**

*Proportion of distributions for each beneficiary.
Source: IDL (2017).

[1] For a detailed history and description see *Idaho's Endowment Lands: A Matter of Sacred Trust, Second Edition* (O'Laughlin et al. 2011) and *Endowment Lands Asset Management Plan* (Idaho State Board of Land Commissioners 2016).

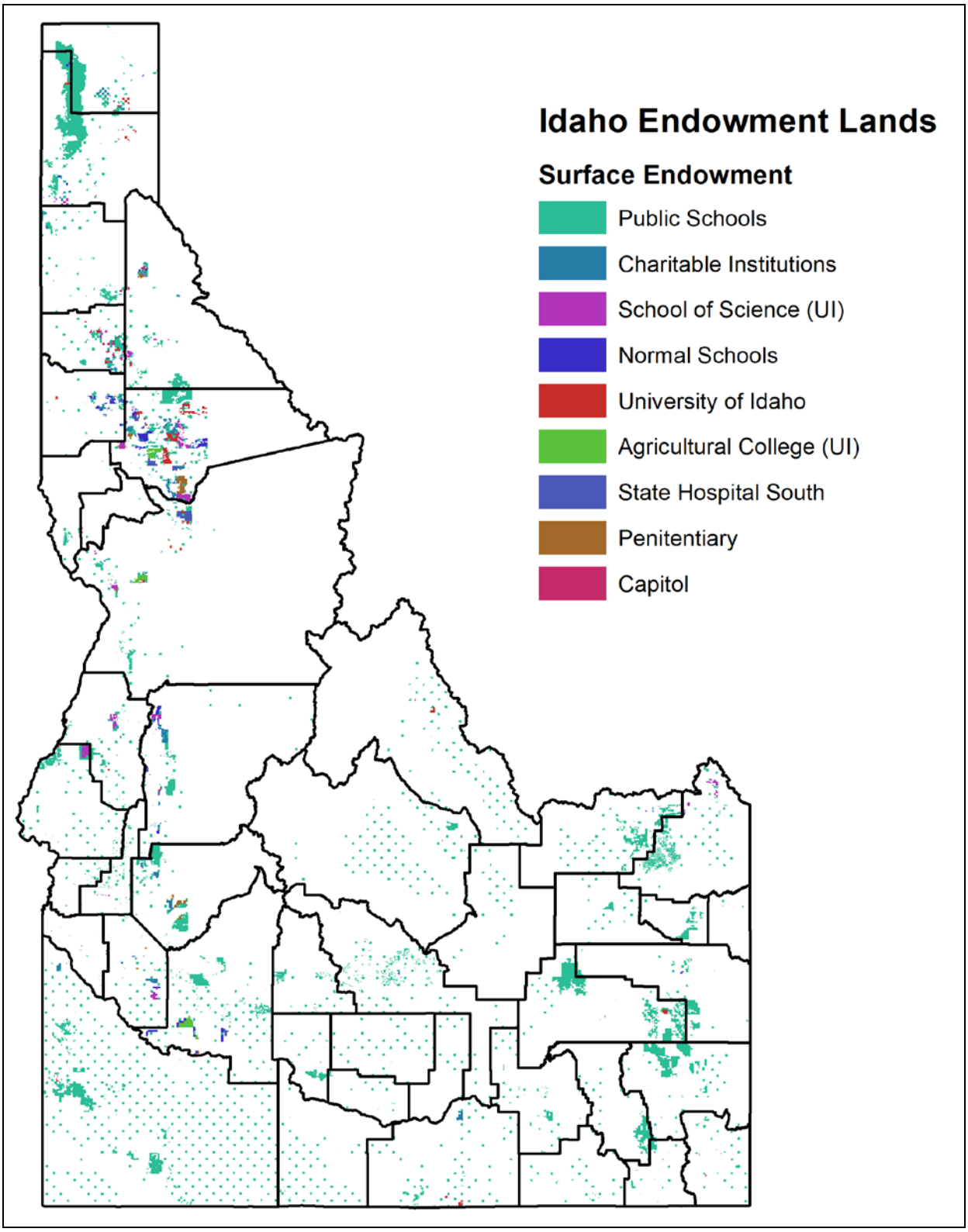


Figure 1. Idaho Endowment Lands by trust beneficiary.

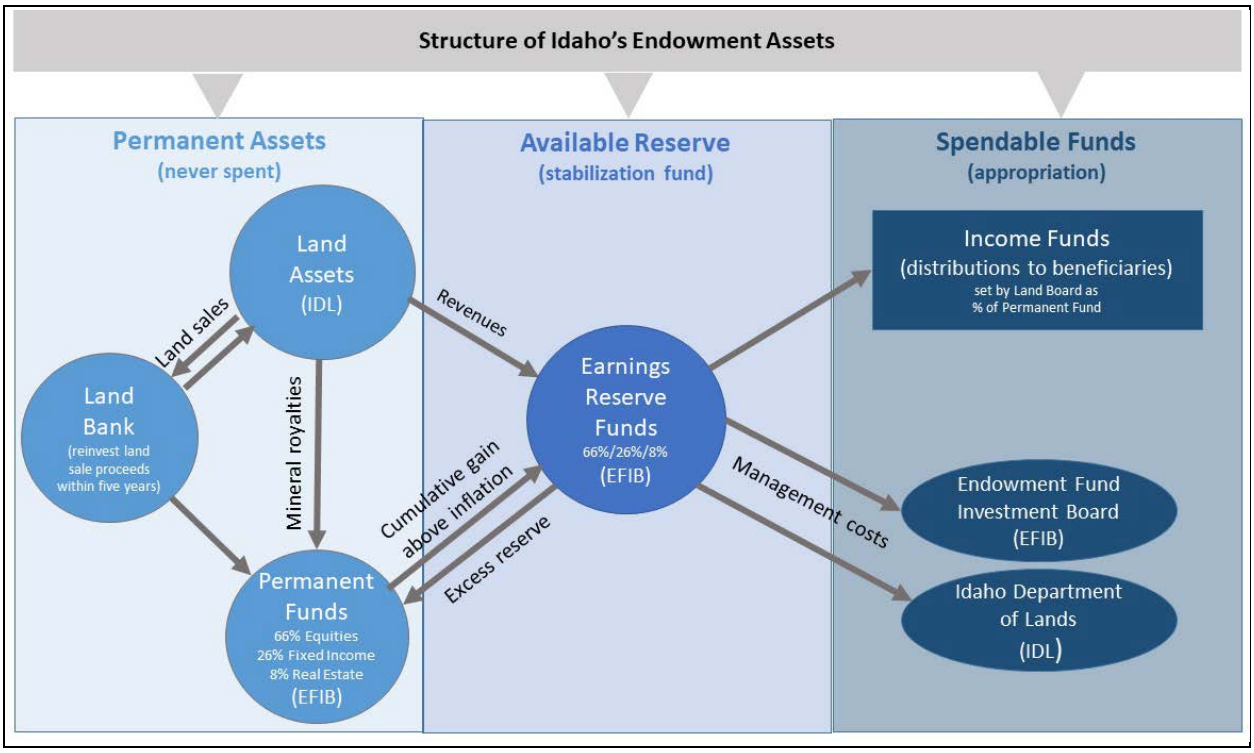


Figure 2. Structure of Idaho's Endowment Lands trusts.
Source: based on IDL (2017).

Sidebar 1. Differences between the Capitol Permanent trust and other Endowment Lands trusts.

The Capitol Permanent trust is structured and administered differently than the other eight Endowment Lands trusts.

- Proceeds from land sales go directly into the Capitol Endowment Permanent Fund rather than into a land bank.
- Revenues from all activities, including those from leases and timber sales, go directly into the Capitol Permanent Endowment Fund rather than an earnings reserve fund.
- An annual transfer from the Capitol Permanent Endowment Fund to the Capitol Maintenance Reserve Fund is used to pay for maintenance and construction of the capitol building and its grounds, and administrative expenses of the funds, while preserving the trust corpus. However, there is no distribution of "excess reserve" back from the reserve fund to the permanent fund.
- The EFIB is sole manager of the Capitol permanent and reserve funds, not subject to policies of the Land Board.
- The Capitol Commission, made up of six appointed members of the public and three state agency directors (Idaho Code 67-1606), plans and sets the annual budget for capitol maintenance and construction. The commission makes recommendations to the EFIB about the amount of the annual transfer between the Capitol Endowment Permanent Fund and the Capitol Maintenance Reserve Fund.
- Upon request from the Capitol Commission, the EFIB distributes funds from the Capitol Maintenance Reserve Fund to the Capitol Commission Operating Fund, which serves as the income fund for the Capitol Commission.

Endowment Lands Assets

The land assets of the Endowment Lands trusts are managed for a variety of activities that produce revenues as financial returns to the beneficiaries.[2] IDL classifies the surface acres of the Endowment Lands into five asset classes (**Table 2** and **Figure 3**): rangeland, timberland, farmland, commercial, and residential. Rangeland and timberland account for most of the Endowment Lands.

Table 2. Acres of Endowment Lands by asset class, FY 2017.

Endowment	Rangeland	Timberland	Farmland	Commercial	Residential	TOTAL
Public School	1,350,358	707,942	17,485	666	378	2,076,829
Charitable Institutions	14,034	63,158	46	3	0	77,241
School of Science	11,530	63,638	192	137	0	75,497
Normal School	15,747	43,654	62	162	14	59,639
University of Idaho	11,901	42,632	548	13	0	55,094
Agricultural College	17,958	15,216	352	0	0	33,526
State Hospital South	3,661	27,679	18	1	18	31,376
Penitentiary	1,294	27,135	477	9	0	28,915
Capitol Permanent	37	7,228	8	10	0	7,283
TOTAL	**1,426,519**	**998,281**	**19,190**	**1,000**	**411**	**2,445,400**

Source: IDL (2017).

Revenues from Endowment Lands

The Endowment Lands produce revenues in a variety of ways, as described below. Most revenues go into each endowment's Earnings Reserve Fund (**Figure 2**). Revenues for Fiscal Year 2017 by asset class and endowment are outlined in **Table 3**.

Land sales

If the Land Board sells Endowment Lands, the proceeds from the sale are held in the Land Bank Fund to be used to purchase other lands for the endowment (**Figure 2**; Idaho Code 58-133). If revenues from land sales are not used to purchase additional lands within five years, the land sales revenue becomes part of the beneficiary's Permanent Fund.

Mineral royalties

In most cases each endowment owns the subsurface rights to the minerals below its lands. In addition to lands where endowments own the surface and subsurface rights, endowments own an additional 0.9 million acres of subsurface mineral rights only (split estates). Phosphate, sand, and gravel are the primary minerals extracted from Endowment Lands.

Royalties are payments made to mineral rights owners by the miner of those minerals based on the value of the minerals extracted. Royalties for minerals extracted from Endowment Lands are deposited in the Permanent Fund of each beneficiary (**Figure 2**).

[2] For details about management of the Endowment Lands asset see *Endowment Lands Asset Management Plan* (Idaho State Board of Land Commissioners 2016) and *Statement of Investment Policy: Idaho Land Grant Endowments* (Idaho State Board of Land Commissioners and Endowment Fund Investment Board 2017).

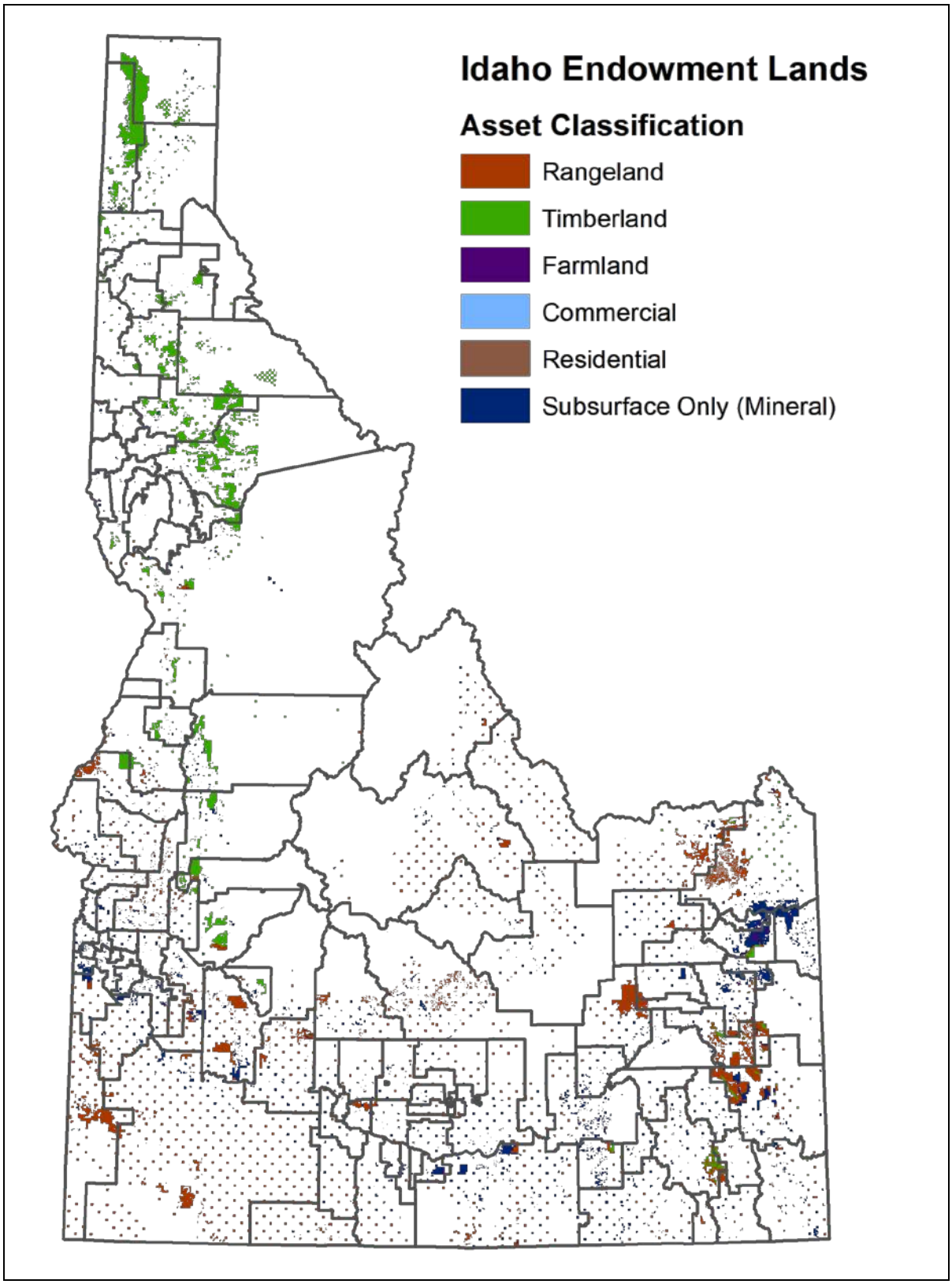


Figure 3. Idaho Endowment Lands by asset class.
Note: Acres by asset class by county are tabulated in **Appendix Table 1**.

Table 3. Revenue, expenses, and net income by asset class and endowment, FY 2017.

	Public School	Agricultural College	Charitable Institutions	Normal School	Penitentiary	School of Science	State Hospital South	University of Idaho	Capitol***	Total
Revenue by Asset Class*										
Timberland	$37,502,643	$409,455	$5,319,120	$5,136,654	$3,708,324	$3,925,553	$6,653,105	$1,894,167	$0	$64,549,022
Farmland	$406,530	$1,200	$2,447	$8,664	$20,600	$11	$263	$18,955	$0	$458,670
Rangeland	$2,535,056	$33,822	$87,341	$47,014	$6,995	$124,219	$106,814	$34,834	$0	$2,976,094
Residential Real Estate	$3,533,248	$2	$8	$282,304	$1	$159	$372,433	$1	$0	$4,188,155
Commercial Real Estate	$343,621	$1	$12	$1,055,978	$1	$6	$439,981	$567,530	$0	$2,407,130
Oil and Gas Leases	$18,328	$114	$4,186	$2,289	$94	$1,087	$434	$1,490	$0	$28,022
Mineral Leases	$56,614	$896	$8,303	$5,751	$450	$1,436	$499	$981	$0	$74,930
Total Revenue	**$44,396,040**	**$445,489**	**$5,421,417**	**$6,538,655**	**$3,736,464**	**$4,052,470**	**$7,573,529**	**$2,517,958**	**$0**	**$74,682,023**
Expenses by Asset Class**										
Timberland	$16,459,051	$294,939	$1,581,423	$1,268,033	$720,388	$1,481,078	$1,173,215	$934,946	$149,747	$24,062,821
Farmland	$134,158	$396	$808	$2,859	$6,798	$3	$87	$6,255	$0	$151,365
Rangeland	$1,767,461	$16,781	$43,336	$23,327	$3,470	$61,633	$52,997	$17,283	$135	$1,986,423
Residential Real Estate	$919,530	$0	$0	$130,933	$0	$9	$187,615	$0	$0	$1,238,088
Commercial Real Estate	$373,313	$0	$589	$558,192	$0	$0	$234,560	$180,851	$0	$1,347,506
Oil and Gas Leases	$59,846	$371	$13,668	$7,476	$307	$3,550	$1,417	$4,867	$2	$91,504
Mineral Leases	$271,995	$4,303	$39,891	$27,629	$2,160	$6,900	$2,397	$4,713	$0	$359,988
Total Expenses	**$19,985,355**	**$316,791**	**$1,679,714**	**$2,018,449**	**$733,123**	**$1,553,175**	**$1,652,289**	**$1,148,914**	**$149,884**	**$29,237,695**
Net Income by Asset Class										
Timberland	$21,043,592	$114,516	$3,737,697	$3,868,622	$2,987,937	$2,444,474	$5,479,889	$959,222	-$149,747	$40,486,200
Farmland	$272,372	$804	$1,640	$5,805	$13,802	$7	$176	$12,700	$0	$307,305
Rangeland	$767,595	$17,041	$44,006	$23,687	$3,524	$62,586	$53,817	$17,551	-$135	$989,671
Residential Real Estate	$2,613,717	$1	$7	$151,371	$1	$150	$184,818	$1	$0	$2,950,067
Commercial Real Estate	-$29,692	$1	-$577	$497,786	$1	$5	$205,422	$386,679	$0	$1,059,625
Oil and Gas Leases	-$41,519	-$257	-$9,482	-$5,186	-$213	-$2,463	-$983	-$3,376	-$2	-$63,482
Mineral Leases	-$215,381	-$3,407	-$31,588	-$21,878	-$1,711	-$5,464	-$1,898	-$3,732	$0	-$285,059
Total Net Income	**$24,410,685**	**$128,698**	**$3,741,703**	**$4,520,207**	**$3,003,341**	**$2,499,296**	**$5,921,240**	**$1,369,044**	**-$149,884**	**$45,444,328**

*Direct program revenue includes only Earnings Reserve funds. ** Includes all expenses related to Permanent Fund proceeds. ***Unlike the other endowments, timber sale revenues accrue to the permanent fund rather than the reserve.

Source: IDL (2017).

Timber sales

Almost one million acres of Endowment Lands are timberlands, managed for timber that supplies the forest products industry with raw material. IDL sells timber from Endowment Lands to private parties who then remove (log) the timber and transport it to lumber mills and other manufacturing facilities. Revenues generated by timber sales on Endowment Lands are deposited into the Earnings Reserve Fund for the appropriate endowment.

Leases

Endowment Lands are leased for a variety of purposes and activities that produce revenues for the endowments (**Table 4**). Revenues generated from leases of Endowment Lands are deposited into the Earnings Reserve Fund for the appropriate endowment.

Table 4. Types of Endowment Lands leases.

Mineral leases	Subsurface mineral rights mined for extraction of minerals.
Oil and gas leases	Exploration and extraction of oil and gas.
Grazing leases	Endowment rangelands for livestock grazing.
Farming leases	Endowment farmlands for the growing of agricultural crops.
Residential leases	Residential Endowment Lands and cottage sites on the shores of Priest and Payette Lakes.*
Commercial leases	Endowment Lands for commercial purposes such as communications sites (e.g. cell towers, mobile radio service, airplane navigation), commercial recreation services (e.g., ski resort, RV park, outfitter & guide), energy resources (wind, hydro, geothermal), as well as commercial buildings and parking lots.**

*The endowments are in the process of divesting cottage sites per direction in the *Endowment Lands Asset Management Plan* (Idaho State Board of Land Commissioners 2016).

**The endowments are in the process of divesting commercial buildings and parking lots per direction in the *Endowment Lands Asset Management Plan* (Idaho State Board of Land Commissioners 2016).

Endowment Financial Assets: Permanent Fund and Earnings Reserve Fund

The Permanent Fund of each endowment is made up of the proceeds of the sale of Endowment Lands (historic sales and under current Land Bank provisions), mineral royalties, and transfers from the Earnings Reserve Fund. The principal (corpus) of the Permanent Fund must remain intact.

As described above, revenues from leases and timber sales are placed in each endowment's Earnings Reserve Fund. Each endowment's Earnings Reserve Fund and its Permanent Fund are comingled and pooled for investment by the EFIB. The funds are invested in financial assets including equities (currently targeted at 66%), fixed income securities (26%), and U.S. real estate funds (8%). The investment strategy of the EFIB is to emphasize total return—the aggregate return from capital appreciation, dividend, and interest income.

The amount of money transferred annually between the Earnings Reserve Fund and the Permanent Fund is determined both by statute and Land Board and EFIB policies. Because the corpus of the Permanent Fund can never be spent, statute (Idaho Code 57-724) outlines a method for determining how much of the change in value of the Permanent Fund is due to a change in asset value versus inflation ("Gain Benchmark"). Cumulative total asset appreciation below inflation must remain in the Permanent Fund, with excess transferred to the Earnings Reserve Fund.

Excess income in the Earnings Reserve Fund may be transferred to the Permanent Fund corpus when reserves are deemed fully sufficient. Land Board policy currently deems funding to be fully

sufficient when the Earnings Reserve Fund exceeds planned distributions for five years to the Public School and State Hospital South endowments, six years for the Normal School endowment, and seven years for the Agricultural College, Penitentiary, School of Science and University endowments. The Land Board designates whether the transfer to the Permanent Fund will or will not increase the Gain Benchmark.

Costs of Managing Endowment Lands and Financial Assets

The costs of managing both the lands and financial assets of the endowments are distributed from each endowment's Earnings Reserve Fund (**Figure 2**). IDL's total expenses for managing the endowments' land assets in FY 2017 were $29.2 million, or 39% of total revenues (**Table 3**). EFIB's expenses for managing the endowments' financial assets were $7.8 million in FY 2017, or about 4% of the $2.0 billion total of the permanent and earnings reserve funds.

Distributions to Endowment Beneficiaries

Distributions to the beneficiaries are made from the Earnings Reserve Fund into each endowment's Income Fund (**Figure 2**). The amount distributed to the beneficiaries annually is determined by the Land Board. Land Board objectives for distribution are:

1. Avoid reductions in total endowment distributions;
2. Maintain adequate earnings reserves to protect distributions from temporary income shortfalls; and
3. Grow distributions and permanent corpus faster than inflation and population growth.[3]

Distributions are determined individually for each endowment. Distributions are calculated as a percent of the three-year rolling average Permanent Fund balance for the most recent three fiscal years. Currently distributions are 5% for all endowments except State Hospital South which is 7%. The Land Board may adjust this amount depending on the amount in the Earnings Reserve Fund, transfers to the Permanent Fund, and other factors.

Distributions to endowment beneficiaries grew from $36.3 million in FY 2007 to $63.7 million in FY 2017. Adjusted for inflation to 2017 (real) dollars, distributions grew from $42.9 million to $63.7 million from FY 2007-FY 2017 (**Figure 4**), an average annual compound interest rate of 4.0%. The spike of $67.8 million (nominal dollars) in FY 2011 was due to a one-time special $22 million distribution to Public Schools. In real (2017) dollars, Public Schools distributions grew at an average of 2.3% annually from $29.1 million in FY 2007 to $36.7 million in FY 2017.

How distributions into the Income Fund are spent is left to the beneficiary, as long as they meet the statutory purposes of the trust and subject to appropriation by the Legislature. Endowment distributions satisfy only a small portion of each beneficiary's annual spending needs. For example, endowment fund distributions in FY 2017 for the University of Idaho, Idaho State University, and Lewis-Clark State College represented 5.7%, 2.4%, and 6.0% of state appropriated funds, respectively, and 2.4%, 1.1%, and 3.3% of all funds for each institution, respectively.[4] The Public Schools FY 2017 distribution represented 1.9% of total state appropriations for that year.

---

[3] *Statement of Investment Policy: Idaho Land Grant Endowments (*Idaho State Board of Land Commissioners and Endowment Fund Investment Board 2017)

[4] *Idaho Legislative Budget Book for Fiscal Year 2018* (Legislative Services Office 2018).

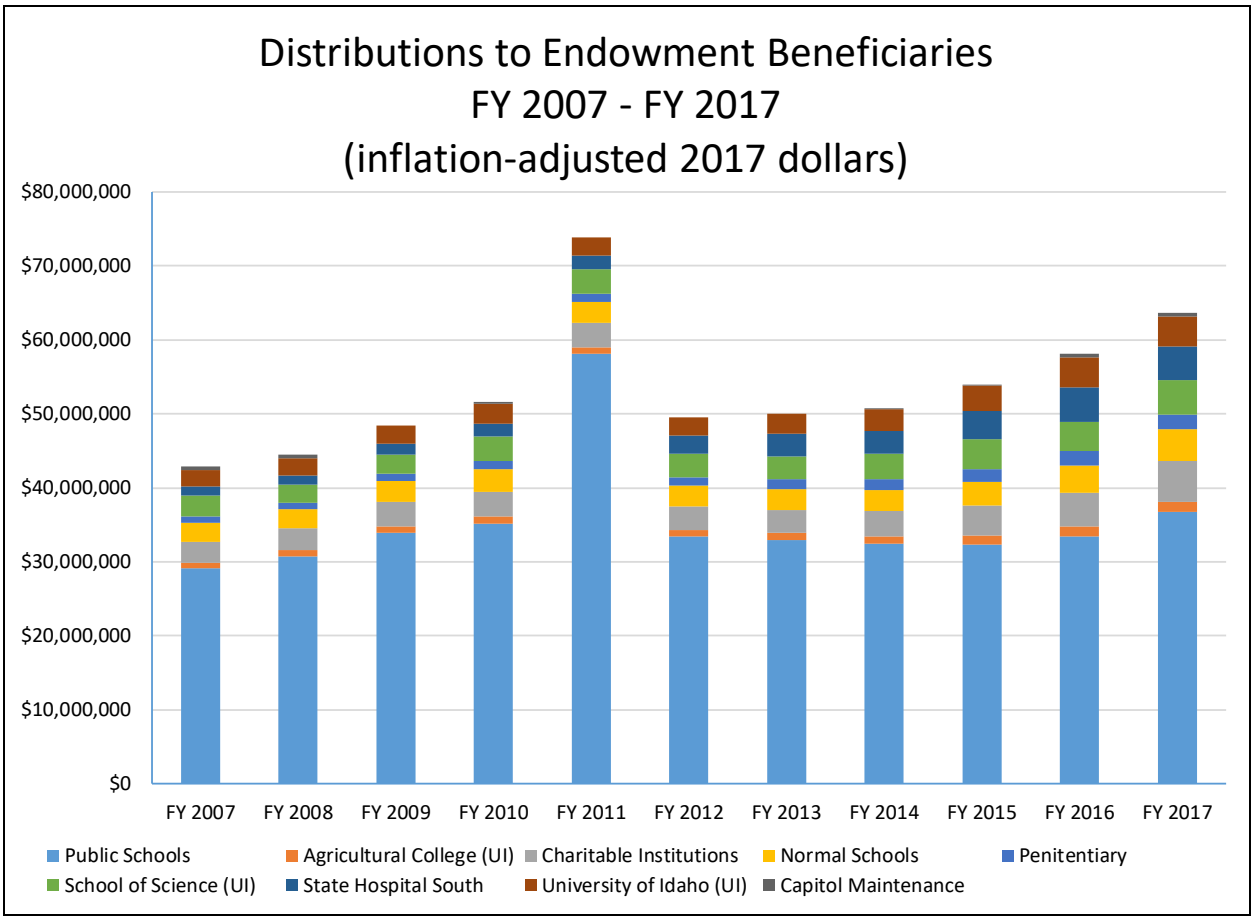


Figure 4. Distributions to endowment beneficiaries, FY 2007- FY 2017 (inflation-adjusted 2017 dollars). Data sources: EFIB (2007–2017) and BLS (2018).

Economic Contributions

Economic contribution studies measure the cumulative effects of an entity's spending as it cycles through the economy of a region. Economic effects are usually expressed in terms of money or jobs. Functional economic regions are usually political subdivisions such a county, group of counties, or a state. Entities can vary from a single private business to a group of businesses that make up an industry, such as growers or manufacturers of a specific type of product, to a government agency, such as IDL. Economic activities include a wide range of actions that involve the buying and selling of goods and services—for example, purchasing inputs to agricultural or manufacturing processes, selling finished products, or spending by consumers. Economic activities related to Idaho's Endowment Lands measured in this study included revenues collected by IDL from timber sales, all leases, and mineral and oil & gas royalties, as well as spending of Income Fund distributions by trust beneficiaries and management expenditures by IDL and EFIB.

The most common tool used to measure economic contributions is an input-output (I-O) model. An I-O model represents the flows of money in an economy among industries, government, and households within a region and imports into and exports out of the region. In an I-O model, the flow of money among entities in the economy is arranged according to a set of input-output accounts where a portion of the output (i.e., sales) of one industry will appear as an input (i.e., purchases) of another industry. The accounts track the flow of money or jobs from one entity to the next and represent the interconnectedness of industries, households, and government in a region. An I-O model expresses how income or expenses in one part of the economy ultimately affects other parts based on purchasing and selling relationships.

The metrics commonly used for economic contribution are: output (dollar value of sales of goods and services), employment (jobs), labor income (wages and proprietors income), and value added (dollars). Value added is equal to gross output minus the costs of intermediate inputs, i.e., those inputs required to produce a final product. The sum of value added for all parts of a region's economy is called gross regional product; when the region is a state it is called Gross State Product (GSP). GSP is the most commonly used measure of how an organization or industry contributes to a state economy as a whole.

Economic contributions also are divided into three components depending on how they occur: direct, indirect, and induced. *Direct* effects are the result of initial spending in the study region by the business or organization under study. *Indirect* effects are the result of business-to-business transactions indirectly caused by the direct effects as businesses increase spending on goods and services from other local businesses. *Induced* effects are the result of increased personal income caused by the direct and indirect effects as businesses increase payroll or hire more employees and households in turn increase spending at local businesses. Induced effects measure the increase in household-to-business activity. Together indirect and induced effects are called *support* effects.

Methods

Figure 5 illustrates how the contributions of Endowment Lands to Idaho's economy were modeled. IDL sells timber, collects royalties, and leases Endowment Lands for various activities that produce revenues for the trusts. Endowment Lands directly provide inputs (timber, forage, minerals, etc.) to various industries (i.e., revenue-generating economic activity) that in turn generate more economic activity (i.e., stemming-from economic activity). The direct and support effects of the economic activities resulting from sale or lease of Endowment Land assets are a part of their economic contribution.

The revenues IDL receives go into the Earnings Reserve Fund or Permanent Fund depending on their source. For economic contribution modeling, it does not matter into which fund they are deposited. The economic contributions of distributions to beneficiaries were also measured. The beneficiaries spend their distributions on economic activities such as salaries, construction, and programming, which in turn have direct and support effects on the state's economy.

IDL and EFIB also incur expenses for management of Endowment Lands and trust funds, respectively. In FY 2017, IDL's expenses were $29.2 million and EFIB's expenses were $7.8 million. Their spending has direct and support effects that are economic contributions to Idaho's economy. In this study, all IDL management expenditures were modeled as part of revenue-generating activities for timberlands (i.e., forest management). EFIB management expenditures were accounted for separately. Although there may be some economic contributions directly associated with investment of the trust funds (e.g., an increase in revenue-generating activity for an Idaho-based company due to a stock purchase by the trust), they were not accounted for in this study.

Data sources

A complete record of receipts of revenue for Endowment Lands was obtained from IDL for FY 2017. Receipt records identified the type of activity (e.g., sale of timber, lease payment) and county where it took place as well as the trust to which respective revenues were credited (e.g., Public Schools). Receipts were grouped into categories based on the type of activity or asset class from which they resulted: timber sales (Timberland), crop leases (Farmland), grazing leases (Rangeland), oil & gas leases and royalties (Oil & Gas), mineral leases and royalties (Minerals), commercial leases (Commercial), and residential leases (Residential). The amount of the distributions to endowment beneficiaries was taken from Land Board and EFIB records, as were management expenses incurred by the Land Board and EFIB for the FY 2017 study period (EFIB 2017).

IMPLAN is commonly used to model economic contributions in the U.S. This study used 2016 statewide IMPLAN for Idaho as a source of data about the structure of the state's economy. As discussed below, updates and modifications were made to the source data to more explicitly highlight the role of Endowment Lands in Idaho's economy.

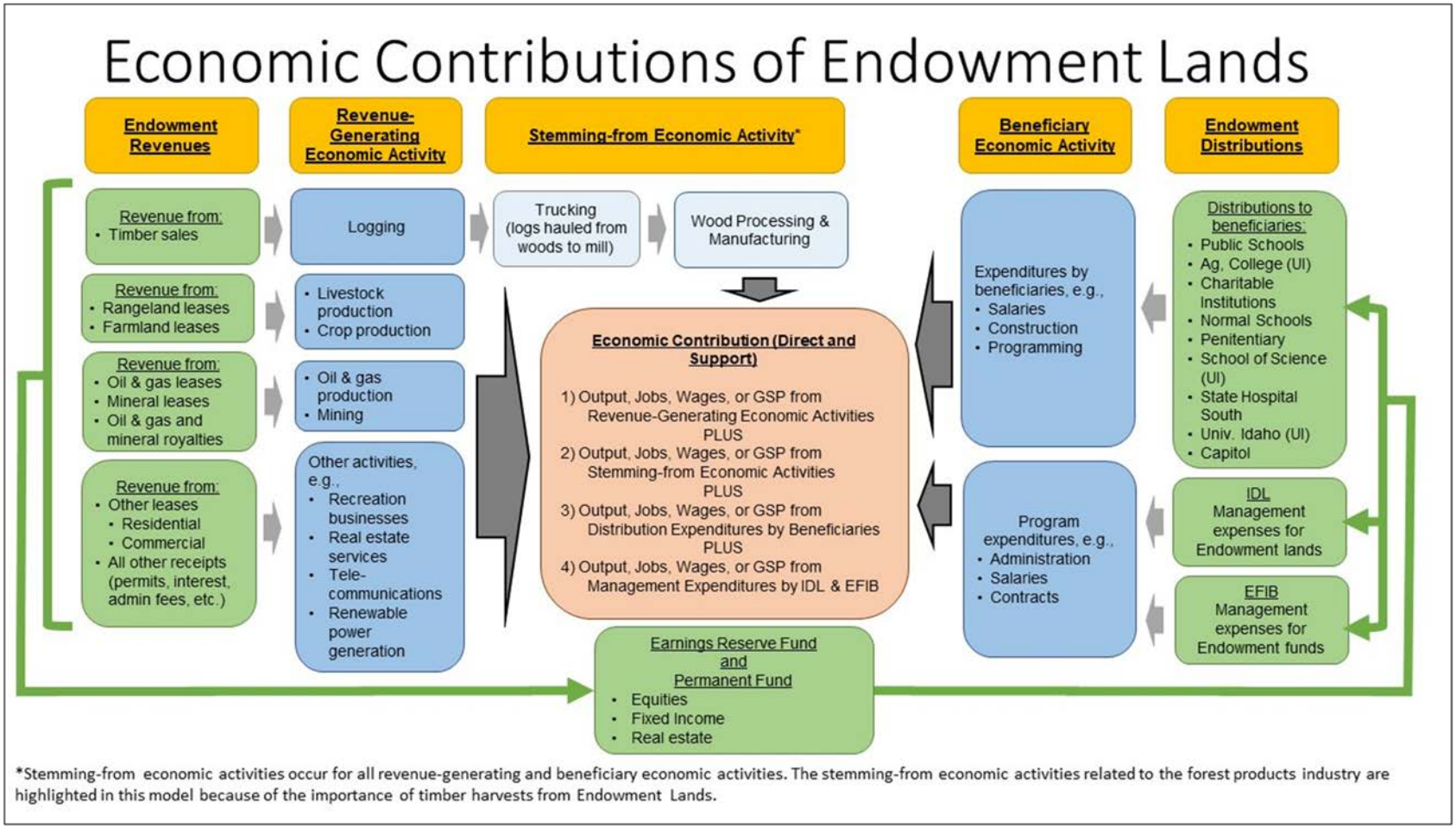


Figure 5. Flows of revenues, distributions, and contributions of Endowment Lands to Idaho's economy.

Modeling

Because the majority of revenues from Endowment Lands come from timber sales, IMPLAN was modified to highlight the effects of those sales on the forest products industry. IMPLAN uses 536 sectors to describe Idaho's economy. Each sector is an aggregation of businesses with similar production inputs or outputs. In IMPLAN, the forest products industry is commonly considered to consist of 29 sectors. This study aggregated the 29 sectors into five broader sectors representing the forest products industry as structured in Idaho (**Table 5**).

Revenues from other Endowment Lands activities, as well as the distributions to beneficiaries, also were assigned to IMPLAN sectors (**Table 6**). All expenses IDL incurred managing Endowment Lands were captured in the aggregated "Forest management" sector. Expenses incurred by EFIB managing the trust funds were accounted for using the IMPLAN sector "Funds, trusts, and other financial vehicles (439)".

This study estimated economic contributions using base methodology (**Sidebar 2**). Base contribution estimates were calculated using intermediate results from the modified 2016 Idaho statewide IMPLAN model and applying them to the ASAM model.

Sidebar 2. Two ways to account for economic contributions: base and gross.

Traditional methods of economic contribution analysis focus solely on gross or export-only contributions. IMPLAN results by themselves are gross contribution estimates. Economic base contribution estimates can be calculated using intermediate results from IMPLAN in the Automated Social Accounting Matrices (ASAM) model developed at the University of Idaho to produce economic base contribution results.[5]

ASAM disaggregates IMPLAN's gross solution to separate each industry's export-oriented activity from its support or import substitution activity. Both activities contribute the local economy: exports bring money into the economy while import substitution keeps money in the economy.

Base methodology credits to an exporting industry the output, jobs, wages, or GSP of its backward-linked businesses, that is those businesses that supply inputs to the exporting industry. For example, forage growers are backward-linked to livestock producers. Gross and base accounting produce the same results for total economic activity in a region, but they differ in how economic activity is credited to a given industry.[6]

[5] See Watson et al. (2015) and Braak et al. (2010-2011).

[6] See Watson and Beleiciks (2009) for more in depth discussion of gross versus base contributions methodology.

Table 5. IMPLAN sectors representing the forest products industry aggregated into five sectors for this study.

Aggregated study sectors	IMPLAN sectors (number)
Forest management	Greenhouse, nursery, and floriculture production (partial: Christmas tree farms) (6)
	Forestry, forest products and timber tract production (15)
	Support activities for forestry (19)*
Timber harvest	Commercial logging (16)
Wood products manufacturing	Electric power generation – Biomass (47)
	Sawmills (134)
	Wood preservation (135)
	Veneer and plywood manufacturing (136)
	Engineered wood member and truss manufacturing (137)
	Reconstituted wood products manufacturing (138)
	Wood windows and door manufacturing (139)
	Cut stock, resawing lumber, and planning (140)
	Other millwork, including flooring (141)
	Wood container and pallet manufacturing (142)
	Manufactured home (mobile home) manufacturing (143)
	Prefabricated wood building manufacturing (144)
	All other miscellaneous wood product manufacturing (145)
Paper products manufacturing	Pulp mills (146)
	Paper mills (147)
	Paperboard mills (148)
	Paperboard container manufacturing (149)
	Paper bag and coated and treated paper manufacturing (150)
	Stationery product manufacturing (151)
	Sanitary paper product manufacturing (152)
	All other converted paper product manufacturing (153)
	Other basic organic chemical manufacturing (165)
Wood cabinet and furniture manufacturing	Wood kitchen cabinet and countertop manufacturing (368)
	Nonupholstered wood household furniture manufacturing (370)
	Wood office furniture manufacturing (373)
	Custom architectural woodwork and millwork (374)

*Only the portion of the IMPLAN "Support activities for agriculture and forestry (19)" sector related to forestry was included.

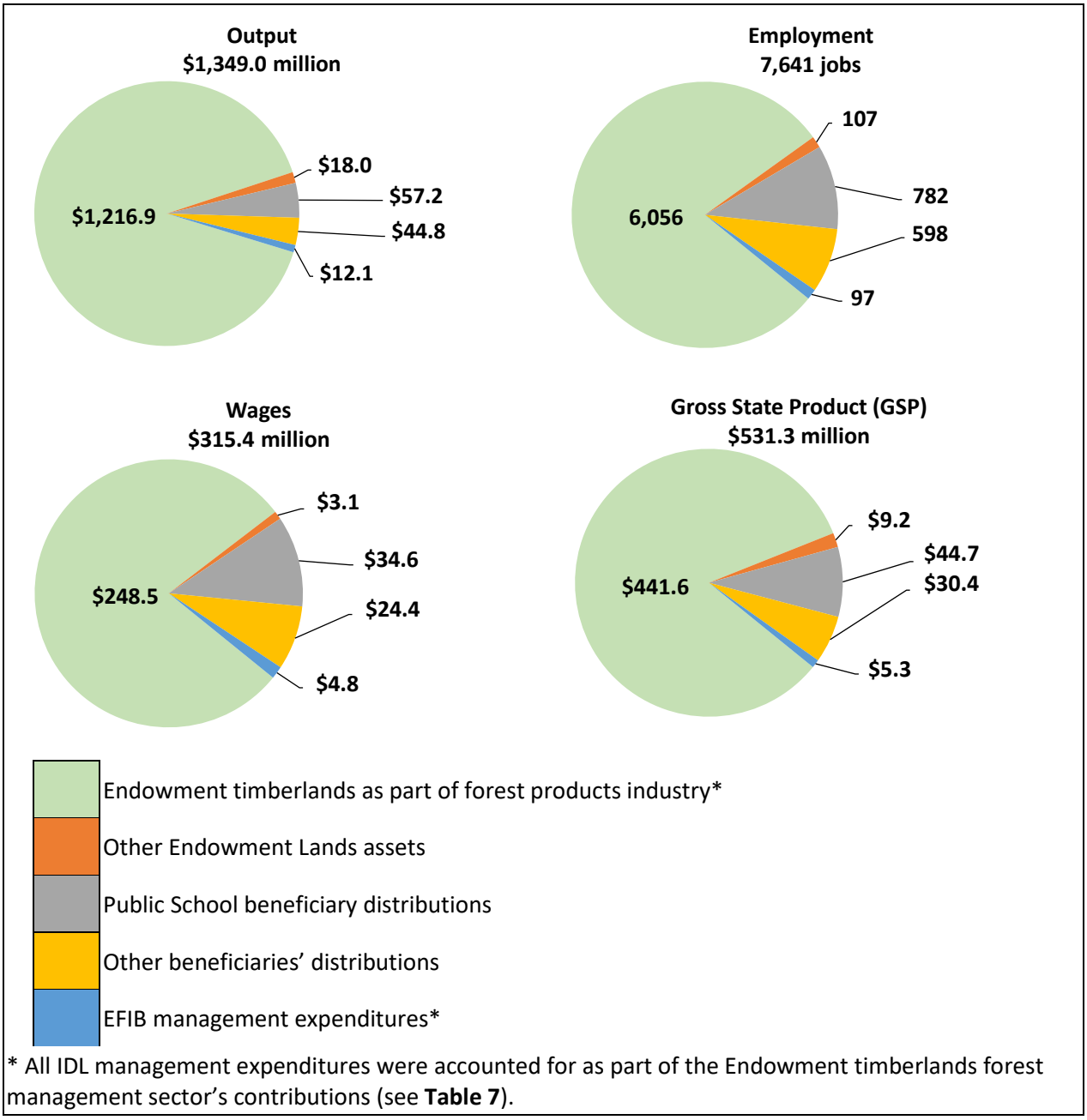
Table 6. IMPLAN sectors representing other Endowment Lands revenues, distributions to beneficiaries, and IDL and EFIB management expenses.

	IMPLAN sector (number)
Revenues from Endowment Lands	
Rangeland	Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming (11)
Farmland	Grain farming (2)
Oil & gas	Extraction of natural gas and crude petroleum (20)
Minerals	Gold ore mining (24) Silver ore mining (25) Stone mining and quarrying (30) Sand and gravel mining (31) Phosphate rock mining (34)
Commercial	Real estate (440)
Residential	Real estate (440)
Distributions to beneficiaries	
Public Schools	State and local government, education*
Agricultural College (UI)	State and local government, education*
Charitable Institutions	Residential mental retardation, mental health, substance abuse and other facilities (484)
Normal Schools	State and local government, education*
Penitentiary	State and local government, non-education*
School of Science (UI)	State and local government, education*
State Hospital South	Hospitals (482)
University of Idaho	State and local government, education*
Capitol	Maintenance and repair construction of nonresidential structures (62)
Management expenses	
IDL	Forestry, forest products and timber tract production (15)
EFIB	Funds, trusts, and other financial vehicles (439)

*Government payrolls are final demand activities, not industry activities, with which employment is associated. However, I-O modeling cannot account for employment unless it is associated with an industry. Consequently, I-O modeling uses “special” industries to account for government payroll.

Results

In FY 2017, Endowment Lands contributed in total (direct and support effects) $1.35 billion in output, 7,641 jobs, and $531.3 million in GSP including $315.4 million in wages (**Figure 6**). Effects from sales of timber from Endowment timberlands accounted for the majority of Endowment Lands contributions: 90% of output, 79% of jobs, 79% of wages, and 83% of GSP.



* All IDL management expenditures were accounted for as part of the Endowment timberlands forest management sector's contributions (see **Table 7**).

Figure 6. Total contributions of Endowment Lands to Idaho's economy, 2017.

Table 7 through **Table 9** provide more details about the contributions of Endowment Lands to Idaho's economy from revenues generated by land management activities and the spending of distributions by beneficiaries. In this study, all management expenditures by IDL associated with Endowment Lands were accounted for as part of the forest management sector (see **Table 8**). EFIB management expenditure contributions in FY 2017 were: $7.8 million direct output, $4.2 million support output, 30 direct jobs, 67 support jobs, $2.5 million direct wages, $2.3 million support wages, $1.8 million direct GSP, and $3.5 million support GSP.

Table 7. Contributions of Endowment Lands assets, FY 2017.

Output	**Direct Output (million $)**	**Support Output (million $)**	**Total Output (million $)**
Timberland	823.7	393.2	1,216.9
Rangeland	3.0	3.1	6.1
Farmland	0.5	0.3	0.7
Oil & gas	<0.1	<0.1	0.1
Minerals	1.3	0.4	1.7
Commercial	2.4	1.0	3.4
Residential	4.2	1.8	6.0
TOTAL	*835.1*	*399.9*	*1235.0*
Employment	**Direct Jobs**	**Support Jobs**	**Total Jobs**
Timberland	3,147	2,909	6,056
Rangeland	14	19	32
Farmland	1	2	3
Oil & gas	<1	<1	1
Minerals	3	3	6
Commercial	15	9	24
Residential	26	15	42
TOTAL	*3,207*	*2,956*	*6,163*
Labor Income	**Direct Wage Income (million $)**	**Support Wage Income (million $)**	**Total Wage Income (million $)**
Timberland	149.8	98.7	248.5
Rangeland	0.6	0.8	1.4
Farmland	<0.1	0.1	0.1
Oil & gas	<0.1	<0.1	<0.1
Minerals	0.1	0.1	0.2
Commercial	0.2	0.3	0.5
Residential	0.3	0.5	0.8
TOTAL	*151.1*	*100.6*	*251.6*
GSP	**Direct GSP (million $)**	**Support GSP (million $)**	**Total GSP (million $)**
Timberland	244.2	197.4	441.6
Rangeland	0.7	1.2	1.9
Farmland	0.1	0.1	0.2
Oil & gas	<(0.1)	<0.1	<0.1
Minerals	0.9	0.2	1.1
Commercial	1.6	0.5	2.2
Residential	2.8	0.9	3.8
TOTAL	*250.4*	*200.4*	*450.8*

Table 8. Contributions of Endowment Timberlands as part of the forest products industry, FY 2017.

Output	**Direct Output (million $)**	**Support Output (million $)**	**Total (million $)**
Forest management	68.1	25.2	93.3
Timber harvest	46.6	8.8	55.4
Wood product manufacturing	367.1	181.5	548.6
Paper product manufacturing	309.2	158.9	468.0
Wood cabinet and furniture manufacturing	32.7	18.9	51.6
TOTAL	*823.7*	*393.2*	*1,216.9*
Employment	**Direct Jobs**	**Support Jobs**	**Total Jobs**
Forest management	403	198	601
Timber harvest	535	71	605
Wood product manufacturing	1,478	1,373	2,851
Paper product manufacturing	441	1,116	1,557
Wood cabinet and furniture manufacturing	291	151	442
TOTAL	*3,147*	*2,909*	*6,056*
Labor income	**Direct Wage Income (million $)**	**Support Wage Income (million $)**	**Total Wage Income (million $)**
Forest management	24.4	5.9	30.4
Timber harvest	16.9	2.2	19.1
Wood product manufacturing	65.4	46.4	111.8
Paper product manufacturing	35.6	39.4	75.0
Wood cabinet and furniture manufacturing	7.4	4.9	12.2
TOTAL	*149.8*	*98.7*	*248.5*
GSP	**Direct GSP (million $)**	**Support GSP (million $)**	**Total GSP (million $)**
Forest management	42.9	12.8	55.7
Timber harvest	27.5	4.6	32.1
Wood product manufacturing	115.8	92.7	208.5
Paper product manufacturing	48.8	77.6	126.4
Wood cabinet and furniture manufacturing	9.3	9.6	18.9
TOTAL	*244.2*	*197.4*	*441.6*

Table 9. Contributions of distributions to Endowment beneficiaries, FY 2017.

Output	Direct Output (million $)	Support Output (million $)	Total (million $)
Public Schools	34.4	22.7	57.2
Agricultural College (UI)	1.3	0.8	2.1
Charitable Institutions	5.5	5.2	10.8
Normal Schools	4.0	2.6	6.6
Penitentiary	1.6	1.1	2.7
School Of Science (UI)	4.4	2.9	7.3
State Hospital South	4.6	3.7	8.2
University of Idaho	3.8	2.5	6.3
Capitol	0.5	0.3	0.8
TOTAL	*60.1*	*41.9*	*102.0*
Employment	**Direct Jobs**	**Support Jobs**	**Total Jobs**
Public Schools	593	189	782
Agricultural College (UI)	22	7	29
Charitable Institutions	153	42	196
Normal Schools	69	22	91
Penitentiary	20	9	29
School Of Science (UI)	76	24	100
State Hospital South	31	30	62
University of Idaho	65	21	86
Capitol	4	3	6
TOTAL	*1,033*	*347*	*1,380*
Labor Income	**Direct Wage Income (million $)**	**Support Wage Income (million $)**	**Total Wage Income (million $)**
Public Schools	27.7	6.9	34.6
Agricultural College (UI)	1.0	0.3	1.3
Charitable Institutions	4.3	1.5	5.8
Normal Schools	3.2	0.8	4.0
Penitentiary	1.1	0.3	1.4
School Of Science (UI)	3.6	0.9	4.4
State Hospital South	2.4	1.1	3.5
University of Idaho	3.0	0.8	3.8
Capitol	0.1	0.1	0.2
TOTAL	*46.4*	*12.6*	*59.0*

continued

Table 9. *continued.*

GSP	Direct GSP (million $)	Support GSP (million $)	Total GSP (million $)
Public Schools	32.8	11.9	44.7
Agricultural College (UI)	1.2	0.4	1.6
Charitable Institutions	3.5	2.8	6.3
Normal Schools	3.8	1.4	5.2
Penitentiary	1.3	0.6	1.9
School Of Science (UI)	4.2	1.5	5.7
State Hospital South	2.5	1.9	4.4
University of Idaho	3.6	1.3	4.9
Capitol	0.2	0.2	0.4
TOTAL	*53.1*	*22.0*	*75.1*

Discussion

Idaho's 2.4 million acres of Endowment Lands are an important contributor to Idaho's economy. Endowment Lands alone with their $531.5 million GSP contribution accounted for 0.8% of Idaho's total GSP of $62.6 billion in FY 2017. The 7,641 jobs supported by Endowment Lands represented 0.8% of Idaho's total 1.0 million jobs.

Timberlands, which account for 41% of Endowment Lands acres, are an important source of wood for Idaho's forest products industry. In 2017, approximately 220 million board feet of timber were harvested from Endowment Lands, or about 20% of all Idaho's timber harvest of 1.11 billion board feet that year (Pokharel et al. 2018). In 2017, through land management expenditures, timber sales and harvesting, and forest products manufacturing, Endowment timberlands contributed over 6,000 jobs and $440 million in GSP to Idaho's economy. These contributions represent 21% and 22%, respectively, of the total forest products industry's contributions of 29,100 jobs and $2.0 billion in GSP to the state's economy (Alward and Becker 2018). Endowment timberlands accounted for 79% and 83% of total Endowment Lands jobs and GSP, respectively.

The spending of distributions from the Endowment Lands trusts by beneficiaries also is an important contributor to Idaho's economy. Almost 1,400 jobs statewide resulted from the spending of trust distributions in FY 2017, contributing $75 million in GSP. Almost 60% of those contributions occurred through spending by public schools.

This study found significantly greater contributions of Idaho's Endowment Lands than a similar study undertaken in 2010. Although there are several methodological differences between the two studies (**Sidebar 3**), this study found greater contributions primarily because: (1) the 2010 study did not measure the effects of resources provided by Endowment Lands (e.g., timber) that account for most of their contributions, and (2) the 2010 study used net income into the endowment funds as the measure of beneficiary spending, whereas this study used actual distributions to beneficiaries.

Sidebar 3. Differences between the 2010 study of Endowment Lands economic contributions and this study.

The most recent effort to estimate the economic contributions of Idaho's Endowment Lands prior to this study was undertaken in 2010 (Crab 2011). Several methodological differences exist between the two studies that affected results.

- The 2010 study relied entirely on IMPLAN as a modeling tool and did not adjust values within IMPLAN to be more specific to Idaho. The current analysis updated factors within IMPLAN to reflect Idaho-specific information, such as
    - adding a new sector by splitting "Support services for forestry" from IMPLAN sector "Support services for agriculture and forestry (19)",
    - adding a new sector for IDL land management activities,
    - adding new sectors for beneficiaries, and
    - adding state government sectors to account for the revenues and distributions related to endowment funds.
- The 2010 study used a three-year average of expenditures by IDL. The current study used a single year (FY 2017).
- The current study accounted for economic activity associated with resources (inputs) produced by Endowment Lands (e.g., timber, forage, minerals) and the production processes (outputs) in which they were used. The 2010 study did not.
- The 2010 study used net income to the Earnings Reserve Funds as the measure of "potential" economic activity by beneficiaries. The current study used actual distributions to beneficiaries as its measure of economic activity.
- The 2010 study used a general estimate (17%) as the amount of expenditures that occurred out of state. The current study used IMPLAN's RPCs (Regional Purchase Coefficients), which vary for each commodity purchase in the beneficiaries' expenditure profiles.
- The 2010 study estimated economic activity associated with recreational activity on endowment lands. The current study did not because the specificity and accuracy of available data is questionable.
- The current study is similar to the 2010 study in that neither attempted to measure economic benefits of Endowment Lands. Economic benefits measure net increases in social welfare and can include both market and nonmarket values (Watson et al. 2007).

References Cited

Alward, G., and D.R. Becker. 2018. Economic Contributions of Idaho's Forest Products Industry 2017. Station Bulletin 107, Idaho Forest, Wildlife and Range Experiment Station, Moscow. https://www.uidaho.edu/-/media/UIdaho-Responsive/Files/cnr/PAG/Research/Publication/id-fpi-2016-contributions.pdf.

BLS (U.S. Bureau of Labor Statistics). 2018. Consumer Price Index (CPI) database. https://www.bls.gov/data/.

Braak, W., P. Watson, and A. Rodriguez. 2010-2011. Automated Social Account Matrix release 3.06. University of Idaho, Moscow. http://www.webpages.uidaho.edu/commecondev/asam.html.

Crab, P.R. 2011. The Economic Activity of Idaho's Endowment Trust Lands. https://www.idl.idaho.gov/land-board/lb/documents-long-term/economic-activity-endowment-trust-lands-2010.pdf.

EFIB (Endowment Fund Investment Board). 2007-2017. State of Idaho Endowment Funds Financial Statements for Fiscal Year. https://efib.idaho.gov/reports/.

Idaho State Board of Land Commissioners. 2016. Endowment Lands Asset Management Plan. https://www.idl.idaho.gov/real-estate/reinvestment/051716-asset-management-plan-final.pdf.

_____ and Endowment Fund Investment Board. 2017. Statement of Investment Policy: Idaho Land Grant Endowments. https://www.idl.idaho.gov/real-estate/reinvestment/071718-statement-of-investment-policy.pdf.

IDL (Idaho Department of Lands). 2017. 2017 Annual Report. https://www.idl.idaho.gov/land-board/about-idl/annual-reports/ar-2017-final.pdf.

_____. 2018. IDL land records GIS data downloads, 9 February 2018. https://www.idl.idaho.gov/maps-land-records/data-download.html.

Legislative Services Office. 2018. Idaho Legislative Budget Book for Fiscal Year 2018. https://legislature.idaho.gov/wp-content/uploads/budget/publications/Legislative-Budget-Book/2017/Legislative%20Budget%20Book.pdf.

O'Laughlin, J., S.F. Hamilton, and P.S. Cook. 2011. Idaho's Endowment Lands: A Matter of Sacred Trust, Second Edition. https://www.uidaho.edu/-/media/UIdaho-Responsive/Files/cnr/PAG/Research/Endowment-Lands-Report.pdf.

Pokharel, R., P.S. Cook, G. Alward, D.R. Becker, and G. Latta. 2018. Idaho's Forest Products Industry 2017. Station Bulletin 106, Idaho Forest, Wildlife and Range Experiment Station, Moscow. https://www.uidaho.edu/-/media/UIdaho-Responsive/Files/cnr/PAG/fpi-reports/id-fpi-2017-outlook.pdf.

Watson, P., and N. Beleiciks. 2009. Small community level social accounting matrices and their application to determining marine resource dependency. *Marine Resource Economics* 24:253-270.

_____, J. Wilson, D. Thilmany, and S. Winter. 2007. Determining economic contributions and impacts: What is the difference and why do we care? *Journal of Regional Analysis and Policy* 37(2):1-15.

_____, S. Cooke, D. Kay, and G. Alward. 2015. A method for improving economic contribution studies for regional analysis. *Journal of Regional Analysis and Policy* 45(1):1-15.

Appendix

Appendix Table 1. Idaho Endowment Lands by county and asset class (acres).

County	Rangeland	Timberland	Farmland	Residential	Commercial	Total
Ada	30,470	0	10	1	527	31,009
Adams	13,574	27,420	0	0	0	40,994
Bannock	27,560	16,711	23	0	0	44,294
Bear Lake	13,540	1,184	34	0	84	14,841
Benewah	0	53,875	0	0	0	53,875
Bingham	147,726	5,826	450	0	0	154,002
Blaine	58,701	180	114	0	0	58,995
Boise	20,193	64,441	0	1	0	84,635
Bonner	43	165,778	9	326	57	166,212
Bonneville	40,062	3,738	1,295	0	7	45,103
Boundary	0	103,714	6	0	0	103,720
Butte	13,255	0	0	0	0	13,255
Camas	21,785	0	0	0	0	21,785
Canyon	44	0	397	0	284	725
Caribou	93,905	11,464	24	0	0	105,394
Cassia	48,503	0	1,569	0	0	50,072
Clark	75,316	3,793	6	0	0	79,115
Clearwater	0	233,748	2	2	0	233,752
Custer	52,243	324	44	0	7	52,617
Elmore	105,714	6,817	85	17	0	112,634
Franklin	12,466	789	51	0	0	13,306
Fremont	70,664	14,036	812	0	0	85,512
Gem	19,215	0	6	0	0	19,221
Gooding	16,261	0	831	0	0	17,092
Idaho	13,420	63,366	29	0	6	76,821
Jefferson	15,469	0	23	0	8	15,501
Jerome	7,566	0	215	0	0	7,781
Kootenai	0	32,813	2	4	3	32,822
Latah	11	30,476	506	0	0	30,992
Lemhi	37,226	0	0	0	0	37,226
Lewis	681	1,406	6	0	0	2,093
Lincoln	21,626	0	13	0	0	21,639
Madison	5,388	7,617	8,905	0	0	21,910
Minidoka	7,665	0	20	0	4	7,689
Nez Perce	698	6,933	756	0	0	8,387
Oneida	12,417	319	242	0	0	12,978
Owyhee	320,765	0	2	4	0	320,771
Payette	7,751	0	2	0	0	7,752
Power	20,465	3,801	1,702	0	0	25,968
Shoshone	0	55,159	0	0	0	55,159
Teton	285	0	875	0	0	1,160
Twin Falls	29,428	0	16	0	0	29,444
Valley	1,177	63,598	0	51	10	64,836
Washington	43,248	18,957	110	0	0	62,315
Total	**1,426,525**	**998,286**	**19,191**	**406**	**998**	**2,445,405**

Data source: IDL (2018).

Note: Acre totals are slightly different than those published in IDL (2017).