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Idaho Department of Lands Grazing Market Rent Study

Resource Dimensions

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**This investigation, analysis, and report are subject to important conditions and assumptions that affect the findings and conclusions. As applicable, data gaps or lack of supporting documentation are identified throughout the report. The reader should review all limiting conditions and assumptions in this report before utilizing or relying upon the findings and conclusions.*

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List of Acronyms

ARMS	Agricultural Resource Management Survey
AUE	Animal unit equivalency
AUM	Animal unit months
BCPI	Beef Cattle Price Index
BLM	Bureau of Land Management
CATI	Computer-assisted telephone interviewing (protocol)
CPI-U	Consumer Price Index – All Urban Consumers
DNR	Department of Natural Resources, Washington
DNRC	Department of Natural Resources and Conservation, Montana
DSL	Department of State Lands, Oregon
EPA	Environmental Protection Agency, United States
FVI	Forage Value Index
GIS	Geographic information system
IDL	Idaho Department of Lands
IDFG	Idaho Department of Fish and Game
IDFVI	Idaho Forage Value Index
IRRC	Idaho Rangeland Resource Commission
NRCS	Natural Resources Conservation District
NREL	National Renewable Energy Laboratory
OSLI	Office of State Lands and Investments, Wyoming
PPI	Prices Paid Index
PRIA	Public Range Improvement Act
RPA	Renewable Resources Planning Act
ROE	Rights-of-Entry
ROW	Rights-of-Way
SITLA	School and Institutional Trust Lands Administration, Utah
SSRU	Social Science Research Unit, University of Idaho
USDA	United States Department of Agriculture
USDA-NASS	USDA – National Agricultural Statistics Service
USFS	United States Forest Service
USGS	United States Geological Survey

EXECUTIVE SUMMARY

PURPOSE:

To evaluate trends in the private grazing land lease markets in five regions of Idaho, and develop key data resources and analyses to aid the Idaho Department of Lands in making decisions on how to best manage the state's Endowment Trust Lands for its beneficiaries.

To address these questions, the Idaho Department of Lands (IDL) contracted the Resource Dimensions team to conduct the grazing market rent study, and a corresponding review of state grazing lease programs in neighboring states. These analyses provide IDL and the Idaho Land Board important information needed to assist in evaluating current leasing trends and conditions, and to support decision making on how to best manage these trust lands for their beneficiaries.

The foregoing grazing market rent study addresses the questions presented by IDL, and presents key information to assist in its evaluation of appropriate leasing methodology and lease rates for state endowment grazing property within five geographical study regions of Idaho, generally described as:

- Eastern
- Northern
- Payette Lakes
- South Central
- Southwest

The project employed a quantitative, statistical approach that explicitly recognizes the qualitative nature of the data collection involved. In addition, the use of geographic information systems (GIS) aided in the development of regional base maps that identify, by region, IDL grazing leases, the general location of survey respondents, market and assessed values for Idaho rangelands and general forage ecoregions. Statistical analysis is used to investigate how lease rates vary across varying arrangements and conditions.

While livestock production is a $975 million industry in Idaho, other amenities and ecosystem services are also provided by the state's rangelands; thus, further revenue opportunities may exist for IDL (e.g., wind energy, minerals leases, recreation permits, hunting/fishing passes, etc.). Possible sources of additional revenue as well as obstacles for implementation are explored through a review of alternative models, enterprises and layered land management strategies that may provide multiple benefits and economic opportunities.

The Study Questions

IDL identified a number of questions for the study's scope of work. The chief interest being how do IDL's grazing lease rate compare to state grazing lease rates in neighboring states, and to the private grazing lease market in Idaho. To understand the current private market in Idaho, a telephone survey of Idaho lessors and lessees was conducted to ask about specifications and lease terms found in private grazing lease agreements authorizing the grazing of domestic livestock on non-irrigated rangelands in Idaho. The survey included questions to identify the respondent as a lessee or lessor; the location of the lease(s); number of acres leased; lease length; animal unit-months (AUM), or the stocking rates of the lease; cost sharing for improvements and maintenance; any services provided by the lessor; the status of access; lease terms relative to herd stock; status of water rights; lease terms relative to non-grazing uses; subleasing terms; and whether public recreation was allowed.

IDL's grazing program and state lease rate was compared to state grazing program and state lease rates from Montana, Oregon, Utah, Washington and Wyoming to assess historic rate differences, as well as differences in program management. Procedures used to set state land grazing fees, lease terms and rates in the adjoining five states were also investigated.

IDL desired to understand the current state, and foreseeable trends, in livestock production and demand for forage on state trust lands. Of further interest is the exploration of other business models or alternative leasing arrangements that may be complementary to or coexist alongside grazing uses to enhance opportunities for maximizing net revenues to the trust.

These issues were in part investigated through an assessment of the potential for additional revenue generation to the current land lease authorizing forage removal by livestock model. Finally, the issue of creating layered lease arrangements through the expansion or evolution of activities compatible with grazing operations was addressed through identification of existing models of layered land management. This includes information about arrangements and methods used by other states to set rates for the alternative leasing opportunities presented.

The Analysis

Data about the terms, conditions and rates paid for domestic livestock grazing was gathered from 239 individuals across five study regions. These individuals provided information for 315 Idaho grazing leases. Lease types included payment on a dollar value per animal basis, a lump sum, a dollar value per acre basis, trade of commodity, and a dollar value per pound of gain basis. Summaries of lease conditions were prepared and a multivariate analysis was conducted to evaluate how lease prices varied with the terms and conditions of the lease.

Data on key state grazing program features were collected and comparatively analyzed to identify differences in rangeland management and fee collection between Idaho and each of the five neighboring states. State grazing fee formulas are discussed and lease terms and conditions between the states are delineated. State grazing program management, and the services provided by each state to lessees are described. Trends in state grazing fees rates from 2001 to 2011 are presented.

The Resource Dimensions team reviewed trends in livestock production and market prices in Idaho from 2001 to 2011, as well as private land lease rate data for the western states. Trends in market prices were assessed for beef, lamb and wool. Production trends were determined through analyzing the inventories of beef cattle, sheep and lambs.

To address the question of current per acre market and tax assessed values for dryland/native rangelands in Idaho, Resource Dimensions collected and analyzed data for 111 sales that closed across the five study regions between January 1, 2010 and December 31, 2011. Similarly, tax assessment data for lands consisting strictly of rangeland or with multiple land classes having significant rangeland acreage were identified, collected and analyzed by region.

The assessment of alternative models and lease structures was achieved through the collection of available information and personal communications with trust land personnel in neighboring states. This investigations and the sharing of institutional knowledge were invaluable as little is currently published with respect to layering of compatible uses and/or the business models that may encourage maximizing beneficiary revenues through diversification of revenue streams, assets and asset management policies.

Summary of Findings

Private land grazing leases were not found to be negotiated as a sophisticated business arrangement. The leases were nearly evenly split between oral and written and most of the leasing agreements were negotiated annually. Lessees reported lease conditions for 67% of the parcels studied and the majority of leases were negotiated between non-related individuals. The majority (84%) of the study leases were for cow-calf operations. Subleasing was not common with only 2.5% of the leases including subleasing provisions. Various arrangements were made for the provision of services on the lease. The lessee usually provided salt, supplements and doctored livestock (> 80%).

A hedonic model that used regression analysis was employed to determine how lease rates vary as lease terms and conditions vary. The change in $/AUM lease rate was considered in the context of the variables reported by survey participants. Six variables were found to be statistically significant.

First, the lessor-provided service of controlling livestock movement, including pasture moves, and doctoring cattle (or managing, moving and tending) increased the lease rate by $2.21/AUM, or an increase of 14%. Second and third, the regional lease rates in the Eastern and Payette Lakes regions were found to have high lease rates than the other three regions. The Payette Lakes region had lease rates that were $1.86/AUM more than the Northern, South Central and Southwest regions. The Eastern region lease rate was $1.43 higher than the Northern, South Central and Southwest regions. Fourth, the percentage of a lease that is irrigated was significant. A 10% percent increase in the amount of irrigated land would increase the lease rate by $0.22/AUM. Thus, a lease that was 100% on irrigated pasture would have an average lease rate that was $2.16/AUM more than a lease with native rangeland. Fifth and sixth, the $/AUM lease price was consistently higher when yearlings were included on the lease ($3.53/AUM) and lower when sheep were on the lease ($2.59/AUM). The likely reason for this finding is that little attention is actually paid by forage lessees and lessors to the size and animal unit equivalency level of the animals.

Regarding the state comparative analysis, Idaho had the lowest average annual percent increase in grazing fee rate of the six states in the comparative analysis for the study period at 0.4%. Oregon, Washington and Wyoming did not refine their state grazing fee formulas over the study period. Oregon's state grazing fee outpaced Idaho's by 11 times over the study period, whereas Washington's state grazing lease fee outpaced Idaho's by 6 times, and Wyoming's state grazing fee outpaced Idaho's by 5.7 times.

Beef prices are at near record levels with the national beef cow inventory at its lowest level since the 1950s. The average price of a 500-pound steer calf in Idaho during December 2011 was $160/cwt; a 52% increase in the price received from 2009. Sheep producers have also recently seen a major improvement in product prices. Lamb prices increased by 62% during 2010, from $96/cwt to $157/cwt. Wool prices increased 43% over the same period.

The national beef cow inventory has declined by about 8% since 2001 with a similar percentage decline in Idaho and in the states that neighbor Idaho. Beef cow numbers over the 2001 to 2007 period declined at a similar rate within most regions of Idaho. A 2007 regional inventory of beef cow numbers across Idaho USDA-National Agricultural Statistics Service (NASS) districts found that 41% of beef cows were in the east district, followed by the southwest (28%), south central (22%) and north (9%).

Sheep numbers in Idaho and nationwide have declined significantly since the 1940s. The January 2011 Idaho inventory of the category called "All Sheep", as reported by NASS, was 235,000 head which is a 15% decline from the 275,000 head reported in 2001. Inventory numbers from 2001 – 2007 were similarly distributed, decreasing slightly in all southern NASS districts. A 2007 regional inventory of sheep across Idaho NASS districts found that 44%

of sheep were in the south central district, followed by the east (31%), southwest (21%) and north (4%).

The 2010-2011 average assessed value for pastureland in the NASS Agricultural Land Values and Cash Rent Survey in Idaho was reported to be $1,235. This value is much higher than the average 2010-2011 market and assessed values reported regionally from the results of this study and summarized in the table below. NASS-reported values are apparently inflated because of relatively high amounts of irrigated pastureland in Idaho.

Table ES 1 Summary of Market and Assessed Values by IDL Region

Region	Market		Assessed	
	Low	High	Low	High
Eastern	$490	$955	$34	$105
Northern	$600	$700	$54	$154
Payette Lakes	$433	$783	$40	$116
South Central	$344	$475	$35	$98
Southwest	$519	$731	$68	$138

Note: Section 8 provides details for information summarized in Table ES1.

While there is a long history of grazing on state rangelands, other values and ecosystem services are also provided by these lands, which represent nearly 58% of the state's 2,450,401 acres of endowment lands. Historically, IDL's Grazing Land program has generated considerably less in annual revenues per acre than other land asset programs, like forestland, agriculture, minerals, and residential real estate. Together these uses represent about 41% of the state's total endowment land assets, yet in FY 2011 generated over 96% of net revenues from all programs. For this period, IDL's Grazing Land program produced about 2.1% of the $46.7 million in net revenues generated by the nine endowment land programs.

Through an asset class revenue-based comparative, potential opportunities for future evaluation for structural change in the balance of lands dedicated to particular program areas, the evolution of lease structures and the expansion of lease program (e.g. various green energy alternative, seed collection, conservation, etc.) opportunities are identified for future evaluation by IDL.

1 – INTRODUCTION

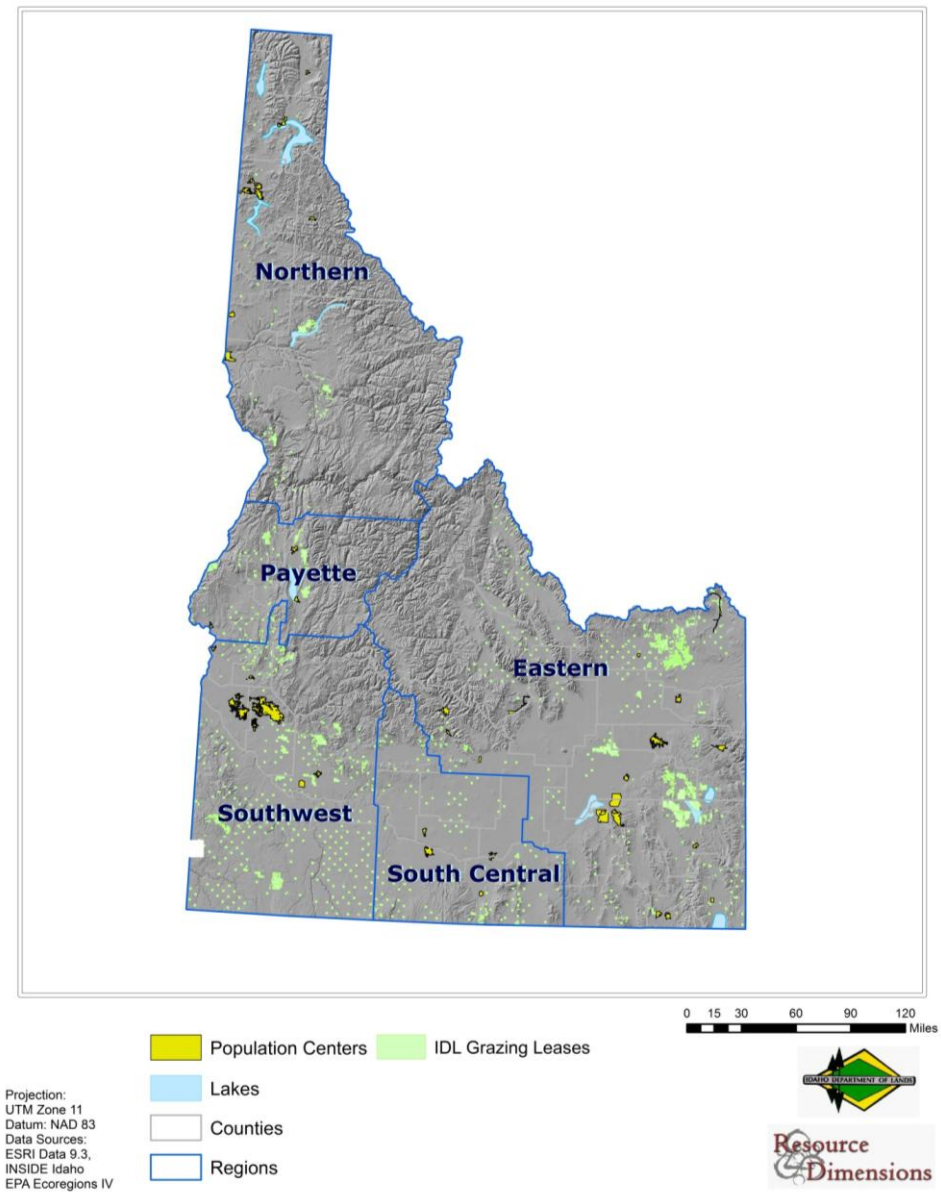
In Idaho about 2.5-million acres of State Endowment Trust Lands (trust lands) are managed by the Idaho Department of Lands (IDL) to generate revenues for nine beneficiary groups.[1] Trust lands are a unique form of public lands and are not managed for the public at large. They are working lands that are leased and sold to private parties for several purposes, including recreation, agriculture, grazing, commercial real estate and timber, to produce revenue for the beneficiaries. These trust lands, including their mineral resources, and the permanent fund which they have generated, are reserved for the sole benefit of these beneficiaries. For IDL to achieve its mission of managing the State's trust lands in a manner that will maximize long-term financial returns to the beneficiaries, it is important to understand key trends within the larger market, what rates are being achieved within the private market, and what characteristics of leases drive those values.

In September 2011 IDL contracted Resource Dimensions, LLC to complete a market rent study for the period 2001–2011 of private grazing land leases in Idaho with a corresponding review of neighboring states including Montana, Oregon, Utah, Washington and Wyoming. The purpose of the study is to both identify trends in the private market and to develop key data resources and analyses to support IDL in their internal assessment of potential changes to the management or structure of the existing grazing lease program on state trust lands.

Throughout this study, data were aggregated and reported by the five IDL study regions identified as Eastern, Northern, South Central, Southwest, and Payette Lakes (Figure 1.1). At IDL's direction the study includes information about non-irrigated private lease arrangements for grazing domestic livestock, including detail about these arrangements and lease rates. Further detail about state land lease rates and arrangements for identified neighboring states are also provided.

[1] The State's nine beneficiary groups include public schools, University of Idaho Agricultural College Fund, Charitable Institutions Fund (Idaho State University, State Hospital North, Idaho Veterans Homes and the School for the Deaf and Blind), Normal School Fund (Idaho State University Department of Education and Lewis-Clark State College), Penitentiary Fund, University of Idaho School of Science Fund, State Hospital South Fund, University of Idaho University Fund, and the Capitol Commission.

Figure 1.1 IDL Study Regions and Grazing Leases (November 2011)



While livestock production is a $975 million industry in Idaho, other amenities and ecosystem services are also provided by the state's rangelands; thus, further revenue opportunities may exist for IDL (e.g., wind energy, minerals leases, recreation permits, hunting/fishing passes, etc.). Possible sources of additional revenue as well as obstacles for implementation are explored through a review of alternative business models. This assessment includes a review of alternative enterprises and layered land management strategies that may provide multiple benefits and economic opportunities.

1.1 Scope and Limitations

This analysis of private grazing market rents, resource demand, trends and potential opportunities has been prepared for IDL and its governing Land Board. Contextual sections of the report provide information on Idaho's Grazing Land program for 2001 through 2011, in addition to information on land cover, capability and natural forage, and market sales and tax assessed value information for grazing lands in each of the five study regions. The defined study area consists of the state's 44 counties that are divided into the five geographic regions shown in Figure 1.1.

As with all socio-economic research, the results presented in this report have some limitations that reflect the trade-off between available study resources (funding, time, etc.) and study rigor and robustness, and thus accuracy. In addition, limitations typical to survey research methods, such as sampling error, non-response bias, measurement error (e.g., invalid responses due to incorrect understanding of survey questions), and the like, are present.

The sampling procedure used to identify potential respondents to the private market survey, as outlined in the project proposal, was found to be problematic. The list acquired for use in developing the survey sample from the Idaho Rangeland Resource Commission (IRRC) included many who were neither lessors nor lessees of private grazing lands. Thus, use of this list required a much more intensive call process than anticipated. Finally, no comprehensive data set relative to the study population (individuals involved in rangeland lease arrangements) exists – from the size of the study population, to the diversity of leasing arrangements, to the lands involved. This complicated the identification of individuals to sample outside of the IRRC list. Further, within this sample identifying knowledgeable lessors and lessees was challenging. Given these factors, the study team sought to identify additional information from each of the 44 counties the study covered in order to present a more complete understanding. This effort required a substantial amount of time and numerous contacts with county tax assessors, County Extension agents, appraisers, and real estate professionals throughout the five study regions (see list of contacts in Appendix A).

1.2 Background

"Trust Lands" are those lands granted by the Federal government to the states under various acts of the United States Congress. These lands, typically granted at the time of Statehood, including the mineral resources and the permanent fund which they have generated, are reserved for the sole benefit of identified beneficiaries in each state. These lands are a unique form of public lands; they are leased and sold to private parties in order to generate revenue for designated beneficiaries, chiefly public schools. In Idaho, IDL manages about 2.5-million acres of Endowment Trust Lands owned by the Public School endowment (School Trust Lands) and eight other endowments (beneficiary groups). Of this total acreage, approximately 1.75 million acres are leased to grazing interests.

1.3 Purpose

The focus of this study is on the question of regional variability in grazing rents and land markets for the period 2001 to 2011, of market trends, factors that influence private lease rates and possibilities for maximizing revenues from State grazing lands in Idaho. To answer these questions, the Resource Dimensions team was contracted to conduct the required research and analysis to provide IDL and the State of Idaho Land Board with information needed to assist in evaluating current leasing trends and conditions, and to make future decisions on how to best manage the Idaho's trust lands for their beneficiaries. The forgoing study addresses the questions asked by IDL, and presents key information to assist in its evaluation of appropriate leasing methodology and lease rates for state endowment rangelands within five geographical study regions of Idaho, generally described as:

- Eastern
- Northern
- Payette Lakes
- South Central
- Southwest

The project employed a quantitative, statistical approach that explicitly recognizes the qualitative nature of the data collection involved. In addition, the use of geographic information systems (GIS) aided in the development of regional base maps that identify, by region, IDL grazing leases, the general location of survey respondents, market and assessed values for Idaho rangelands and general forage ecoregions. Statistical analysis was used to investigate how grazing lease rates vary across varying arrangements and conditions.

1.4 Summary of State Owned Grazing Land and Leases

Currently, IDL has leased land in each of the five geographical study regions of Idaho. Table 1.1 shows program-wide statistics for grazing leases, acres leased, animal unit month (AUMs)

and grazing fees charged over the ten-year study period (2001-2011). The total number of IDL grazing leases peaked in 2003 through 2005 with 1,255 leases for each of the three years. Similarly, the same three-year period reflected the highest totals for leased grazing acreage for IDL leases at 1,854,000 acres. In 2006, the grazing fee reached a high of $6.03/AUM, while 2007 saw the highest AUMs (261,537) for IDL leased acres. As of 2011, IDL grazing leases, leased acres, AUMs and grazing fees were at or near historical lows for the ten-year period.

Table 1.1 IDL Historical Grazing Program Statistics, 2001 - 2011

Year	Number of Grazing Leases	Leased Acres	AUMs	Grazing Fee ($/AUM)
2011	1,176	1,764,301	256,886	$5.13
2010	1,201	1,786,744	260,711	$5.12
2009	1,207	1,783,814	258,506	$5.99
2008	1,222	1,778,280	258,963	$6.01
2007	1,235	1,789,014	261,537	$5.95
2006	1,238	1,738,695	258,355	$6.03
2005	1,255	1,854,000	260,000	$5.53
2004	1,255	1,854,000	260,000	$5.15
2003	1,255	1,854,000	260,000	$5.33
2002	1,250	1,800,000	264,700	$4.96
2001		Not reported		$4.95

Source: IDL grazing program statistics reported in annual reports at IDL (2011). Grazing statistics for the 2011 grazing season were determined from an IDL grazing acreage database provided to Resource Dimensions on 12/9/2011.

The majority of IDL leased land is in the Eastern (37.4%) and Southwest (27.1%) supervisory regions, specifically in Owyhee, Bingham, Caribou, and Elmore counties. This baseline data provides insight into IDL's current asset portfolio; however, no IDL leases were included in the quantitative data in this study. The current asset portfolio can be compared against the analyses and findings discussed in Sections 6 through 9. Table 1.2 provides a summary of the current IDL leased grazing land for the state, by region and county.

Table 1.2 State Owned Grazing Land Acreage by Region and County, 2011

IDL Region/County	IDL Leased Grazing Acres	Percent Of IDL Leased Acres	IDL Region/County	IDL Leased Grazing Acres	Percent Of IDL Leased Acres
Eastern	**660,224**	**37.4%**	**Payette Lakes**	**129,288**	**7.3%**
Ada	49	0.0%	Adams	35,596	2.0%
Bannock	42,444	2.4%	Gem	50	0.0%
Bear Lake	13,011	0.7%	Idaho	4,752	0.3%
Bingham	152,142	8.6%	Valley	36,461	2.1%
Blaine	1,560	0.1%	Washington	52,428	3.0%
Bonneville	37,318	2.1%	**South Central**	**293,876**	**16.7%**
Butte	11,338	0.6%	Blaine	54,247	3.1%
Caribou	103,807	5.9%	Boise	5,516	0.3%
Clark	78,840	4.5%	Camas	21,571	1.2%
Custer	41,282	2.3%	Cassia	45,939	2.6%
Franklin	12,159	0.7%	Custer	749	0.0%
Fremont	75,249	4.3%	Elmore	28,346	1.6%
Jefferson	15,425	0.9%	Gooding	16,507	0.9%
Lemhi	33,716	1.9%	Jerome	6,342	0.4%
Madison	13,735	0.8%	Lincoln	18,988	1.1%
Oneida	10,585	0.6%	Minidoka	7,640	0.4%
Power	17,403	1.0%	Owyhee	54,960	3.1%
Teton	160	0.0%	Power	3,964	0.2%
Northern	**202,863**	**11.5%**	Twin Falls	29,106	1.6%
Benewah	7,418	0.4%	**Southwestern**	**478,050**	**27.1%**
Bonner	2,358	0.1%	Ada	28,520	1.6%
Clearwater	119,534	6.8%	Boise	78,522	4.5%
Idaho	42,091	2.4%	Canyon	27	0.0%
Kootenai	697	0.0%	Elmore	82,936	4.7%
Latah	22,635	1.3%	Gem	19,232	1.1%
Lewis	2,301	0.1%	Owyhee	260,220	14.7%
Nez Perce	1,571	0.1%	Payette	7,793	0.4%
Shoshone	4,258	0.2%	Valley	800	0.0%
			Grand Total	**1,764,301**	**100.0%**

Source: IDL grazing lease database provided to Resource Dimensions on 12/9/2011.

Arranging IDL 2011 grazing acreage data, by lease number, indicates 5,502 whole or partial quarter section parcels leased for grazing. This totals 1,764,301 acres allocated across 1,176 different leases. As shown in Table 1.3, 60% of IDL leases, grouped by grazing lease number, are less than or equal to (≤) one section (640 acres). This represents about 16% of IDL's grazing program acres and AUMs leased. About 91% of the leases in IDL's program database have less than five total sections. These smaller leases include 45% of the grazing acreage and AUM production. The eight leases that are greater than or equal to (≥ 25) sections of land include nearly 25% of the total AUMs leased by IDL.

Table 1.3 Size Distribution of IDL Grazing Leases in 2011

Sections (S)	Number of Leases	Percent of Leases	Cumulative Percentage	Total Acreage	Percent of Acres	Cumulative Percentage	Total AUMs	Percent of AUMs	Cumulative Percentage
S ≤ 1	707	60.1%	60.1%	281,521	16.0%	16.0%	41,996	16.3%	16.3%
1 ≤ S < 2	193	16.4%	76.5%	191,709	10.9%	26.8%	26,628	10.4%	26.7%
2 ≤ S < 3	88	7.5%	84.0%	140,431	8.0%	34.8%	18,647	7.3%	34.0%
3 ≤ S < 4	50	4.3%	88.3%	113,569	6.4%	41.2%	14,807	5.8%	39.7%
4 ≤ S < 5	29	2.5%	90.7%	82,627	4.7%	45.9%	12,097	4.7%	44.4%
5 ≤ S < 10	64	5.4%	96.2%	288,215	16.3%	62.2%	35,757	13.9%	58.4%
10 ≤ S < 15	21	1.8%	98.0%	165,779	9.4%	71.6%	15,292	6.0%	64.3%
15 ≤ S < 25	16	1.4%	99.3%	191,221	10.8%	82.5%	28,621	11.1%	75.5%
25 ≤ S < 126	8	0.7%	100.0%	309,228	17.5%	100.0%	63,041	24.5%	100.0%
Total	**1,176**			**1,764,301**			**256,886**		

Source: IDL grazing lease database provided to Resource Dimensions on 12/9/2011.

Over half of the state total AUMs (137,413 AUMs, 54%) are leased in the Eastern region (Table 1.4). This area is the most productive grazing area with an average grazing capacity of 4.8 acres/AUM. The combined Northern areas are managed primarily for timber harvest and have a much lower average grazing capacity (13.4 acres/AUM).

Table 1.4 IDL Grazing Leases by Region

IDL Study Region	Number of Grazing Leases	Percent of Leases	Grazing Acres	Percent of Acres	AUMs	Percent of AUMS	Average Acres/AUM
Eastern	400	34.0%	660,224	37.4%	137,413	53.5%	4.8
South Central	281	23.9%	293,876	16.7%	38,804	15.1%	7.6
Southwest	268	22.8%	478,050	27.1%	52,506	20.4%	9.1
Payette Lakes	125	10.6%	129,288	7.3%	12,976	5.1%	10.0
Northern	102	8.7%	202,863	11.5%	15,187	5.9%	13.4
Statewide	**1,176**		**1,764,301**		**256,886**		**7.8**

Source: IDL grazing lease database provided to Resource Dimensions on 12/9/2011.

2 – Analysis and Report Development

Using data gathered from extant sources and a literature review of publicly available information, and compiled in the study surveys, the project team conducted a series of analyses required to address the questions and items outlined by IDL.

2.1 Clean and Organize Data Sets for Analyses

Data collected to address the various questions posed by IDL were cleaned, organized and entered in to Microsoft Excel® databases for analyses and exported to statistical programs for analysis. Excel data tables, pivot tables and graphs were prepared to identify potential coding errors and to develop summary statistics for presentation to IDL.

All data spreadsheets, including that from the lease rate survey, were reviewed as a quality control measure to assure accuracy in coding and proper organization of the data for analyses.

2.2 Develop Statistical Tables and Models

Statistical tables, regression models, and other statistical procedures were developed to evaluate how lease prices varied depending on key terms and conditions of the leases identified through the survey (Appendix C).

2.3 Analyses

Descriptive statistics were prepared for the lease rate data with analyses conducted by study region. Types of leasing arrangements, methodology and lease terms were identified. Summary statistics were generated describing mean lease price on a $/AUM basis.

Although IDL desired information about variation in lease prices in relation to the characteristics of the leases (e.g. type of livestock, services provided, subleasing, etc.), the sample size of the survey was not adequate to make this evaluation with strong statistical significance.

Nonetheless, regression analysis and other statistical procedures were conducted where possible to evaluate relationships among lease prices and key lease terms and conditions. These analyses were conducted for the most prevalent types of leases, with a breakdown by county provided where appropriate and when sample sizes were adequate. To assist in the analysis, a comparative review that considered differences in lease arrangements by lease type and region was completed. Statistical tests were not conducted for the comparative review and presentation of regional differences in lease arrangements. However, regression models did evaluate whether regional differences in lease rates were statistically different.

2.4 Report Development

The purpose of this study was to provide the Land Board and IDL with a basis for evaluating the state's leasing methodology and with information about typical grazing lease arrangements in Idaho; in particular private rates and favored lease terms in the five study regions. Other sections of this report provide comparative information on grazing programs in five western states (Montana, Oregon, Utah, Washington and Wyoming); an appraisal-based evaluation of grazing land values and regional variations in forage and land capability impacting land values; and descriptive statistics, a detailed market rent analysis and professional observations to meet the defined project objectives. Information about the frequency and conditions of various lease arrangements used as well as the most common terms and conditions of the leases were developed. Variation in lease rates and arrangements with the services provided by the respondents are described to the degree possible, given the limited sample size. GIS tools were used to develop information about regional forage and land cover and to develop resources to aid understanding of regional analyses of market and tax assessed values, geographic location of survey respondents, and IDL grazing leases. In sum, these analyses provide detailed and descriptive summary and analysis of lease arrangements across the study area.

IDL also requested an assessment of the relative efficacy of alternative business models for grazing leases. This assessment involved a thorough review of available literature that was supplemented with information that was provided through personal communications with other states' trust land personnel over the course of the study, and with related projects study team members have conducted. Some conclusions based on this assessment are also presented here.

3 – REGIONAL SUMMARIES

Idaho's rangelands span diverse geographic conditions, including Palouse prairie, sagebrush-steppe, canyon grasslands, volcanic plateaus, high desert shrublands, mountain meadows and valleys, juniper woodlands, aspen savannahs, and riparian lands. There is a natural geographical division along the Salmon River as it flows east to west near the center of the state through the small community of Riggins. North of this line is in the Pacific Time Zone and south of this line is the Mountain Time Zone; typically referred to as northern and southern Idaho, respectively.

3.1 Overview

Analyses of grazing market data is segregated into five regions of Idaho (Figure 1.1) identified for this study by IDL – Eastern, Northern, Payette Lakes, South Central and Southwest. Table 3.1 details the division of counties into the five grazing regions defined for this study.

Table 3.1 Idaho Grazing Regions, by County

Eastern Region	Northern Region	Payette Lakes Region	South Central Region	Southwestern Region
Bannock	Benewah	Adams	Blaine	Ada
Bear Lake	Bonner	Valley	Camas	Boise
Bingham	Boundary	Washington	Cassia	Canyon
Bonneville	Clearwater		Gooding	Elmore
Butte	Idaho		Jerome	Gem
Caribou	Kootenai		Lincoln	Owyhee
Clark	Latah		Minidoka	Payette
Custer	Lewis		Twin Falls	
Franklin	Nez Perce			
Fremont	Shoshone			
Jefferson				
Lemhi				
Madison				
Oneida				
Power				
Teton				

There is vast ecological diversity across these 44 counties. Lands range from semiarid shrub and grass-covered plains to forested mountains, woodland and shrubland hills, to irrigated agricultural lands, valleys, volcanic plateaus, glaciated peaks, and wetlands. The United States Environmental Protection Agency (EPA) identifies ten Level III ecoregions and 71 Level

IV ecoregions for the state.[2] Spatial differences in the capacity and potential of ecosystems contained in theses ecoregions help to explain the stratification of the state's grazing land environment, as well as differences in market prices for private grazing leases and land presented in Sections 6, 7 and 8 of this report.

All regional maps within this section were created through the compilation and merger of a number of databases, statistics, GIS coverages, and U.S. EPA Level III ecoregion data files (shapefiles, metadata and symbology)[3]. The ESRI ArcGIS 10.0 integrated geospatial platform was used to develop all regional study specific maps. For details on methodology see Appendix

3.2 Eastern Idaho

Ecoregions and landcover

The dominant Level III ecoregions (Table 3.2) of the central and northern area of IDL's Eastern region are 17-Middle Rockies (33%), 12-Snake River Plain (26.6%), 16-Idaho Batholith (19.8%), and 80-Northern Basin and Range (15.2%) in the southern reaches. Fingers of 19-Wasatch and Uinta Mountains (2%), 13-Central Basin and Range (1.7%), and 18-Wyoming Basin (1.6%) ecoregions are interspersed in the south to southwestern area of the Eastern region. Figure 3.1 reflects the geographic dispersion of these ecoregions.

[2] Ecoregions signify areas of general similarity in ecosystems and in the type, quality, and quantity of environmental resources. The framework is an interagency effort between the United States Forest Service (USFS), Natural Resources Conservation Service (NRCS), U.S. EPA Region X, U.S. EPA National Health and Environmental Effects Research Laboratory (Corvallis, Oregon), Idaho Department of Environmental Quality, Bureau of Land Management (BLM), and the United States Geological Survey (USGS) Earth Resources Observation Systems (EROS) Data Center to develop a common framework of ecological regions for research and to structure and implement ecosystem management strategies across federal and state agencies, and nongovernment organizations. U.S. EPA Western Ecology Division, Ecoregions of Idaho (2002), available at http:/www.epa.gov/wed/pages/ecoregions/id_eco.htm#Ecoregions.

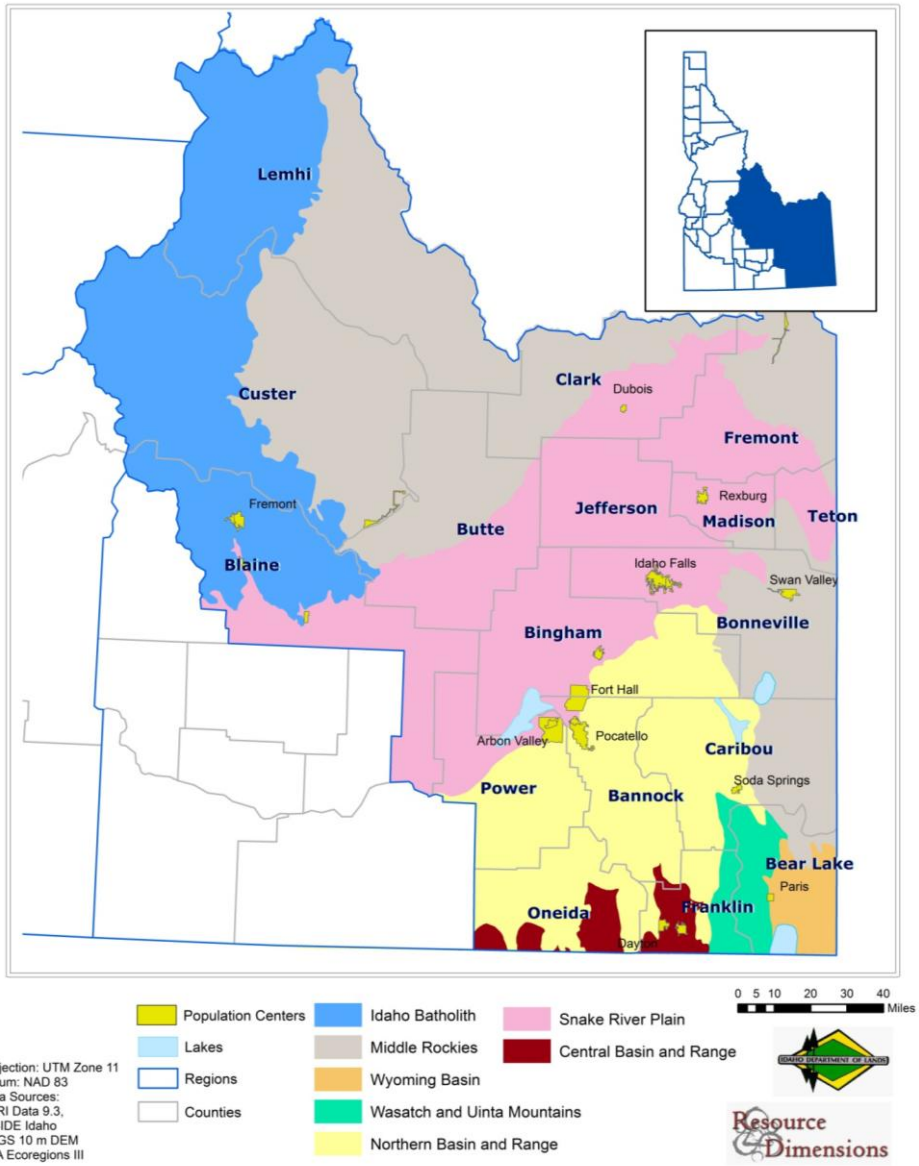
[3] U.S. EPA Office of Research & Development (ORD) - National Health and Environmental Effects Research Laboratory, Level III Ecoregions of Idaho data files published 5/1/2010 were accessed and downloaded for use in developing regional files for this study on 2/15/2012. ftp://ftp.epa.gov/wed/ecoregions/id/id_eco_l3.zip> Master high-resolution maps contained within this report and pertinent data layers used in developing these maps have been provided to IDL.

Table 3.2 Eastern Region Level III Ecoregions

IDL Region	Level III Ecoregion	Acres	% Total
Eastern		**20,031,150**	
	Middle Rockies	6,618,766	33.0
	Snake River Plain	5,326,861	26.6
	Idaho Batholith	3,970,908	19.8
	Northern Basin and Range	3,039,933	15.2
	Wasatch and Uinta Mountains	410,382	2.0
	Central Basin and Range	339,237	1.7
	Wyoming Basin	325,062	1.6

Source: U.S. EPA-ORD data 2010.

Figure 3.1 Level III Ecoregions - Eastern Region



Across these ecoregions annual precipitation varies widely from as little as four inches in the Snake River Basalts and Northern Basin and Range to over 50 inches in areas of the Middle Rockies and Beaverhead Mountains. Similarly, the land forms of the Eastern region are topographically diverse, as are the growing seasons, ranging from as little as 30 days at higher elevations of the Middle Rockies to 180 days in the Bear Lake area where precipitation ranges from 16 to 40 inches annually, principally during the fall, winter and spring. Average annual temperatures vary from 30° to 58°F across the Eastern region.

Predominant land uses of local importance are timber harvest, recreation, agriculture, livestock grazing, and mining. Prevalent landcover includes sagebrush grasslands, which is a mix of sagebrush species and perennial bunchgrasses. This landcover mix provides good forage for spring and fall grazing. Mountain and alpine areas include coniferous forests of Douglas fir, subalpine fir, and Engelmann spruce forests and mountain meadows. Meadow vegetation provides good summer range for livestock, and is composed of grasses, forbs and shrubs. Figure 3.2 provides physical and typical land cover context for the Eastern region.

Figure 3.2 Eastern Region Landcover

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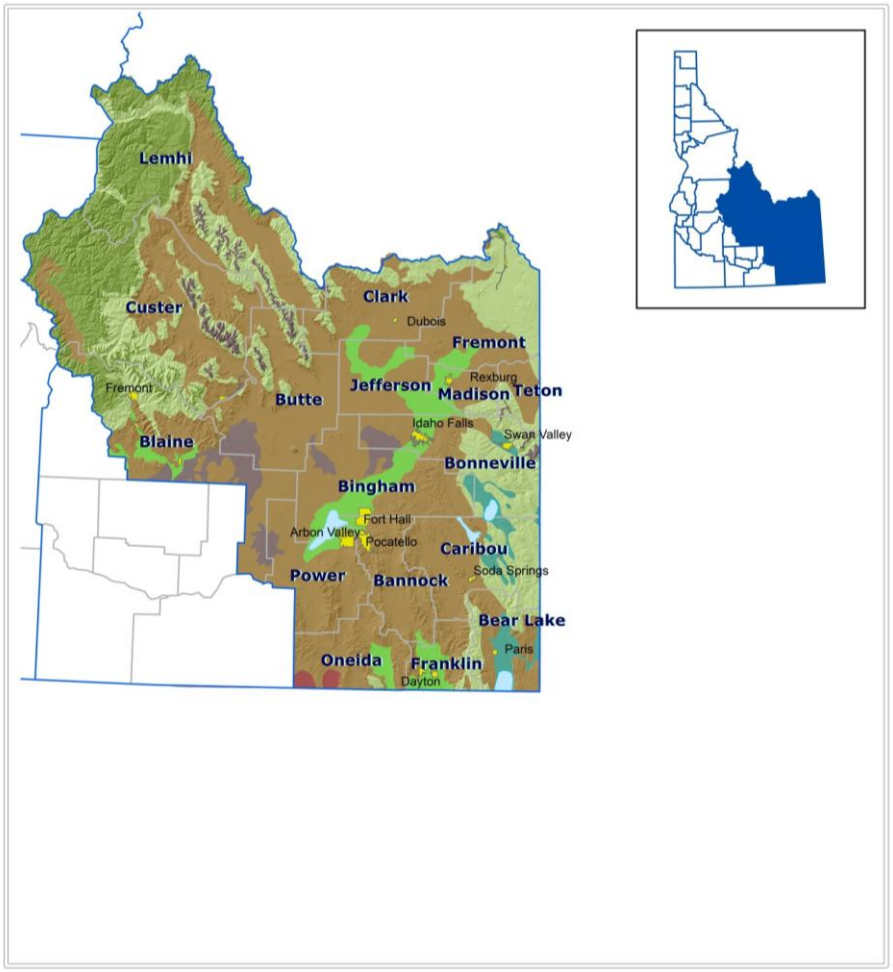
ALL MAPS have been revised in line with this format. We are in the process of placing them.



Regional grazing operations overview

The number of beef cattle operations in the Eastern region declined by 6.5% from 2002 to 2007, whereas the decline in the number of sheep operations was significantly greater, at 17.5%, over the same time period (USDA-NASS 2009c and USDA-NASS 2009d).

On the whole Idaho experienced a 6.8% decline in beef cattle operations and a 7.7% decline in sheep operations between 2002 and 2007. Table 3.3 presents demographic information and base livestock operations statistics for the Eastern region.

Table 3.3 Regional Livestock Summary – Eastern

Eastern Region	County Population	Land Area (sq. mile)	Population density (sq. mile)	Beef cow farms (2007)	Beef cow farms (2002)	Sheep and lamb farms (2007)	Sheep and lamb farms 2002)
Bannock	82,839	1,112.0	74.5	253	249	36	58
Bear Lake	5,986	974.8	6.1	162	180	18	17
Bingham	45,607	2,094.0	21.8	426	424	79	57
Bonneville	104,234	1,866.1	55.9	214	245	39	39
Butte	2,891	2,231.7	1.3	70	69	10	15
Caribou	6,963	1,764.2	3.9	105	119	8	32
Clark	982	1,764.2	0.6	27	49	2	4
Custer	4,368	4,920.9	0.9	103	117	10	23
Franklin	12,786	663.7	19.3	179	197	16	28
Fremont	13,242	1,863.5	7.1	128	139	19	23
Jefferson	26,140	1,093.5	23.9	277	293	42	32
Lemhi	7,936	4,563.4	1.7	156	174	14	23
Madison	37,536	469.2	80.0	131	130	12	14
Oneida	4,286	1,200.1	3.6	147	159	12	19
Power	7,817	1,404.2	5.6	80	92	0	6
Teton	10,710	449.5	23.8	84	83	8	4
Total	374,323	28,434.8		2,542	2,719	325	394
Avg per county	23,395	1,777.2	21	158.9	169.9	20.3	24.6
State of Idaho	1,567,582	82,643.1	19	7,365	7,902	1,210	1,310

Sources: USDA-NASS 2009c and USDA-NASS 2009d.

3.3 Northern Region

Ecoregions and landcover

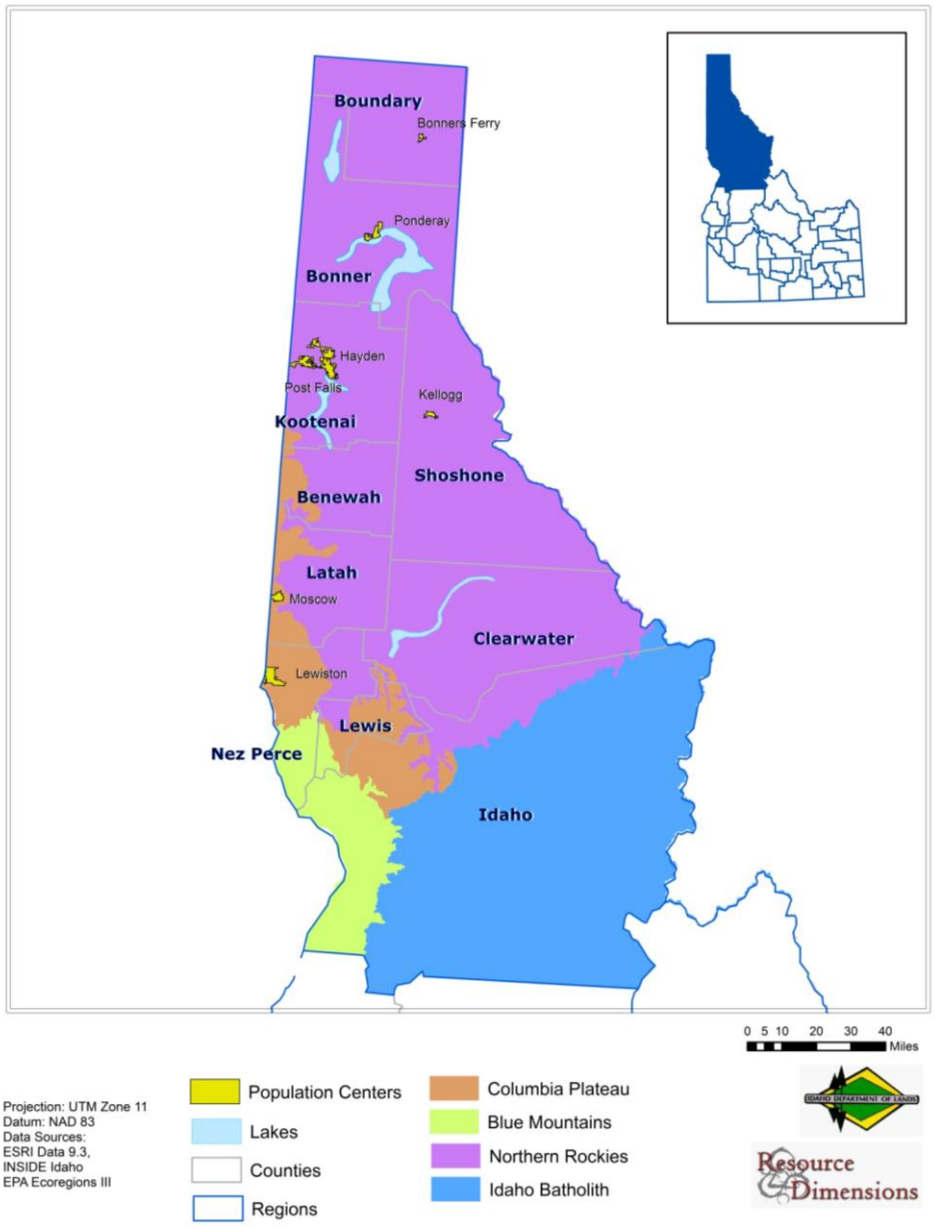
The prevailing Level III ecoregions (Table 3.4) of the Northern region is the 15-Columbia Mountains/Northern Rockies (81.9%), 10-Columbia Plateau (10%) in the southwestern corner of the region and another pocket in the region between Nez Perce and Grangeville, and a smaller area of Blue Mountains (8%) (Figure 3.3).

Table 3.4 Northern Region Level III Ecoregions

IDL Region	Level III Ecoregion	Acres	% Total
Northern		**9,404,354**	
	Columbia Mountains/Northern Rockies	7,703,196	81.9
	Columbia Plateau	944,842	10.0
	Blue Mountains	756,315	8.0

Source: U.S. EPA-ORD data 2010.

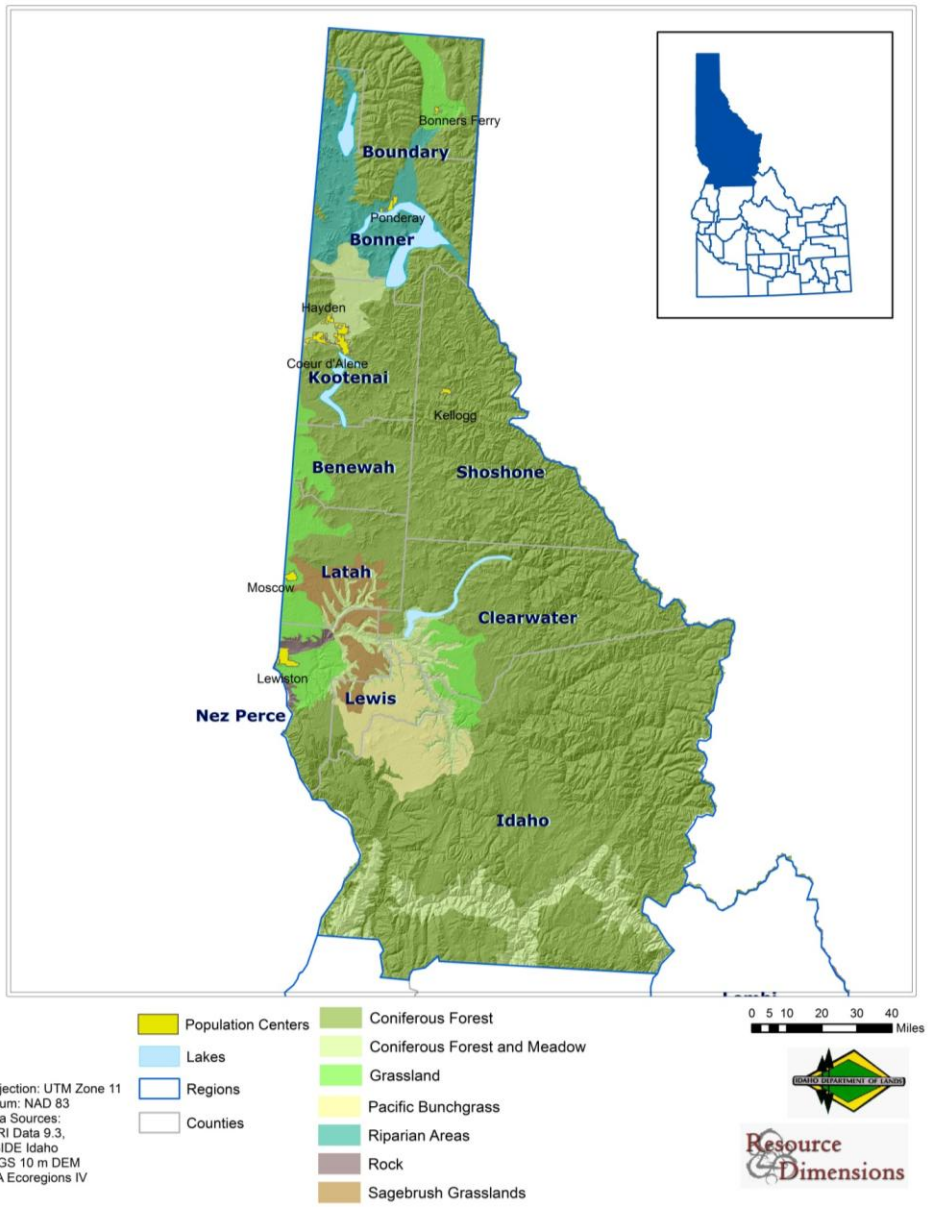
Figure 3.3 Level III Ecoregions - Northern Region



The climate, trees, and understory species of ecoregion 15 are characteristically maritime-influenced. The predominant rangeland cover is coniferous forest and mountain meadow (Figure 3.4). Ecoregion 10 is characterized by expansive bunchgrass-covered volcanic plains and valleys, cleaved by the Clearwater, Lower Salmon, Potlatch, and Snake rivers. Though little native bunchgrass remains, following conversion of the prairies to farmland, the existing grasslands provide excellent spring forage to cattle and sheep.

Annual precipitation between the two predominant ecoregions ranges from 30 to 100 inches in the rugged mountainous Northern Rockies ecoregion, down to 10 to 30 inches in the rolling plateaus, basalt plains and river breaklands of the Columbia Plateau ecoregion. Average annual temperatures vary from 30° to 58°F across ecoregion 15 and from 45° to 54°F in ecoregion 10. The Northern Rockies growing season of Boundary, Bonners Ferry, Clearwater, Kootenai, and Shoshone counties is impacted by elevation, and ranges from 45 to 140 days. In counties dominated by the Columbia Plateau ecoregion (Benewah, Latah, Lewis and Nez Perce) the growing season ranges from 100 to 170 days.

Figure 3.4 Northern Region Landcover



Regional grazing operations overview

The Northern region had a roughly 8% decrease in beef cattle operations and a roughly 13.1% decrease in sheep operations between 2002 and 2007 (USDA-NASS 2009c and USDA-NASS 2009d).

Table 3.5 presents demographic information and base livestock operations statistics for the Northern region.

Table 3.5 Regional Livestock Summary – Northern

Northern Region	County Population	Land Area (sq. mile)	Population density (sq. mile)	Beef cow farms (2007)	Beef cow farms (2002)	Sheep and lamb farms (2007)	Sheep and lamb farms 2002)
Benewah	9,285	776.6	12.0	69	64	6	16
Bonner	40,877	1,734.6	23.6	176	178	55	61
Boundary	10,972	1,268.6	8.6	112	122	17	9
Clearwater	8,761	2,457.3	3.6	83	74	6	6
Idaho	16,267	8,477.4	1.9	276	305	32	30
Kootenai	138,494	1,244.1	111.3	207	241	51	51
Latah	37,244	1,076.0	34.6	145	156	49	47
Lewis	3,821	478.0	8.0	51	55	0	3
Nez Perce	39,265	848.1	46.3	108	133	9	34
Shoshone	12,765	2,629.7	4.9	4	10	0	2
Total	317,751	20,990.3		1,231	1,338	225	259
Avg per county	31,775	2,099.0	25.5	123	134	23	26
State of Idaho	1,567,582	82,643.1	19	7,365	7,902	1,210	1,310

Sources: USDA-NASS 2009c and USDA-NASS 2009d.

3.4 Payette Lakes Region

Ecoregions and landcover

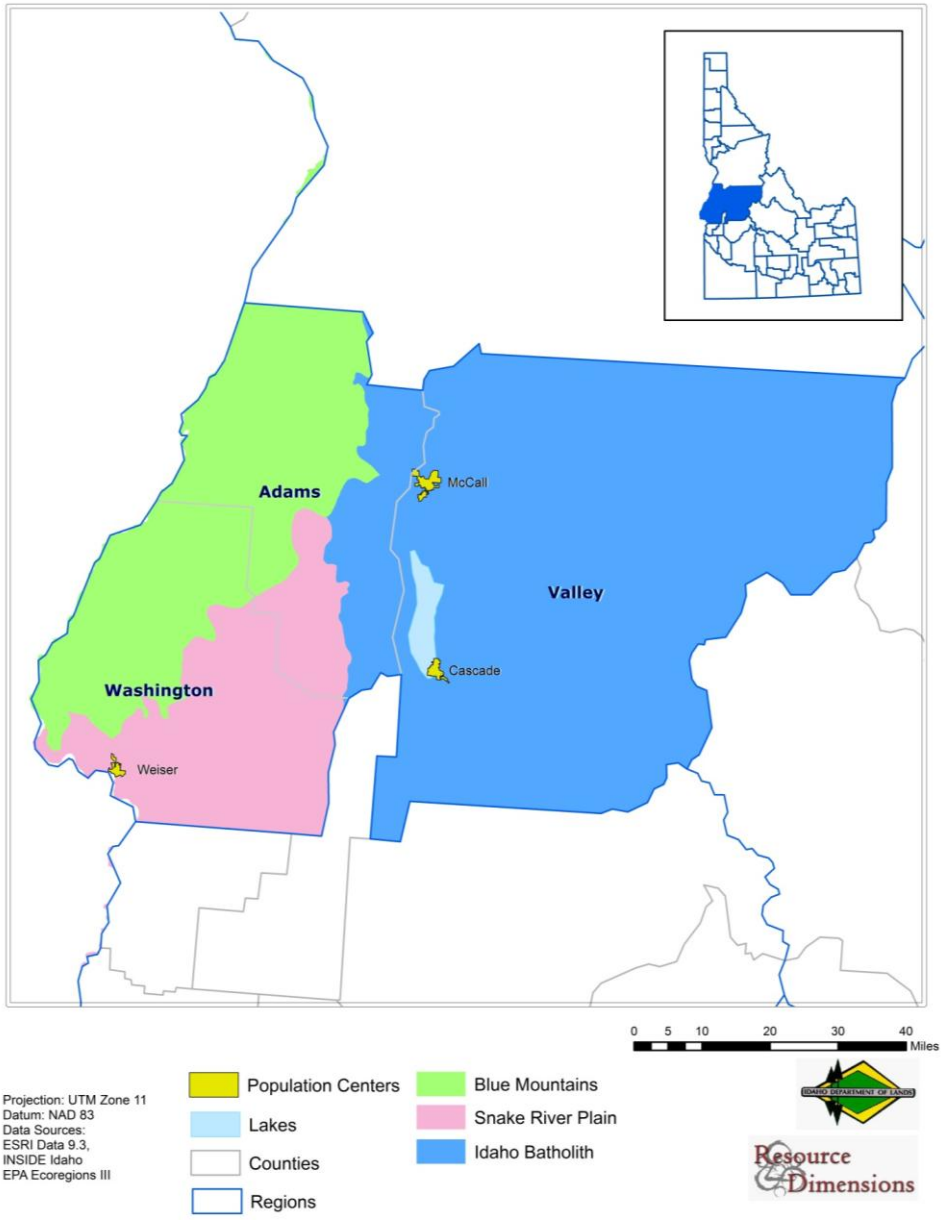
The dominant Level III ecoregion (Table 3.6) of the Payette Lakes region is the 16-Idaho Batholith (62.4%); a dissected partially glaciated mountain plateau. Soils are sensitive to disturbances, particularly when vegetation is removed. The 11-Blue Mountains ecoregion (21.8%), a low, open complex of volcanic mountain ranges, covers the west-northwestern section of the region, while the southwestern corner of the region is the 12-Snake River Plain ecoregion (15.8%). Level III ecoregion distribution is shown in Figure 3.5.

Table 3.6 Payette Lakes Region Level III Ecoregions

IDL Region	Level III Ecoregion	Acres	% Total
Payette		**4,216,680**	
	Idaho Batholith	2,632,639	62.4
	Blue Mountains	919,666	21.8
	Snake River Plain	664,375	15.8

Source: U.S. EPA-ORD data 2010.

Figure 3.5 Level III Ecoregions - Payette Lakes Region

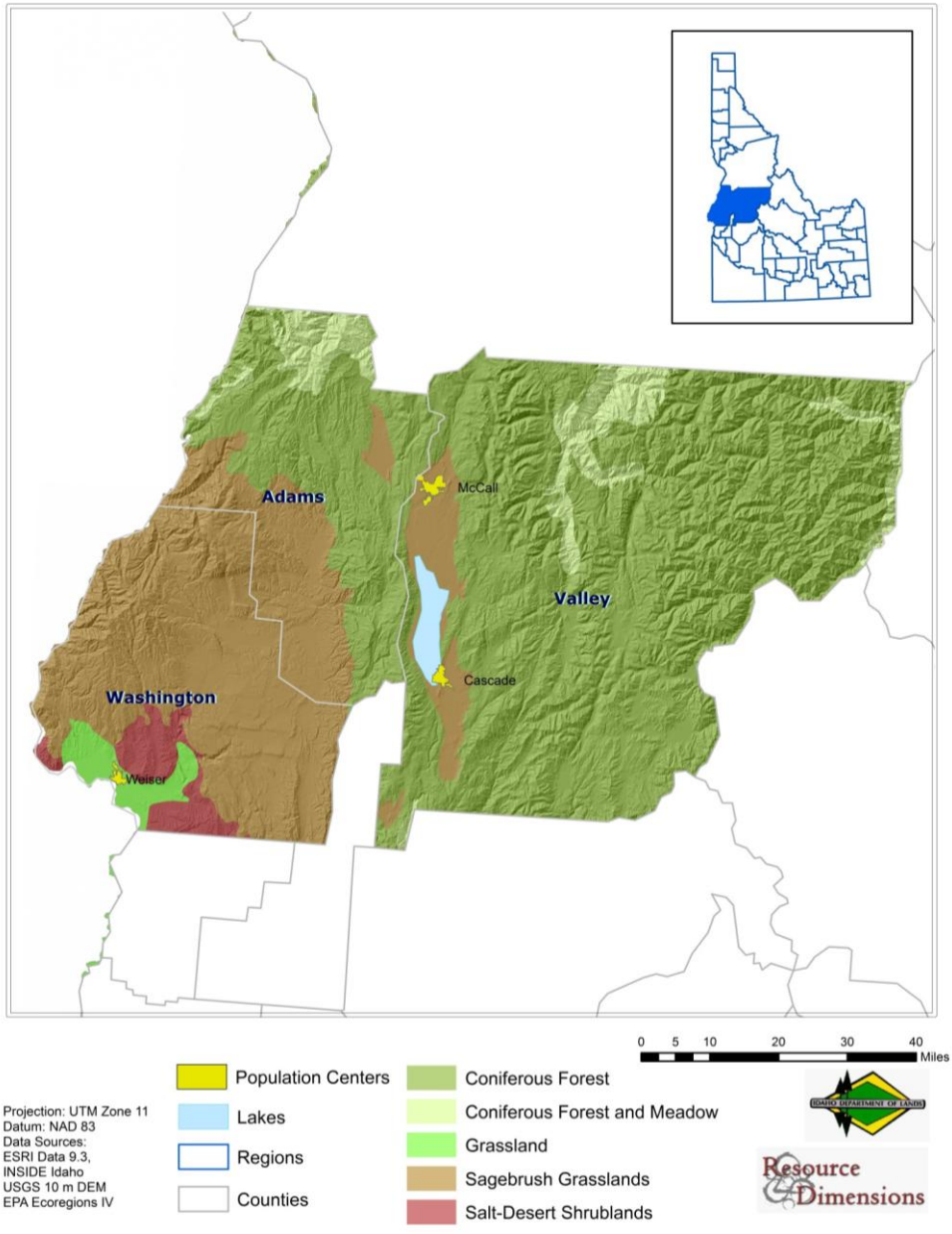


Annual precipitation in ecoregion 11, at the western edge of the Payette Lakes study region, varies from 9 to 18 inches in the valleys up to as much as 100 inches in some areas of the Blue Mountains. Moving east into ecoregion 16, much of the 20 to 80 inches of annual precipitation falls as snow during the fall, winter, and spring. The climate of the interior and southeastern area of the region is influenced by prevailing winds from the west and north-south course of the mountain ranges. Here the prevalent ecoregions 12 and 17 receive annual average precipitation ranging from 10 to over 50 inches in areas of the Middle Rockies and Beaverhead Mountains.

Typical land cover is coniferous forest: Grand fir, Douglas fir, Engelmann spruce, and subalpine species as Ponderosa pine (Figure 3.6). Shrubs and grasses grow in canyons and meadow, though sagebrush grasslands are prevalent in the southwestern portion of the region.

Growing seasons in the Payette Lakes region, as in much of the state, vary widely with elevation; ranging from 30 days at higher elevations in the west, to 130 days in the valleys and southeastern portion of the region. Population centers are typically small, located at lower elevations and concentrated along rivers. The economies of communities such as McCall and Stanley focus on tourism and recreation. Much of the region is forested; timber harvesting and recreation are dominant land uses, with livestock grazing and mining of local importance.

Figure 3.6 Payette Lakes Region Landcover



Regional grazing operations overview

The number of beef cattle operations in the Payette Lakes region declined by 9.5% from 2002 to 2007. However, the number of sheep operations increased by 1.7% over the same time period (USDA-NASS 2009c and USDA-NASS 2009d).

Table 3.7 presents demographic information and base livestock operations statistics for the Payette Lakes region.

Table 3.7 Regional Livestock Summary – Payette Lakes

Payette Lakes Region	County Population	Land Area (sq. mile)	Population density (sq. mile)	Beef cow farms (2007)	Beef cow farms (2002)	Sheep and lamb farms (2007)	Sheep and lamb farms 2002)
Adams	3,976	1,363.1	2.9	103	126	14	14
Valley	9,862	3,664.5	2.7	40	35	10	6
Washington	10,198	1,453.0	7.0	191	208	34	37
Total	24,036	6,480.6		334	369	58	57
Avg per county	8,012	2,160.2	4.2	111.3	123.0	19.3	19.0
State of Idaho	1,567,582	82,643.1	19	7,365	7,902	1,210	1,310

Sources: USDA-NASS 2009c and USDA-NASS 2009d.

3.5 South Central Region

Ecoregions and landcover

Level III ecoregions (Table 3.8) in the South Central study region include 12-Snake River Plain (55.9%) in the central zone of the region, 80-Northern Basin and Range (36.9%) to the south, and Idaho 16-Batholith (7.1%) to the north. A small 5,826 acre (0.1%) area of Central Basin and Range is found in the southeastern corner of the region.

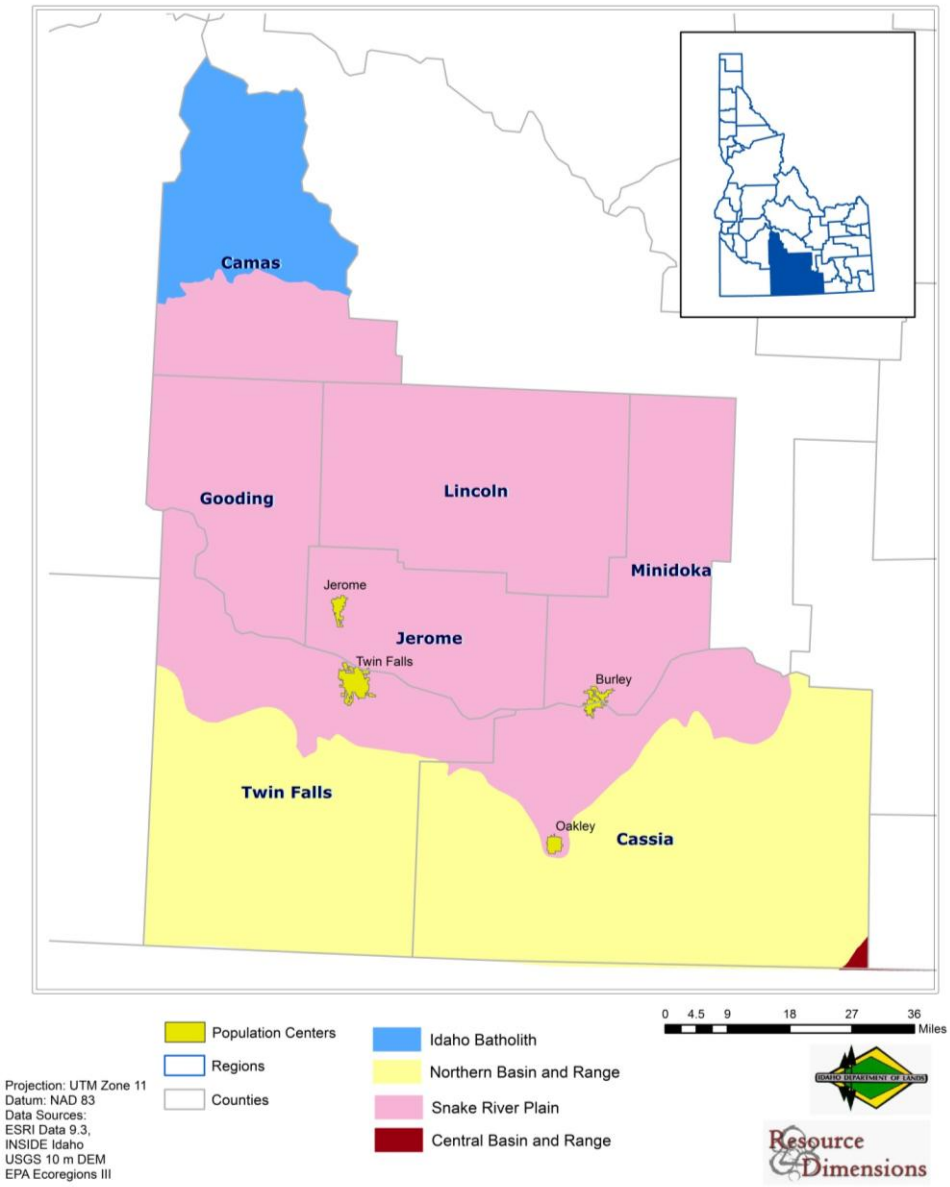
Table 3.8 South Central Region Level III Ecoregions

IDL Region	Level III Ecoregion	Acres	% Total
South Central		**5,625,867**	
	Snake River Plain	3,145,030	55.9
	Northern Basin and Range	2,074,647	36.9
	Idaho Batholith	400,363	7.1
	Central Basin and Range	5,826	0.1

Source: U.S. EPA-ORD data 2010.

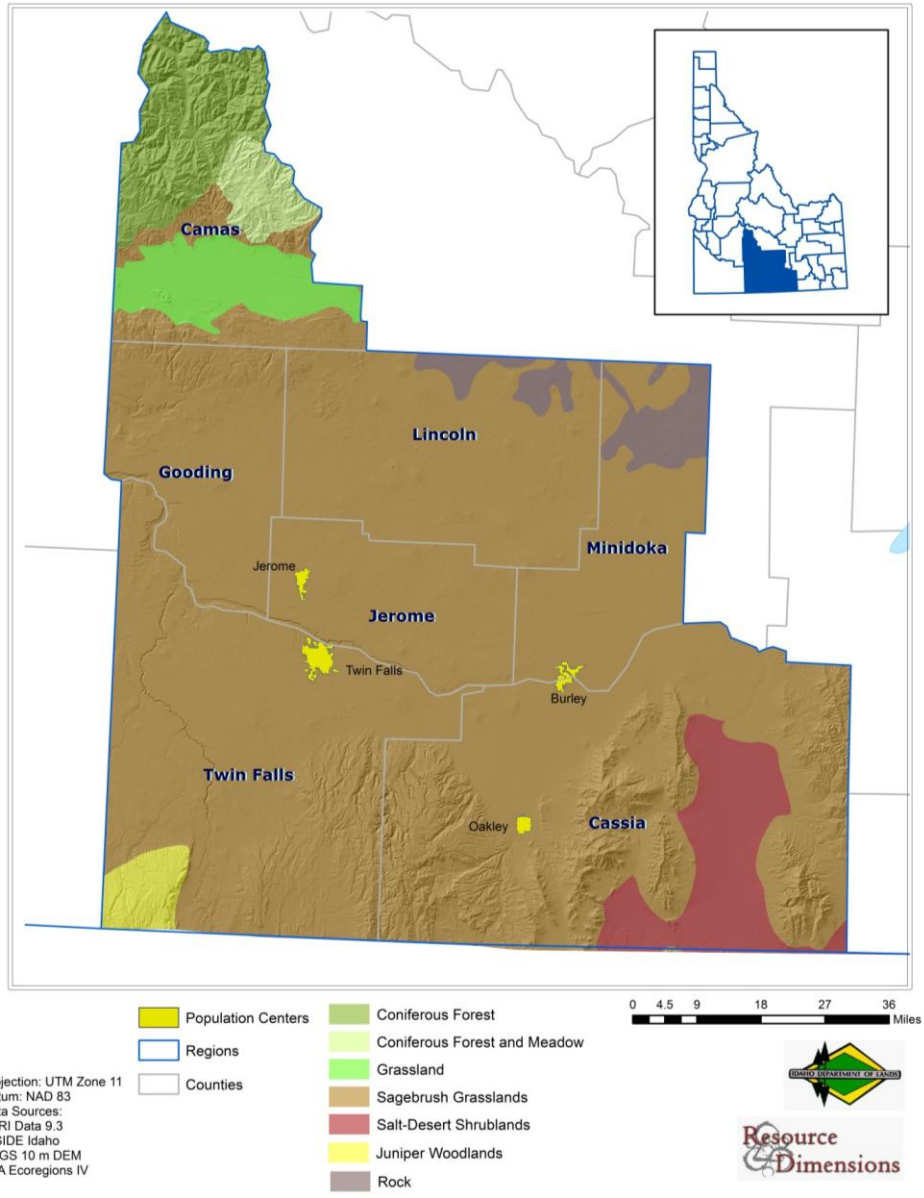
Shown in Figure 3.7 is the geographic distribution of level III ecoregions for the South Central Region.

Figure 3.7 Level III Ecoregions - South Central Region



Shown in Figure 3.8, the most expansive landcover for the South Central study region is sagebrush grassland. However, the region's northern border is predominantly coniferous forest and mountain meadow. Salt-desert shrublands are found on the region's eastern border where ecoregions 12 and 80 are dominant. The whole of the region is characterized by low annual precipitation ranging from 7 to 15 inches in the west, and 4 to 20 inches in the southeast. Soils of the region generally have a high saline content. Palatable shrubs, due to their deep root systems, fare better in these conditions than do grasses or forbs, and retain their excellent forage value in winter. Thus, areas of this region are considered some of the best rangelands for sheep grazing in winter. Two pockets of juniper woodland are located in the southeastern corner of the region.

Figure 3.8 South Central Region Landcover



Average annual temperatures range from 35° to 45°F in the western area of the South Central study region, 40° to 58°F in ecoregion 12, and 41° to 50°F in ecoregion 80. Across the South Central region the growing season ranges from 60 to 165 days, decreasing from west to east and with elevation. The unique landscape is comprised of extensive plains, volcanic plateaus, isolated buttes, and mountains. Beyond the major surface waters that include the Snake River, American Falls Reservoir, and Lake Walcott, there are few other waterbodies across the region; thus groundwater is the primary water source for agricultural and residential uses across the region.

Generally, communities of the South Central region are small and sparsely distributed. Yet, the northern area of the region contains a large percentage of the region's population. Larger communities of the region include Twin Falls, Burley, Jerome, and Gooding. Primary land uses include livestock grazing, dryland and irrigated agriculture, and recreation.

Regional grazing operations overview

The South Central region had a marked decline in number of beef cattle operations between 2002 and 2007 – a decrease of 14.8%. However, the drop in the number of sheep operations between 2002 and 2007 wasn't as steep at 9.8% (USDA-NASS 2009c and USDA-NASS 2009d).

Table 3.9 presents demographic information and base livestock operations statistics for the South Central region.

Table 3.9 Regional Livestock Summary – South Central

South Central Region	County Population	Land Area (sq. mile)	Population density (sq. mile)	Beef cow farms (2007)	Beef cow farms (2002)	Sheep and lamb farms (2007)	Sheep and lamb farms 2002)
Blaine	21,376	2,643.6	8.1	64	65	13	9
Camas	1,117	1,074.5	1.0	23	13	0	2
Cassia	22,952	2,565.1	8.9	186	244	30	33
Gooding	15,464	729.0	21.2	202	216	32	48
Jerome	22,374	597.2	37.5	151	187	23	19
Lincoln	5,208	1,201.4	4.3	101	124	12	17
Minidoka	20,069	757.6	26.5	169	189	29	37
Twin Falls	77,230	1,921.2	40.2	409	494	63	59
Total	185,790	11,489.5		1,305	1,532	202	224
Avg per county	23,224	1,436.2	18	163	192	25	28
State of Idaho	1,567,582	82,643.1	19	7,365	7,902	1,210	1,310

Source: USDA-NASS 2009c and USDA-NASS 2009d.

3.6 Southwest Region

Ecoregions and landcover

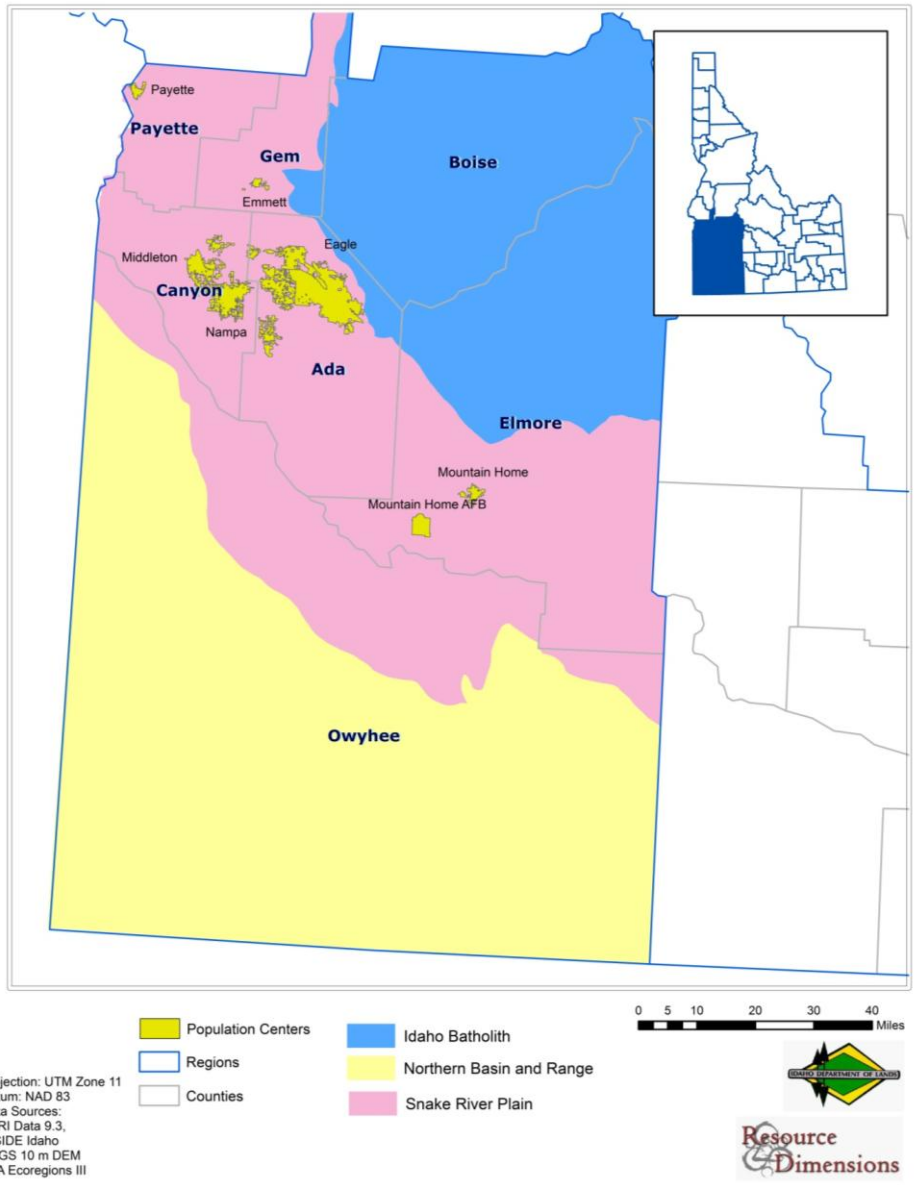
As with the South Central region, Level III ecoregions (Table 3.10) within the Southwest region include the 80-Northern Basin and Range (40.7%) in the southwest corner, 12-Snake River Plain (35.4%) in central, and 16-Idaho Batholith (23.9%) is prevalent in the northern reach. Lands within ecoregion 12 tend to be lower and more gently sloping than the surrounding ecoregions (Figure 3.9). Available water for irrigation lends toward agricultural cropland use. Those lands within ecoregion 80 consist of arid tablelands, intermountain basins, and scattered mountains.

Table 3.10 Southwest Region Level III Ecoregions

IDL Region	Level III Ecoregion	Acres	% Total
Southwest		**9,820,198**	
	Northern Basin and Range	3,996,280	40.7
	Snake River Plain	3,480,777	35.4
	Idaho Batholith	2,343,140	23.9

Source: U.S. EPA-ORD data 2010.

Figure 3.9 Level III Ecoregions - Southwest Region

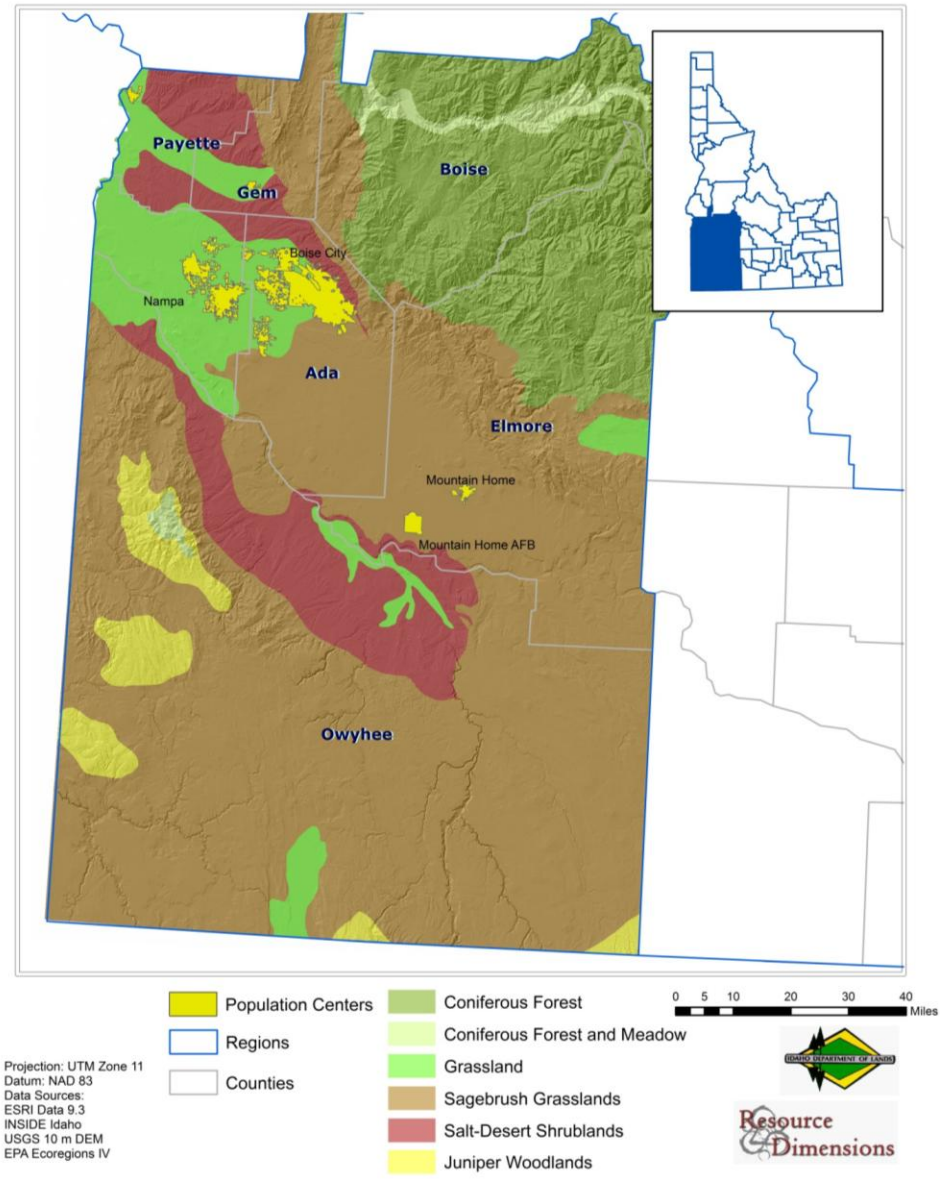


The Bruneau, Owyhee, and Snake rivers are the main waterbodies and are among the few perennial waterbodies present in the Southwest region. The landscape is characterized by canyons, lava formations, and granite mountains of the Owyhee Range. Elevation ranges from 1200–2500 meters (4000–8000 feet). Small spring-fed streams are typical and intermittent.

Annual precipitation ranges from 7 to 15 inches; with much lost to evaporation in the summer months. Average annual temperature range from 35° to 45°F; elevation is the principal factor in regional growing season variation, which ranges from less than 60 to 120 days at lower elevations. As with much of the state, communities are small, generally rural and distributed in at lower elevations along rivers of the region. Livestock grazing, dryland and irrigated agriculture, and recreation are the primary land uses.

Land cover across the Southwest region varies from sagebrush steppe to grassland, though the region also has sizeable areas of salt-desert shrub and juniper woodland, with Douglas fir, and aspen common at higher elevations. Rangeland grazing is common with irrigated agriculture predominant in eastern basins. Cattle feedlots and dairy operations are also common in the Snake River Plain. Figure 3.10 provides primary land cover classes and context for the Southwest region and its counties.

Figure 3.10 Southwest Region Landcover



Regional grazing operations overview

The Southwest region bucked the trend of decreasing numbers of beef cattle and sheep operations. The number of beef cattle operations increased 0.5% from 2002 to 2007, while the number of sheep operations increased 6.4% over the same time period (USDA-NASS 2009c and USDA-NASS 2009d).

Table 3.11 presents demographic information and base livestock operations statistics for the Southwest region. The number of beef cattle operations in each Boise, Gem and Payette counties declined from 2002 to 2007.

Table 3.11 Regional Livestock Summary – Southwest

Southwestern Region	County Population	Land Area (sq. mile)	Population density (sq. mile)	Beef cow farms (2007)	Beef cow farms (2002)	Sheep and lamb farms (2007)	Sheep and lamb farms 2002)
Ada	392,365	1,052.6	372.8	327	340	66	82
Boise	7,028	1,899.2	3.7	34	49	1	2
Canyon	188,923	587.4	321.6	734	674	144	142
Elmore	27,038	3,074.7	8.8	127	112	39	29
Gem	16,719	560.9	29.8	262	276	68	46
Owyhee	11,526	7,665.5	1.5	268	265	42	39
Payette	22,623	406.9	55.6	201	228	40	36
Total	666,222	15,247.2		1,953	1,944	400	376
Avg per county	95,175	2,178.2	113	279	278	57	54
State of Idaho	1,567,582	82,643.1	19	7,365	7,902	1,210	1,310

Source: USDA-NASS 2009c and USDA-NASS 2009d.

4 – Overview of Comparable State Programs

In this section we review the status of state grazing land programs in Idaho and five neighboring western states (Montana, Oregon, Utah, Washington and Wyoming). While not intended as a comprehensive study, we summarize key state program information to compare the current systems for rangeland management and fee collection between these states.

4.1 State Program Abstracts

Idaho

Idaho was granted approximately 3.7 million acres of land for support of state institutions when it joined the Union in 1890. The state has maintained about 68% of its original land grant. Today, IDL manages about 2.5 million acres of trust lands for several purposes, including recreation, agriculture, grazing, commercial real estate and timber, to generate revenue for beneficiary groups including public schools and other state institutions (Resource Dimensions 2010; see also Section 1 Introduction). Idaho's grazing program is administered under rules promulgated by the Idaho State Board of Land Commissioners, and is governed by the Revised Rules Governing Grazing Leases and Cropland Leases, IDAPA 20.03.14 (Idaho Administrative Code 2009).

About 1.8 million acres were leased for grazing in 2011 on 1,176 leases. This acreage produced 256,886 AUMs in 2011. In FY2011 roughly $330,000 was generated for Idaho's trust beneficiaries by grazing leases (IDL 2012).

As shown earlier in this report (Table 1.2), most grazing leases are located in southern Idaho (IDL 2008). Only a small percentage of grazing leases are intermingled with lands where timber is harvested either because most leases are not suitable for both uses or there exists minimal demand for grazing, due to low cattle and sheep numbers in that area of the state.

Montana

The Enabling Act of 1889, passed by the United States Congress, stipulated that sections sixteen and thirty-six in every township within Montana be set aside for state land endowment trust beneficiaries, which include public schools and other state institutions. The Trust Land Management Division of the Montana Department of Natural Resources and Conservation (DNRC), under the direction of the State Board of Land Commissioners, administers and manages state trust timber, surface, and mineral resources for the benefit of the trust beneficiaries, including educational and state institutions (Montana DNRC 2012). State grazing lands are governed by Chapter 36 of the Administrative Rules of the State of Montana.

At the close of FY2011, surface acreage trust lands in Montana totaled over 5.1 million acres; grazing leases approximately 4.07 million acres (Montana DNRC 2011c). Roughly 8,200 grazing leases were administered on these lands, with total grazing production of over 975,000 AUMs (K. Chappell, personal communication 2012). In FY2011, grazing leases generated approximately $6.6 million in gross revenue for trust beneficiaries (Montana DNRC 2012).

Oregon

Oregon currently has approximately 800,000 acres of trust lands to support public schools and other beneficiaries. Oregon's state-owned rangelands are the largest block of land remaining from a land grant at statehood by the United States Congress. The Oregon State Land Board and the Department of State Lands (DSL) administer approximately 630,000 acres of state trust rangeland for grazing, which is located primarily in southeastern Oregon. In 1982 Oregon swapped state-owned trust lands with parcels belonging to the Bureau of Land Management (BLM). This trade formed units of rangeland that could be more efficiently managed by both DSL and BLM than many smaller, widely scattered parcels (Oregon DSL 2011c).

Oregon's grazing program is governed by the Administrative Rules of the State of Oregon, Chapter 141. In 2012 there are 142 total grazing leases on Oregon's trust land, including 44 on blocked parcels and 98 on isolated parcels.

The rangeland available for leasing generates about 62,000 AUMs (R. Wiest, personal communication 2012). In FY2010 grazing leases grossed approximately $400,000 in revenue for trust beneficiaries (WSLCA 2011).

Utah

On admittance to the Union in 1896, the Federal government granted some 7.4 million acres of trust lands to the State of Utah. As with other states, Utah's lands were to be managed to provide financial support to trust beneficiaries. Utah received four sections of trust land per township at statehood, whereas most western states received two sections per township. The twelve beneficiaries of Utah's trust lands include public schools, institutions of higher learning, and the Utah State Hospital (Utah SITLA 2009a).

About 3.5 million acres of surface trust lands and 4.4 million acres of mineral trust lands are managed by Utah's School and Institutional Trust Lands Administration (SITLA). SITLA's corporate structure was organized in the 1990s with the goal of generating revenue for the twelve beneficiaries. Utah's grazing lands are governed through Utah Rule R652-50, Range Management.

In 2011, approximately 3.2 million acres of Utah's surface trust lands were leased for grazing, on 1,359 permits. This acreage produced approximately 196,062 AUMs (R. Torgerson, personal communication 2012). In FY2009 grazing leases generated approximately $800,000 in gross revenues (Utah SITLA 2009a).

Washington

As in Montana, the Congressional Omnibus Enabling Act of 1889 granted certain trust lands to the State of Washington.[4] Today, more than 2.3 million acres, out of the more than 3 million acres granted at statehood, are retained by the State, whose Constitution states that the lands are to be held in trust for "all the people."[5] Washington's state trust lands are managed to generate revenue for beneficiaries including public schools and universities, prisons, state hospitals, and other state institutions (Resource Dimensions 2005). The Washington Department of Natural Resources (DNR) manages the state's trust lands, which include forest, agricultural, grazing, aquatic and commercial properties.

DNR's grazing program is authorized by the Revised Code of Washington 79.28 and is administered under rules of Chapter 332-20 of the Washington Administrative Code. Approximately 800,000 acres are available for grazing.

Washington has a unique two-tier structure which sets two separate fees for grazing lands; one fee is charged for grazing *leases*, and another for grazing *permits*.[6]

In 2011, over 486,600 acres available for grazing were leased on 834 leases, and over 317,000 acres were permitted on 43 permits. About 37,485 AUMs total were produced by Washington's state trust lands in 2011 (R. Roeder, personal communication 2012). Almost all state grazing lands are located in Eastern Washington, which is home to 95% of the state's livestock industry. Herd size varies from 100 to 2,000 head with larger herds typically found on higher elevation lands. In FY2011, over $650,000 in gross revenue was generated from grazing leases and permits (Washington DNR 2012).

[4] 25 Stat 676 §10 (February 22, 1889)

[5] Wash. Const. Art. XVI §1

[6] Grazing *leases* represent the majority of DNR grazing program acreage, and program revenues and expenditures. Lease lands are typically located on lowlands, have grazing as a primary purpose, and are subject to public bid at expiration. Grazing *permits* are generally on lands at higher elevations where timber is a primary use. These lands often abut federal grazing lands. Permit ranges were established in 1959, shortly after DNR was created. Permits are not subject to public bid at expiration; preference for retaining the permit holder unless DNR concludes that the permittee has not met program requirements. Grazing leases assign additional responsibilities to the lessee (such as stewardship of the rangeland), than grazing permits assign to the permittee; thus grazing lease fees are lower than grazing permit fees.

Wyoming

Wyoming's state trust lands were granted through various acts by the United States Congress to the State of Wyoming at statehood in 1890. Wyoming currently owns approximately 3.5 million surface acres and 3.9 million mineral acres of state trust lands. The revenues generated by Wyoming's trust lands and minerals are reserved for beneficiaries including public schools and certain other public institutions in Wyoming such as the Wyoming State Hospital and the Home for the Deaf. Approximately 86% of surface and mineral trust land acres are managed for the benefit of trust beneficiaries (Wyoming OSLI 2011a).

The Wyoming Office of State Lands and Investments (OSLI) administers the state's trust land holdings. OSLI's Real Estate Management Section in the Real Estate Management and Farm Loans Division manages the state's grazing program. The state's grazing program is administered under Wyoming Statute 36.

Of the 3.55 million acres available for lease in FY2010 over 3.49 million acres (98.3%) were leased for grazing, grossing nearly $5.25 million in revenue for trust beneficiaries (Wyoming OSLI 2011a). In 2011, about 900,000 AUMs were produced on 3,979 grazing leases (J. Van Hatten, personal communication 2012).

4.2 Grazing Fees

This section explains the grazing fee formulas used by each state. Explanations of the variables are presented below the formulas; as needed definitions are provided. All fee formulas are current as of June 2012. Table 4.1 (which follows the discussion of all states) presents a general comparison of the factors used by each state.

Idaho

IDL has used the following formula since 1993 to determine the state grazing fee per AUM:

$$IDFVI_t = -6.92 + (0.13 \times FVI_{t-2}) + (0.60 \times BCPI_{t-2}) - (0.33 \times PPI_{t-2}) + (0.74 \times IDFVI_{t-2})$$

IDFVI	Idaho forage value index
FVI	Forage value index in eleven western states
BCPI	Beef cattle price index for eleven western states
PPI	Index of prices paid by beef cattle producers nationally
t	Current time period

The forage value index (FVI), beef cattle price index (BCPI), and prices paid index (PPI) are the same indices used in determining the federal grazing fee on BLM lands (USDA-NASS 2012). The FVI is defined as the weighted average estimate of the annual rental charge per head per month for pasturing cattle on private rangelands in the 11 western states (Arizona, California, Colorado, Idaho, Montana, New Mexico, Nevada, Oregon, Utah, Washington and Wyoming), divided by $3.65 and multiplied by 100. The BCPI is defined as the weighted annual average annual selling price for beef cattle (excluding calves) in the 11 western states. The PPI is defined as the nine components selected from the United States Department of Agriculture - National Agricultural Statistics Service (USDA-NASS) Annual National Index of Prices Paid by Farmers for Goods and Services, adjusted by the weights indicated in parentheses to reflect livestock production costs in the western states: 1. Fuels and Energy (14.5); 2. Farm and Motor Supplies (12.0); 3. Autos and Trucks (4.5); 4. Tractors and Self-Propelled Machinery (4.5); 5. Other Machinery (12.0); 6. Building and Fencing Materials (14.5); 7. Interest (6.0); 8. Farm Wage Rates (14.0); 9. Farm Services (18.0) (Executive Order 12,548 1986).

Idaho Administrative Code 20.03.14.041 states that "*Notice of any increase will be provided in writing to the lessee at least one hundred eighty (180) days prior to the lease rental due date.*" As the next year's grazing fee (t) is typically calculated in March of each year, data from two years previous to the next year (t-2) are employed in the calculation of the Idaho FVI (IDFVI). For example, the IDFVI for next year (t), 2013, was calculated in March 2012, using indexed data for the year 2011 (t-2).

Once determined, the IDFVI is multiplied by a base value of 1.70 (established by the Idaho Land Board in 1993), to determine the state grazing fee:

$$IDL\ Fee_t = (IDFVI_{t-2})/100 \times 1.70$$

The lease rate per AUM for sheep may be reduced by 25% if the average lamb price for the preceding 12-month period is 70% or less than the price for calves that weigh less than 500 lbs. during the same period.

The 2011 grazing fee was $5.13 per AUM. Idaho had an average grazing fee over the study period of $5.47 per AUM (Table 4.2).

Grazing fee rates for Idaho's state trust lands are determined by the Idaho Land Board (IDAPA 20.03.14.040.01) (Idaho Administrative Code 2009). IDL uses the grazing fee formula approved by the Idaho Land Board to determine each year's grazing fee. However, there is no defined interval, such as every five years, in which the grazing fee formula must be reviewed and/or adjusted (N. Crescenti, personal communication 2012).

Montana

Administrative Rules of Montana 36.25.110 promulgates the grazing rate on state trust grazing lands in Montana. The fee formula is an index multiplied by an increasing factor.

The state grazing fee per AUM is defined as "*the weighted average price per pound of beef cattle on the farm in Montana as determined by the Montana Agricultural Statistics Service of the U.S. Department of Agriculture (USDA NASS) for the previous year, multiplied by 8.13 in calendar year 2012; 8.72 in calendar year 2013; 9.3 in calendar year 2014; 9.89 in calendar year 2015; and 10.48 in 2016 and all calendar years thereafter.*" (Montana DNRC 2011a, 2011b and 2011d).

Montana's 2011 grazing fee was $6.23 per AUM. Montana had an average grazing fee over the study period of $6.43 per AUM (Table 4.2).

The Montana Land Board establishes and modifies the grazing fee based on recommendations from DNRC and stakeholders, including industry and interested parties. By statute, Formula for fixing annual rental, §77-6-507(2) MCA, the minimum grazing rate for state land is set annually by multiplying the previous year's average price per pound of beef cattle in Montana by the multiplying factor established by the Board pursuant to §77-6-502 MCA. The most recent multiplier (7.54) set under 36.25.110(3) ARM was adopted in September 2001. There is no required period of time that establishes a deadline for review of the multiplying factor. However, to meet their fiduciary responsibilities to trust beneficiaries, the Board reviewed and subsequently approved the grazing rate changed on state land (Montana DNRC 2011e; Montana DNRC 2011f).

Oregon

DSL uses a crop share approach in determining the Oregon state grazing fee, which is derived by the following formula (Oregon DSL 2008, Oregon DSL 2009, and Oregon DSL 2011a):

G x CC x S x P = Rate per AUM

G	Calf weight gain per month (fixed at 35 lbs.)
CC	Marketable calf crop (fixed at 80%)
S	State share, fixed at 20% (in 2010), 22.5% (in 2011), and 25% (in 2012)
P	Average weighted calf price based on 90% of the USDA national price data indicating the average sales prices of calves for the preceding one-year period based on an October through September year

The Oregon Land Board sets rates for leases, easements, licenses and other forms of use authorization. These rates are to be reviewed every three years and adjusted where justified by market trends (OAR 141-110; Oregon Administrative Rules 2011). As 2012 is the final year of incremental adjustment agreed upon in 2009, rates are next eligible for review in 2015 (R. Wiest, personal communication 2012).

Oregon's 2011 grazing fee was $6.78 per AUM. Oregon's average grazing fee over the study period was $5.08 per AUM (Table 4.2).

Utah

Utah utilizes different fee rates for parcels arranged in a blocked pattern, or that are contiguous to other public or private grazing parcels, versus parcels that are scattered (i.e., that are not contiguous to other grazing parcels) (Utah SITLA 2009a). Both rates are based on an annually adjusted factor calculated from USDA-NASS-surveyed private land grazing fee rates from previous years, multiplied by a factor of 1.01681. This factor was derived through analysis of historic trends in private grazing lease rates in Utah (R. Torgerson, personal communication 2012). The state adds a flat, fixed $0.10 per AUM fee for weed and insect control.

$$\mathbf{UTFVI_t = 1.01681 \bullet UTFVI_{t-1}}$$

For example, the USDA-NASS survey yielded private land grazing fees in Utah of $13.00 per AUM in 2009 and $13.10 per AUM in 2010. The 2010/2011 state grazing fee for scattered parcels was $3.92. The 2011/2012 grazing fee is calculated as (R. Torgerson, personal communication 2012):

$UTFVI_t = 1.01681 \bullet (\$13.10)/(\$13.00)) = 1.01681 \bullet (1.0077) = 1.0246$

1.0246 • $3.92/AUM = $4.02/AUM

The scattered parcel fee for 2011/2012 is therefore $4.02 + $0.10, or $4.12/AUM.

Likewise, the 2010/2011 state grazing fee for blocked parcels was $6.90. The 2011/2012 grazing fee is calculated as:

$UTFVI_t$ = 1.01681 • (($13.10)/($13.00)) = 1.01681 • (1.0077) =1.0246

1.0246 • $6.90/AUM = $7.07/AUM

The blocked parcel fee for 2011/2012 is therefore $7.07 + $0.10, or $7.17/AUM.

Utah's 2011 grazing fee was $7.17 per AUM for blocked parcels and $4.12 for scattered parcels. Of the six states considered, Utah has the lowest average grazing fee (for scattered parcels) over the study period, $3.11 per AUM (Table 4.2).

SITLA's Board of Trustees modifies Utah's grazing fee formulas through discussion with industry leaders and stakeholders. Per Utah R652-50-500, the grazing fee is to be established by SITLA, and shall be reviewed annually and adjusted if appropriate. There is no statutory requirement as to how, or how often, any adjustments to Utah's grazing fee formulas should be examined and/or implemented.

Washington

Washington has two grazing fees, one for grazing leases, and one for grazing permits. As noted, grazing leases are usually found on lowlands, where grazing is typically the primary purpose. Grazing permits are located more often on highlands, where grazing is often a secondary use of the land to timber production.

The Washington DNR uses the following formula to determine the state grazing fee for grazing *permits* (Washington Administrative Code 1983):

(L x S x G x P + A) / (1 + LHT) = Rate per AUM

AUM Fee x Unit equivalent x M = AUM charge

L	Proportion of average stockman's investment assigned to land
S	Landlord's fair share of land income
G	Average pound gain in livestock weight for permitted grazing season (cattle and sheep to be separately computed)
P	Average past year's selling price of livestock per pound from the reports of the Agricultural Marketing Service (USDA)
LHT	The leasehold tax as established by law and administered by Washington Department of Revenue (i.e. 0.1284 in 2012)
M	Number of months in permitted grazing season (determined annually)
A	Permittee's share of assessments on permit range lands (applicable only to permits)
Unit equivalent	For example, the unit equivalent of one cow/calf pair is 1.0
AUM Fee	Fee charged per animal unit month of grazing

The grazing *lease* fee is calculated by deriving the five-year average of Washington's private grazing fees and reducing that average value by $2.00. This reduction is an adjustment to net forage value and accounts for a lessee's contribution to the leasehold which is not provided by the state, such as fencing, maintenance of the water supply, or noxious weed control (R. Roeder, personal communication 2012 and Washington Revised Code 2012). The $2.00 reduction was established in 1999 and is a flat, annual credit.

Washington's 2011 grazing lease fee was $9.24 per AUM, and its 2011 permit fee was $6.57. Washington has the highest average grazing lease fee over the study period, $8.15 per AUM (Table 4.2).

There is no statutory requirement as to how, or how often, any adjustments to Washington's grazing fee formula structure should be examined and/or implemented. However, Washington Administrative Code 322-20-220 states that "adjustments in the formula may be made by the department [DNR] as additional information or changing conditions require," (Washington Administrative Code 1983).

Wyoming

Wyoming's grazing fee is based on a five-year average of the Wyoming private land lease rate, multiplied by a five-year weighted average parity ratio for beef cattle per hundredweight (Resource Dimensions 2005). Weighting of the average parity ratio is accomplished by adjusting for changing resource conditions and market demand. A 20% reduction is then applied to reflect lessee contributions such as fencing or maintenance to

the leasehold (which are provided on private leases but not by the state) (J. Van Hatten, personal communication 2012).

The parity ratio, determined by the USDA-NASS (USDA-NASS 2011a), is adjusted in alignment with current industry viability. The formula for determining the grazing fee for Wyoming is:

$$Fee_t = \left(\frac{\sum_{i=1}^{5} PLLR_{t-i}}{5} + \sum_{i=1}^{5} W_{t-i} BPR_{t-i} \right) \times 0.80$$

Where:

Fee_t	Grazing fee in time period t (e.g. 2011)
$PLLR_{t-i}$	Private land lease rate for Wyoming in period t - i
BPR_{t-i}	Parity ratio for beef per hundred weight (100 lbs.) in period t – i
W_i	Weight given to the BPR in period i
t	Current time period
0.80	Reflects 20% fee reduction to account for contributions made by lessee

The 2011 grazing fee was $4.64 per AUM. Wyoming has the second-lowest average grazing fee over the study period at $4.53 per AUM (Table 4.2). Wyoming has not revised its grazing fee formula since 2000 (Resource Dimensions 2005). There is no statutory requirement as to how, or how often, any adjustments to Wyoming's grazing fee formula should be examined and/or implemented.

Table 4.1 provides a brief description of formula elements by state. Permit and lease fee rates for the six states from 2001 to 2011 are shown in Table 4.2.

Table 4.1 Comparison of Fee Formulas, by State

Formula Element	ID	MT	OR	UT	WA (lease)	WA (permit)	WY
Based on private range fee	Yes	Yes	No	Yes	Yes	No	Yes
Considers price of selling livestock	Yes	Yes	Yes	No	Yes	Yes	Yes
Other factors	Accounts for operating costs. Land Board establishes the *base value* .	November 2011 promulgated multiplier accounts for noxious weed control expenses incurred by lessee.	Based on animal gain in weight per month; marketable calf crop; and a proportionate share of state interest.	Differing rates for large blocks and scattered sections. A $0.10 fee is added for noxious weed and insect control services.	Derived by reducing the 5-year average of private AUM fees by a factor of $2.00 to account for lessee contribution of services.	Based on investment to land; state's fair share of income; animal weight gain for season; leasehold tax; and number of months in permitted season.	20% downward adjustment reflects lessee contributions typically provided as a part of private land grazing lease rate.

Table 4.2 State Lease/Permit Rates, 2001 - 2011

Year	ID	MT	OR	UT[1]	UT[2]	WA[3]	WA[4]	WY
2001	$4.95	$5.55	$4.36	$2.10	$2.10	$7.32	$5.33	$3.68
2002	$4.96	$6.20	$4.52	$2.10	$2.10	$7.40	$5.28	$3.83
2003	$5.33	$5.77	$4.16	$2.10	$2.10	$7.52	$5.25	$4.04
2004	$5.15	$5.48	$4.32	$2.35	$2.35	$7.76	$5.41	$4.13
2005	$5.53	$6.64	$5.03	$5.00	$2.85	$7.92	$6.31	$4.42
2006	$6.03	$6.99	$5.60	$5.40	$3.20	$8.08	$6.86	$4.78
2007	$5.95	$7.87	$5.80	$5.80	$3.55	$8.18	$6.38	$5.17
2008	$6.01	$6.94	$5.06	$6.20	$3.90	$8.68	$5.92	$5.21
2009	$5.99	$6.97	$4.90	$6.60	$3.96	$8.74	$5.25	$5.13
2010	$5.12	$6.12	$5.30	$7.00	$4.02	$8.78	$5.25	$4.85
2011	$5.13	$6.23	$6.78	$7.17	$4.12	$9.24	$6.57	$4.64
Average	$5.47	$6.43	$5.08	$4.71	$3.11	$8.15	$5.80	$4.53
Std Dev	0.447	0.727	0.776	2.118	0.843	0.638	0.623	0.551

Source: Compiled by Resource Dimensions from historical records obtained from respective states, FY2001 – FY2011; (Bioeconomics 2011); (Oregon DSL 2011b); (J. Van Hatten, personal communication); (R. Torgerson, personal communication); (R. Roeder, personal communication).

[1] Utah (blocked); [2] Utah (scattered); [3] Washington (lease); [4] Washington (permit)

4.3 Lease Overview

Leasing characteristics for Idaho and the five comparative state programs are reviewed below.

Idaho

The maximum term of a state grazing lease is 20 years, which was lengthened from 10 years in 2011. In 2011 Idaho had 1,176 leases on 1,764,301 acres leased for grazing (N. Crescenti, personal communication 2012). Any person (or entity) may submit an application to lease Idaho's endowment land provided they are eighteen years of age and are not indebted to the state. To be eligible for a grazing lease, an applicant must certify they will use the lease for domestic livestock grazing. Noxious weed control is not provided by IDL.

Prior to issuing a grazing lease, the lessee and IDL must agree to management provisions that meets resource objectives for the leased tract. These management provisions include the season of use for grazing, the number of stocked AUMs (determined mainly by examining forage productivity and suitability), livestock type, and any necessary specifics and are physically part of the lease term agreement. Site visits by IDL to monitor the leasehold and allotment management plan typically occur annually. Non-use of a grazing lease is allowed at the request of the lessee, and is subject to IDL approval. Non-use is often limited to five years during the lease term. Subleasing is allowed with approval, and the state receives one-half of

any payment greater than the lessee's fee. As grazing leases are not considered exclusive use leases, public access to the lease is required, unless restriction is granted by IDL (N. Crescenti, personal communication 2012). Range improvements are allowed with approval by IDL, and the lessee is reimbursed the creditable value of the improvement upon lease transfer.

On expiration of grazing leases in Idaho, the current lessee must apply for continuance of the lease; no management proposal is required unless the lessee intends to modify their management. IDL has a competitive leasing process where no preferential rights are given to the existing lessee. New grazing lease applications must include a grazing management proposal that addresses any resource concerns for the lease. If multiple applications are received for the same lease, the department conducts an oral conflict auction, where the lease will be awarded to the highest bidder. The overwhelming majority of grazing leases are awarded without a competitive bid. IDL has recently worked to streamline conflict auction procedures in an effort to improve program returns and efficacy.

Montana

State trust land grazing lease terms in Montana are for a maximum 10-year period. In 2011 Montana had 8,200 leases on 4,070,000 acres leased for grazing. A lease applicant must be eligible to own property in the state, but does not need to run livestock on the lease (K. Chappell, personal communication 2012). To set-aside a section of a lease for non-use, the nominated tract of land must be set-aside for the entire or remaining portion of a lease term. Beginning in 2013, the annual rental rate charged for grazing acres in non-use status will be one-half the rental rate. A lessee is compensated upon transfer of a leasehold for any range improvements added by the lessee. Grazing is not an exclusive use of a parcel in Montana (Montana Administrative Rules 2011).

State range managers employ Natural Resources Conservation Service (NRCS) range guidelines to establish carrying capacity by examining factors such as land cover, soils, precipitation and area. Historic records are also utilized as a factor to set carrying capacity. All leases are inspected the year prior to lease expiration to calculate carrying capacity for the new lease term (K. Chappell, personal communication 2012). Range management concerns are addressed at that juncture. Subleasing is allowed with approval by the state. Lessees are to allow public recreational access to a lease unless the state approves restriction of access to prevent disruption of livestock activities. Noxious weed control is not provided by the state. However, applying discounts for the provision of weed control, fencing, etc. by lessees was considered and incorporated by the Montana Board of Land Commissioners in 2011 when determining the multiplying factor used in the grazing fee formula (Montana DNRC 2011b).

Montana's grazing leases are allocated through competitive sealed bidding. Montana statute reflects that the retention of stable, long-term lessees inherently increases the productivity of the land and improves its management. As such, current lessees are provided the right of preference to meet a high bid and retain the leasehold. Most renewed leases are leased at the state's minimum AUM rate. If the current lessee believes that any competing bids are excessively high, they can request a hearing to voice their opinion for why the competing bid is not in the state's best interest.

Montana's state grazing leases are often scattered as inholdings between private and other public lands. This usually serves to dampen demand due to inefficiencies in access, etc. In 2011 the State reported that only about 5% of grazing leases had received competing bids.

Oregon

In Oregon grazing leases are valid for a maximum term of 15 years. Non-use of land tracts may be established in the lease's Range Management Plan. All improvements to a lease become State property at the conclusion of the lease term. Lessees may sub-lease all or part of their leasehold, or may transfer a lease to another party. If subleasing, the lessee must pay an additional 50% of the annual lease rental payment to the state. The carrying capacity of the leasehold may be reevaluated periodically based on professional judgment of state rangeland managers, using techniques such as ocular reconnaissance and examining historic records (R. Wiest, personal communication 2012).

Access to the leases for public recreation is to be allowed, and permission of the lessee is not required. Noxious weed control is not provided by the state.

Oregon does not employ competitive bidding for an expiring lease as long as the current lessee abides by the terms and conditions of the lease contract for the duration of the lease (Oregon Administrative Rules 2011). If a lease becomes available due to default, or the current lessee decides not to renew the lease, or previously non-leased land is offered, a new lessee will be selected through a number of criteria if multiple competing bids are offered (OAR 141-110-0040). Leasing preference will be given to applicants owning or controlling adjacent land, the willingness of the applicant to execute land management duties, and additional factors which may include any bonus bids. Preference is given to applicants who are current lessees in good standing and landowners engaged in the livestock business who intend to use the lease for livestock grazing.

Utah

Utah allows a maximum permit term of 15 years. Any person may submit an application to lease state grazing land provided they are qualified to do business in Utah. Non-use of

grazing parcels is granted for a maximum of one year. The state may participate in cost-sharing or maintenance of range improvements. Grazing permittees must allow public access to the leased parcels. In 2011 Utah had 1,359 permits totaling 196,032 AUMs on 3,200,000 acres permitted for grazing (R. Torgerson, personal communication 2012).

One unique feature of Utah's grazing program is that the state commits up to 10% of total annual grazing proceeds for qualifying range improvement projects. Utah charges a $0.10 fee per AUM for noxious weed and insect control efforts on all leases.

Utah allows subleasing of all permits. A 50/50 split of revenues to SITLA and the lessee can be derived from subleased permits.

For tracts with an expiring grazing permit competing applications may be submitted. In the absence of competing bids, the current permit holder has the right to renew the permit by submitting required paperwork and fees (Utah Administrative Code 2011 and 2012). Competing applications also must contain the requisite paperwork and fees, plus a one-time 'bonus bid', which is additional to the permit cost. Existing permit holders retain preference to lease a tract of grazing land if they pay an amount equal to the highest competing lease application. Utah does not employ an auction process to lease land for grazing.

Washington

The maximum length of grazing leases or permits is the same at 10 years, both require grazing and both are transferable. To qualify for a grazing lease or grazing permit, applicants must certify that they will use the lease for domestic livestock grazing. Applicants must have a base ranch, or a place to have livestock before and after the state grazing lands are available for the season (Washington Administrative Code 1983). In 2011 Washington had 834 leases on 486,800 acres leased for grazing, and 43 permits on 317,000 acres permitted for grazing.

When a lease or permit expires or ends, all improvements, unless otherwise agreed to under the terms of the lease become state property. DNR may require, at a lessee's or permittee's expense, that improvements be removed at the end of the lease term. Portions of a grazing parcel can be left ungrazed to protect habitat or improve land condition.

Subleasing is not allowed for grazing permits; however subleasing is allowed on leases with approval. The state does not require a separate fee for subleasing. Allowing public access for low impact activities is required. Noxious weed control is not provided on either leases or permits by the state (R. Roeder, personal communication 2012).

Grazing leases constitute the majority of acreage used in the State's grazing program, and as a result generate the majority of revenues and expenditures. Generally, more rights are transferred to a holder of a grazing lease than to a holder of a grazing permit. Thus, fees and land management responsibilities differ between grazing leases and grazing permits.

State grazing permits are not subject to public bid at expiration – instead the current permittee holds preference to retain the permit unless the State concludes that they have not met resource or program requirements (Washington DNR 2011). Grazing permits can also be acquired by holding a temporary grazing permit for at least five years, as a gift, or through purchase or inheritance, depending on approval.

The state has the option of negotiating renewal of an expiring lease with the existing lessee. Grazing leases are subject to public auction upon expiration of the lease term or when a new lease is offered. Expiring leases are publicly advertised 180 days prior to the end of the lease term. For 30 days after the advertisement date, interested parties may offer 'bonus bids' on the lease. These are to include the proposed plan of operation; evidence of the required minimum financial and managerial qualifications of the bidder, a cash bonus bid, and a $100 deposit. If a bonus bid is determined to offer the most benefit to the trust (often the highest bid), the existing lessee may match that bid, and upon agreement of the lease terms the existing lessee is awarded the lease. If the existing lessee does not match the bonus bid, or does not agree with the state on lease terms, the current lease expires. The lease will then be offered at public auction (Washington DNR 2011). Grazing leases may also be assigned by transfer from the current lessee to another entity, contingent on approval.

Wyoming

Wyoming's lease applicant qualifications allow that any person who has reached the age of majority, is a citizen of the United States, and has been authorized to transact business in Wyoming is eligible to lease state lands. The applicant does not need to be in the livestock business and does not have to graze livestock on the lease. The typical term of a grazing lease in Wyoming is 10 years. In 2011 the state had 3,979 leases on 3,464,403 leased acres (J. Van Hatten, personal communication 2012).

Lessees retain the right to construct or make improvements on the lease. Each grazing lease is rated for carrying capacity by the state and the lessee is charged accordingly. Lessees determine season of use and class of livestock that will graze the lease; they are also authorized to adjust the actual stocking rate depending upon range conditions (J. Van Hatten, personal communication). State personnel inspect leases randomly and whenever problems are reported, but ordinarily are not able to visit leases on a regularly scheduled

basis. As a result, the state provides minimal, if any, services such as noxious weed control on the typical lease (Wyoming Legislative Service Office 2012).

Lessees are not required to allow public access, such as for recreation, to their leasehold. Non-use of a portion of a lease is allowed if it is part of a grazing rotation (J. Van Hatten, personal communication 2012). Lessees may enter into a sublease agreement with approval. The subleasing agreements require the lessee to pay 50% of the rental above the normal lease rate to the state.

When vacant leases are leased, preference is given to Wyoming residents as well as to persons or entities authorized to transact business in Wyoming and that have a use for the land, and to occupants of adjoining lands. Annual rental payments offered must be at least equal to Wyoming's state land grazing fee. Interested parties can submit a lease application for expired leases, with a bid on the grazing fee they are willing to pay over the life of the lease. If two or more individuals apply for the same lease, the current lessee is given preferential right to match the bid on the conflicting lease application. If there are no conflicting bids, the present lessee pays the state-determined grazing fee.

The summary tables in section 4.5 compare the six states' grazing lands program fees and general statistics, features, and characteristics.

4.4 Overview of State Grazing Program Management

Idaho

The State Board of Land Commissioners is comprised of the Governor, Secretary of State, Attorney General, State Controller and Superintendent of Public Instruction. The Director of IDL serves as the secretary to the board, with the Department carrying out the executive directives.

While trust lands designated for grazing typically are leased for livestock grazing, some leases located within the boundaries of Idaho Department of Fish and Game (IDFG) management areas are leased to the IDFG for wildlife use. IDFG pays a fee 1.5 times the grazing rate for the lease. IDL reserves the right to have livestock graze the area to meet its resource goals for the lease. IDFG have also used livestock on these leases to manipulate forage for optimal wildlife usage and charge a separate fee for lands within their management area.

Some leases are also authorized for outfitters and guide camps, or communication sites. A limited amount of trust lands are used for both grazing and timber harvesting.

Most grazing leases are open to the general public for recreation. While IDL is under a mandate to manage for long-term productivity of the land and a Constitutional provision to maximize long-term financial returns to the beneficiary institutions, they do not reserve forage for wildlife or aesthetic purposes.

Montana

The Montana State Board of Land Commissioners, comprised of the Governor, Attorney General, Superintendent of Public Instruction, Commissioner of Securities and Insurance, and Secretary of State directs the Montana DNRC, Trust Land Management Division in management of state trust lands (Montana DNRC 2010).

It is the obligation of DNRC to obtain the greatest benefit for school trust land; however the greatest monetary return is to be weighed against the long-term productivity of the land to ensure continued future revenues (Montana DNRC 2010). One way that this goal is encouraged is to reduce the fee for acres which are in non-use status.

In Montana, as in Idaho, lessees are compensated for range improvements they installed upon transfer of the lease. Public access for recreation is also to be allowed (K. Chappell, personal communication 2012). Wildlife conservation licenses, general and special recreational use licenses are also sold on surface trust lands to generate revenue (totaling about $1.1 million in FY2010).

Oregon

The Oregon State Land Board is comprised of the Governor, Secretary of State, and State Treasurer. DSL is the administrative agency of the Land Board. Oregon's Constitution specifies that the Land Board *"shall manage lands under its jurisdiction with the object of obtaining the greatest benefit for the people of this state, consistent with the conservation of this resource under sound techniques of land management."*

DSL manages its rangeland parcels through the use of rangeland management plans. These plans are developed by DSL staff in consultation with the lessee and other interested parties such as the Oregon Department of Agriculture, Oregon Natural Desert Association, and the Oregon Department of Fish and Wildlife. The rangeland management plans contain, among other things, grazing schedules by pasture, specific management objectives for the leasehold, and describe lessee flexibility during annual plan operation.

The Land Board and DSL encourage lessees to make improvements to state land, consistent with lease purposes. Parties proposing improvements must receive departmental authorization before making the improvement, and must agree to maintain the

improvement for the length of the lease. All improvements to the leasehold become property of the state.

Utah

Utah's trust land administration was reorganized in the 1990s in the mold of a corporation. A seven-member Board of Trustees, composed of some of Utah's most successful business and mining citizens, directs SITLA, which is administrated by a chief executive officer. The Governor appoints six members of the Board for six-year terms. The members come from a list of nominees supplied by an 11-member nominating committee, which is comprised of public school and higher education representatives. The seventh member is appointed at large by the Governor.

State trust lands are administered for the exclusive benefit of the trust beneficiaries. Utah Code 53C-1-102(2)(b) explains that as a trustee of state trust lands *"the state must manage the lands and revenues generated from the lands in the prudent and profitable manner possible, and not for any other purpose inconsistent with the best interests of the trust beneficiaries."*

In the past three years Utah has adjusted its grazing fee formula which has resulted in a doubling of revenue raised from leasing for grazing. Utah is currently exploring complementary activities to grazing, including implementing hunting leases.

Washington

The Washington Board of Natural Resources sets policies to guide how the DNR manages state trust lands. The Board is chaired by the Commissioner of Public Lands, and the other members are the Governor, Superintendent of Public Instruction, a County commissioner from a county with state forest trust lands, the Director of the School of Environmental and Forest Sciences at the University of Washington, and the Dean of the College of Agriculture, Human and Natural Resource Sciences at Washington State University (Washington DNR 2010).

The general goal for managing state-owned rangelands is to provide maximum use of the range resource consistent with the principles of multiple use and proper land conservation measures. Together with this objective, DNR also seeks to:

1. Secure the highest return to the state under good management practices.
2. Perpetuate the natural resources on both state and related lands through wise use, protection, and development.

3. Provide the best practical, social, and economic correlation of the use of state lands with adjacent lands.
4. Stabilize that part of the livestock industry which makes use of state land through administrative policy and management practices that conform to requirements of practical operation.

The Multiple Use Act (RCW 79.68) instructs DNR to provide simultaneous multiple uses of trust lands when in the best interest of the state and general welfare of citizens.

Under H.B. 1309, the Ecosystem Standards for State Owned Agricultural and Grazing Land (1994), DNR is required to pursue its duties to maintain the resource value of the land and promote its long-term capacity to generate revenue. The ecosystem standards sets forth goals intended to maintain and restore fish and wildlife habitat by improving the ecosystem health on agricultural land, rangeland, and grazeable woodland managed by DNR and the Washington Department of Fish and Wildlife. The ecosystem standards are goals that the land manager should work towards to achieve the desired ecological condition as defined under the standard. The goal of the legislature in developing H.B. 1309 was to develop a bill that both users of state rangelands and environmentalists could support, as well as to substantively respond to the need to initiate habitat protection. DNR has implemented asset management strategies to shape its approach to fulfilling the ecosystem mandates of RCW 79.01.295 and 70.13.610 et seq.

Wyoming

Wyoming's trust lands are governed by the Board of Land Commissioners, which is composed of the Governor, Secretary of State, State Auditor, State Treasurer, and the Superintendent of Public Instruction. OSLI is the administrative agency of the Land Board (Wyoming OSLI 2011a).

As in most states, Wyoming is mandated to manage the assets and resources of the state and the trust in a manner that will satisfy the traditional trust principles of (1) long-term growth in value, and (2) optimum, sustainable revenue production.

Despite the sizable land grant, only broad management guidelines were established, leaving substantial management discretion to the state. This management responsibility was endowed by Article 18, §3 of the Constitution of the State of Wyoming to the Board of Land Commissioners.

Wyoming trust lands have vast potential for mineral and oil and gas production and revenues. The state has also diversified into leasing for wind energy production in order to

balance renewable and non-renewable revenue sources. In this respect, there exists significant potential for complementary leasing of these uses with livestock grazing.

4.5 Summary Tables

The following summary Tables 4.3, 4.4 and 4.5 summarize the general characteristics, attributes, and mechanics of grazing program and policies implemented in Idaho, Montana, Oregon, Utah, Washington and Wyoming.

Table 4.3 State Grazing Program Fees and General Statistics, 2011

State	Acres (2011)	Number of Leases & Permits (2011)	$/AUM (2011)	Fee Structure
Idaho	1,764,301	1,176 leases; 256,886 AUMs	$5.13	A formula based on livestock market factors such as forage value, price received and private lease rate. Open bid for lease preference.
Montana	4,070,000	8,200 leases (5,200 lessees); 975,766 AUMs	$6.23	Revised November 2011; formula based on weighted average price per pound of beef cattle on the farm in Montana for the previous year, multiplied by 8.13 in 2012, 8.72 in 2013, 9.3 in 2014, 9.89 in 2015, and 10.48 in 2016 and all years thereafter.
Oregon	630,000	142 forage leases 98 isolated parcels 44 block parcels 62,000 AUMs total	$6.78	Uses a crop share approach in determining the rent due for grazing rangeland.
Utah	3,200,000	1,359 permits 196,032 AUMs	Scattered - $4.12; Blocked - $7.17	Differing permit rates for block lands and scattered sections. Both permit rates are based on an indexed rate of NASS private land grazing fees in Utah from previous years, multiplied by a factor of 1.01681, plus $0.10/AUM for weed/insect control.
Washington	Leases - 486,800 Permits - 317,000	834 leases; forage utilization is guidance for carrying capacity for leases. 43 permits; 37,485 AUMs	Lease - $9.24 Permit (cattle) $6.57	Washington has separate fee formulas for grazing permits and grazing leases. The grazing permit formula is based on livestock market factors and other factors such as landlord's share of land income, permit holder share of land assessment, and leaseholder improvements. Grazing lease fees are based on a five-year rolling average of private lease fees, less $2.00/AUM for lessee's contribution to land management.
Wyoming	3,464,403	3,979 leases; 900,000 AUMs	4.64	Formula based on a 5-year average of the private land lease rate in Wyoming, times the 5-year weighted average "parity ratio" for beef cattle per hundredweight, less 20% to reflect leaseholder contributions. The "parity ratio" is determined by USDA-NASS and adjusts the fee to current industry viability.

Source: Compiled by Resource Dimensions from miscellaneous data resources obtained from respective states.

Table 4.4 State Grazing Program Features

State	Permit holder/Leaseholder Requirements	Nonuse	Range Improvements	AUM Limits, Reductions, Monitoring
Idaho	Any person may submit an application to lease state owned endowment land provided they are eighteen and are not indebted to the state of Idaho. To be eligible for a grazing lease, an applicant must certify they will use the lease for domestic livestock grazing.	Non-use allowed at request of lessee; annual rental payments for non-use lowered to minimum rental payment ($50). Non-use is often limited to 5 years during term of lease. Must be approved by IDL.	Allowed with approval; leaseholder is reimbursed creditable value upon transfer.	Two years prior to expiration of 20 year grazing leases, State reviews to address any resource management concerns. Most lease renewed with existing lessees, so management plans carried forward with modifications at lessee's request or through specific resource concerns.
Montana	To become a lessee, an applicant must be 18 years old or a head of a household, or otherwise be able to own property in the state. Livestock does not need to be run on a lease.	To qualify for non-use, the nomination of a tract of land must be for the entire or remaining portion of a lease term, and the grazing lands must be intermingled with agricultural acres in the tract or that possess characteristics prohibiting livestock use. Beginning in 2013 the annual rental rate charged for grazing acres in non-use status will be one-half the minimum rental rate.	Allowed with approval; lessee is compensated upon transfer.	NRCS range guides used to establish carrying capacity through factors such as plant species composition, soils, precipitation and area. Leases inspected the year prior to lease expiration to calculate carrying capacity for new term. Any management concerns are addressed at that juncture.
Oregon	Applicants must be at least 18 years old and must be able to fully meet all terms and conditions of the lease, including applicable portions of the Leasehold Management Plan.	May allow non-use established in a Leasehold Management Plan, otherwise not. Lessee does not receive fee reduction for non-use; however fee may be lessened for fire damage.	Allowed per authorization; all improvements to the leasehold become property of the State.	Carrying capacity determined by professional judgment; AUMs reevaluated periodically. Leasehold may be inspected at anytime or to conduct noxious weed control by State.

Table 4.4 State Grazing Program Features (continued)

State	Permit holder/Leaseholder Requirements	Nonuse	Range Improvements	AUM Limits, Reductions, Monitoring
Utah	Any person may submit an application to lease state owned endowment land provided they are qualified to do business in Utah and are not in default to the State or the Trust Lands Administration.	The granting of non-use is at the State's discretion; any fees for lands in non-use are not refunded nor waived, but applied to the next year. Non-use is granted for a maximum of one year.	Improvement projects must be authorized prior to beginning construction. Range improvement projects will be depreciated consistent with schedules published by USDA. Permittee must pay for any increase in AUMs annually. The State may participate in cost-sharing or maintenance of improvements.	Grazing capacity determined professionally after consideration of historical stocking rates, forage utilization, range condition, trend and climatic conditions.
Washington	Applicant must be 18 years of age and have two years' experience in range management or animal husbandry and financial resources to carry out the proposed grazing operation.	Non-use not allowed for grazing permits. Temporarily allowed for grazing leases, depending upon certain conditions and with State approval.	Agreements must be made with State in connection with the construction of range improvements that address ownership of the improvements and its disposition at the end of the permit term. Grazing permit fees may be adjusted to compensate permit holders for the construction of range improvements or performance of range conservation practices where prior written approval has been given.	Carrying capacity determined through professional judgment of range managers (in terms of historic stocking rates, forage utilization, range condition and trend). Reductions: if lease, reductions are determined by leaseholder; if permit, State may adjust AUMs based on professional judgment. Permits are monitored annually. Leases are monitored at least every five years, up to monthly if resource issues/concerns are present. February 2012 update that policy may be updated to reflect current science.

Table 4.4 State Grazing Program Features (continued)

State	Permit holder/Leaseholder Requirements	Nonuse	Range Improvements	AUM Limits, Reductions, Monitoring
Wyoming	Applicant must have reached the age of majority, is a citizen of the United States, and comply with the laws of the state. Must be authorized to transact business in Wyoming. The lessee must show that there is actual and necessary use of the land, and that there is available forage, in order to obtain or keep a grazing lease.	Non-use is permissible if it is part of a grazing rotation for a period of time.	Approval required for costs more than $2,000 per section. Leaseholder owns and is compensated by the new lessee on transfer. State owns improvements if lease is canceled, or is not renewed and the improvements were not removed in accordance with rules.	Carrying capacity determined by using the Ocular Reconnaissance Method. Historic stocking rates, forage use, range condition and trend factored into calculation of carrying capacity.

Table 4.5 Other Characteristics of State Grazing Programs

State	Subleasing	Water Rights	Wildlife	Riparian	Public Access	Advisory Boards
Idaho	Allowed with approval; lessee controlled herd stock does not require sublease approval.	State holds title.	No formal allowance; requirements for habitat management specific to individual leases generally are tied to federal restrictions on intermingled landscapes. Any specific concerns addressed in individual grazing management plans.	Riparian concerns are addressed on a case-by-case basis through grazing management plans.	Grazing leases not considered exclusive use leases; use of state lands shall not be restricted without approval.	None
Montana	Allowed with approval.	State holds title; lessee compensated for improvements associated with the water right.	Habitat issues addressed on an individual basis as they arise. No specific allowance for wildlife.	Riparian area management addressed on an individual case basis through site specific stipulations or through lease management plan.	Lawful recreational access is allowed unless State approves restriction of access to prevent disruption of livestock activities, etc.	None
Oregon	Allowed with approval; lessee must pay an additional amount equal to 50 percent of the annual lease rental payment for those AUMs approved in the sublease agreement.	State holds title.	Relationship of livestock grazing to wildlife and fish habitat is considered in Leasehold Management Plans.	Overall, riparian areas in good shape. Fencing or watering changes applied according to protect suitability of resources.	No restrictions on other uses such as recreation, except no commercial uses allowed. Permission of leaseholder not required.	Grazing Fee Advisory Committee concluded work in November 2008. 2012 is final year of incremental adjustment, and may reconvene in 2015.

Table 4.5 Other Characteristics of State Grazing Programs (continued)

State	Subleasing	Water Rights	Wildlife	Riparian	Public Access	Advisory Boards
Utah	Allowed if approved; 50/50 revenue sharing program for all subleased grazing permits (block and scattered parcels). State may assess a $1.00 fee per AUM subleased if no profits are made in the sublease.	State holds title.	Allotment management plans make no specific reference to wildlife carrying capacity; however increasing interest in wildlife population management. Some areas set aside for threatened plant and animal species.	Riparian areas (usually found on high mountain blocks) managed through forage utilization standards and herding livestock away from riparian areas. Not aggressive management of riparian areas for most lands.	Permits must allow public access. Special Use Leases can control public access, but high yearly fee (based on per acre value) that allows leaseholder complete use of parcel. Grazing permits can be canceled for higher or better use with 30 days notice.	SITLA does not use a grazing advisory board; however, the Utah Department of Agriculture and Food does.
Washington	If lease, allowed with approval and State does not share in revenues (State already charges fair market value). Subleasing not allowed for grazing permits.	State holds title in most cases.	Taken into account when determining carrying capacity, but no specific amount or percentage must be set aside.	Riparian provisions may be included in Resource Management Plans for each lease or permit. Not regulatory at present, emphasizing partnerships. Landowners receive annual rental, incentive, maintenance and cost share payments. February 2012 - updating ecological standards for grazing lands.	Multiple use access required for low impact activities, unless lessee or permittee receives written approval from State to restrict access to a specific need.	Advisory boards are authorized. First use began in late 1990s. DNR includes participation and cooperation with various groups of permit holders including livestock associations (i.e., Cattlemen's Assn.) and advisory boards without associations (i.e., WA State Rangeland Committee) representing range users of state land.
Wyoming	Allowed if approved; State gets 50% of excess rental (rents above the state lease fee).	State holds title.	A 2% across the board adjustment is made for wildlife consumption. It is note considered in individual grazing management plans. No requirement for a percentage of a lease to be set aside for habitat conservation.	Managed through proper grazing practices. Areas of concern handled on an individual basis.	Lessee not required to allow public access to the leasehold.	State Grazing Board is comprised of several local grazing boards. It more so deals with BLM lands than state lands.

4.6 Trends in State Grazing Fees

This section presents trends in state grazing fees over the study period.

Table 4.6 presents annual grazing fee rates trends of the six states and the 11-Western state average as reported by USDA-NASS for the study period. Figure 4.1 presents the trends in state grazing fees between 2001 and 2011.[7] As indicated, Idaho had the lowest average annual percent increase for the study period at 0.4% (Figure 4.2). Average annual increase was computed as the annual interest rate that makes the 2001 value grow to the 2011 value using the standard future value formula.

Figure 4.1 shows the differences in average annual increase in grazing fees between Idaho and all other states over the study period. As a comparison to private grazing rates, USDA-NASS-reported nominal lease rates for non-irrigated grazing lands increased by 2.7% over the 2001-2011 study period (Table 4.6).

Figure 4.2 shows the differences in average annual increase in grazing fees between Idaho and all other states over the study period. Oregon, Washington and Wyoming have not refined their state grazing fee formulas over the study period. Oregon's state grazing fee has outpaced Idaho's by 11 times, over the study period, whereas Washington's state grazing lease fee has outpaced Idaho's by 6 times, and Wyoming's by 5.7 times.

Table 4.6 Comparison of State Grazing Fees on Trust Lands, 2001 - 2011

	ID	MT	OR	UT (blocked)	UT (scattered)	WA (lease)	WA (permit)	WY	11 Western States
Average Annual Increase	0.4%	1.2%	4.5%	13.1%	7.0%	2.4%	2.1%	2.3%	2.7%

[7] Note that Utah recently revised its grazing fee system, and Montana will be instituting changes to its grazing fee system over the next few years.

Figure 4.1 State Program Grazing Fee Trends, Dollars per AUM, 2001 - 2011

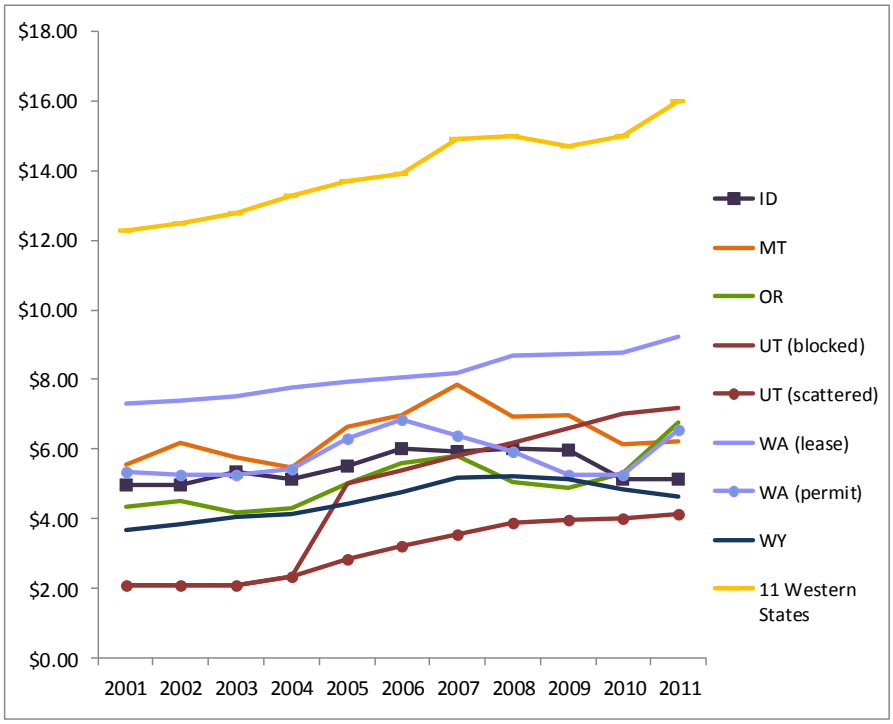
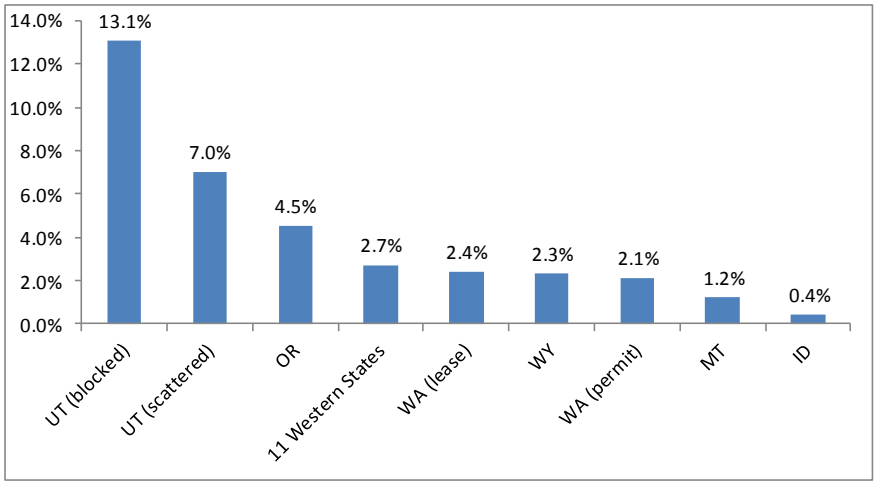


Figure 4.2 Average Annual Increase in State Trust Lands Grazing Fees, 2001 - 2011



5 – Idaho Grazing Trends, Demand and Opportunities

5.1 Overview

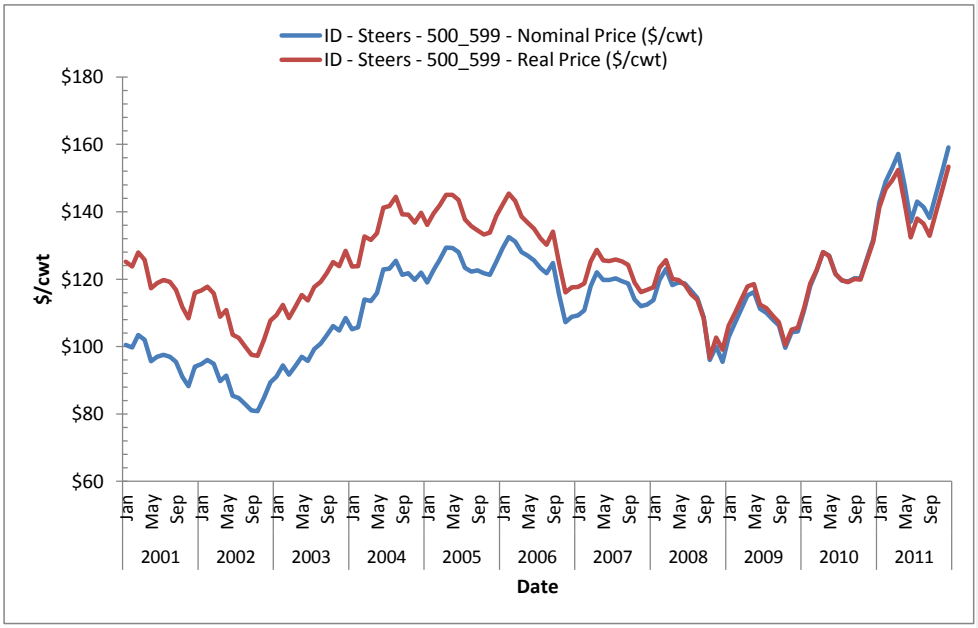
In this section we review trends in livestock production and market prices in Idaho over the 2001-2011 study period. We also review private land lease rate data reported by USDA-NASS for the western states.

5.2 Livestock Production and Market Trends

Trends in Livestock Prices and Production Costs

Beef prices are at near record levels with the national beef cow inventory at its lowest level since the 1950s. Real beef prices have not been at these prices since 1991. As shown in Figure 5.1, the average price of a 500 lbs. steer calf in Idaho during December 2011 was $160/cwt (CattleFax 2011). This amount is a 52% increase in the price received from just two years earlier. Beef price trend analysis by livestock marketing experts at the Livestock Marketing Information Center (LMIC 2011) project that because the U.S. beef herd has shrunk, and with fewer heifers held for replacement, the total number of beef cows will continue to remain relatively low. With low cattle numbers, and because high grain prices have reduced forage production in Mid-Western states, relatively high cattle prices are expected to continue for the next few years. Other factors contributing to expectations of a continued favorable price situation include a strong export demand for beef and byproducts, and tight domestic supplies of competing meats and poultry. Consumer beef demand has improved slightly but remains below pre-recession (i.e. 2008) levels. Increasing exports have offset lower domestic beef consumption per person (LMIC 2011).

Figure 5.1 Average Monthly Price 500 lbs Steer Calves sold at Idaho Markets, 2001 – 2011



Source: CattleFax (2011)

Sheep producers have also recently seen a major improvement in product prices. Lamb prices increased by 62% during 2010, from $96/cwt to $157/cwt, (Figure 5.2). Wool prices increased 43% over the same period (Figure 5.3). Projections are that the unprecedented price gains are certain to spark a supply response. While the sheep industry faces many challenges, including higher corn prices, tighter credit, increased predation, and increasing labor issues, the record-high prices are anticipated to mean substantial inventory gains by 2015 (American Sheep Industry Association 2011).

While beef and sheep prices are near record levels production costs have increased more than the general inflation rate. The average rate of inflation from 2001 to 2010 was 2.10%, as measured by the Consumer Price Index – All Urban Consumers (CPI-U) index. By comparison, the Index of Prices Paid (PPI) by Farmers and Ranchers for beef cattle production (USDA-NASS 2012, annual December issue) increased by an annualized rate of 4.47%. Double digit increases in production costs occurred in 2005 and 2008[8].

[8]The PPI is weighted heavily by fuel, auto, truck and machinery costs with other items, as described in Section 4.

Figure 5.2 Average Weekly Slaughter Lamb Market Prices in TX, CO, and SD, 2001 – 2011

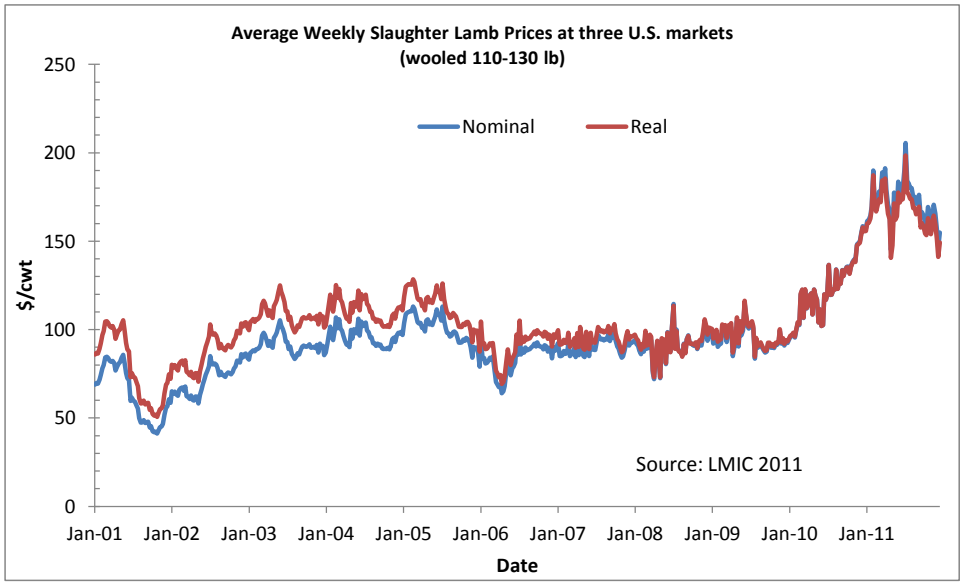
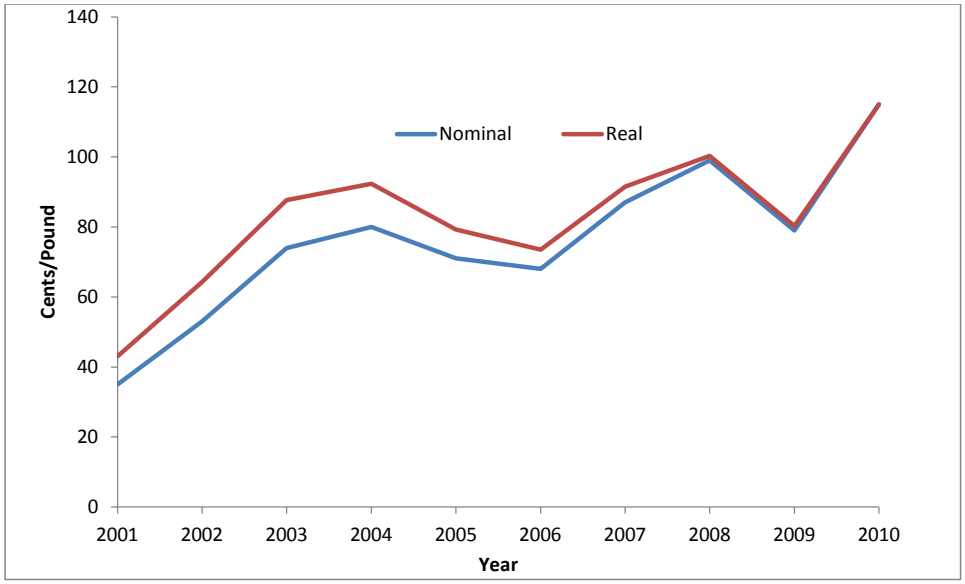


Figure 5.3 Average U.S. Greased Wool Price, 2001 - 2010



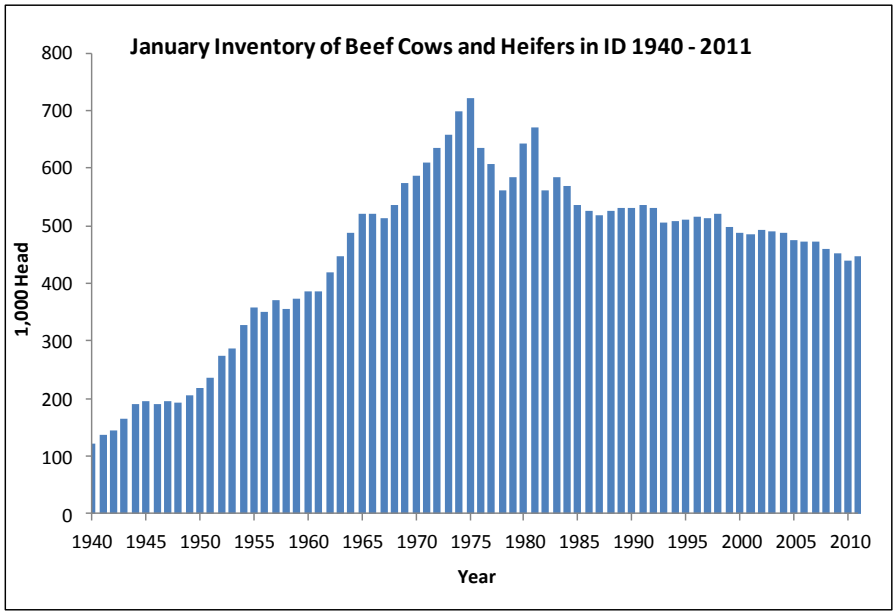
Trends in Livestock Numbers

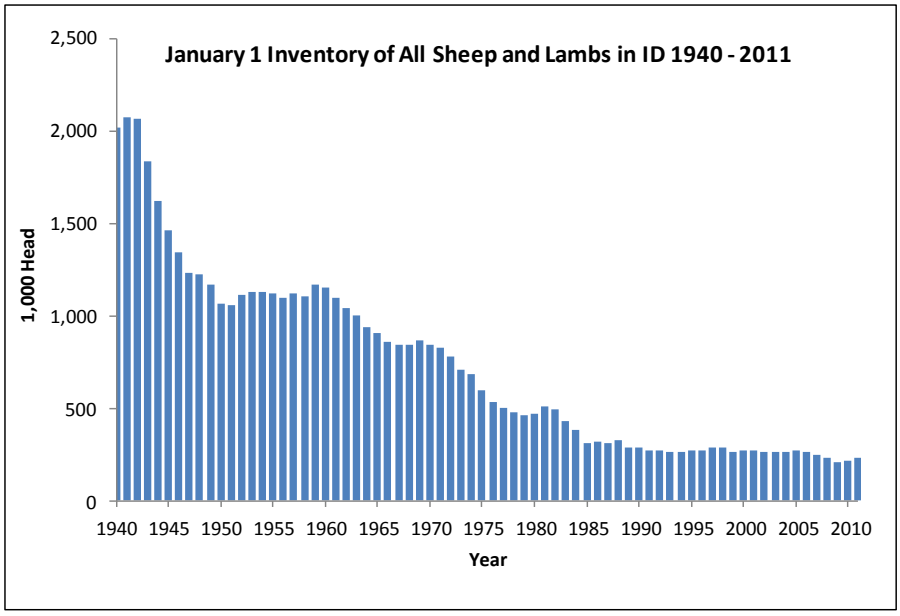
The January 1 beef cow inventory reached peak levels in the 1970s and has declined since that time (Figure 5.4). The national beef cow inventory has declined by about 8% since 2001 with a similar percentage decline in Idaho and in the states that neighbor Idaho (Figure 5.5).

Sheep numbers in Idaho and nationwide have declined significantly since the 1940's (Figure 5.4). The January 2011 Idaho inventory of the category called "All Sheep", as reported by NASS, was 235,000 head which is a 15% decline from the 275,000 head reported in 2001. Of the neighboring states, over the 2001 – 2011 study period, sheep numbers decreased the most in Montana (36%) and Wyoming (31%) (Figure 5.5).

NASS reports livestock numbers for four Idaho districts with boundaries defined along county lines. The NASS-defined districts are similar to IDL administrative boundaries but IDL supervisory areas do not follow county lines in all cases. The Payette Lakes IDL supervisory area is included in the southwest NASS district with other areas similarly defined with the northern counties combined.

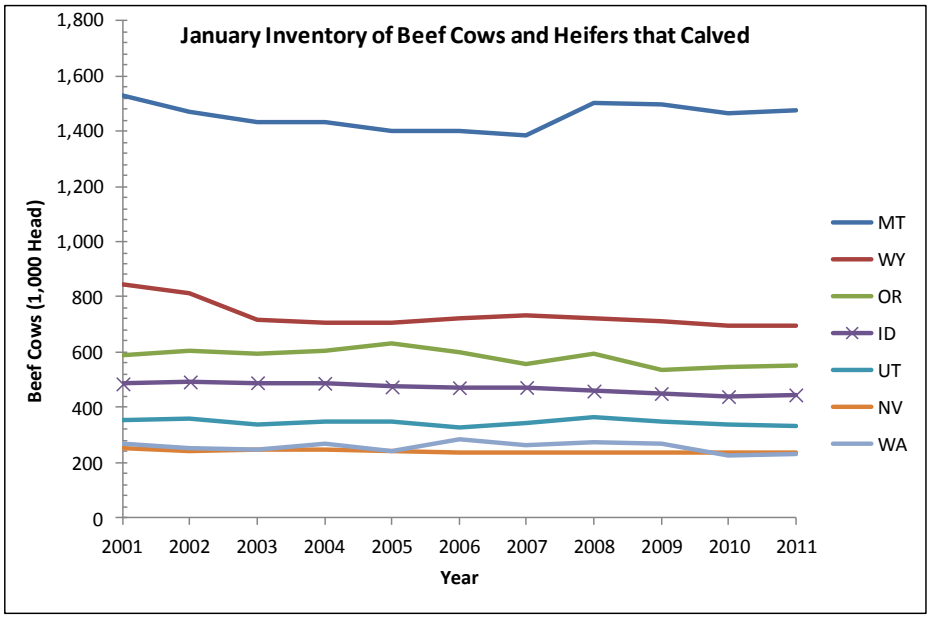
Figure 5.4 Idaho Beef Cow and Sheep Inventories, 1940 – 2011

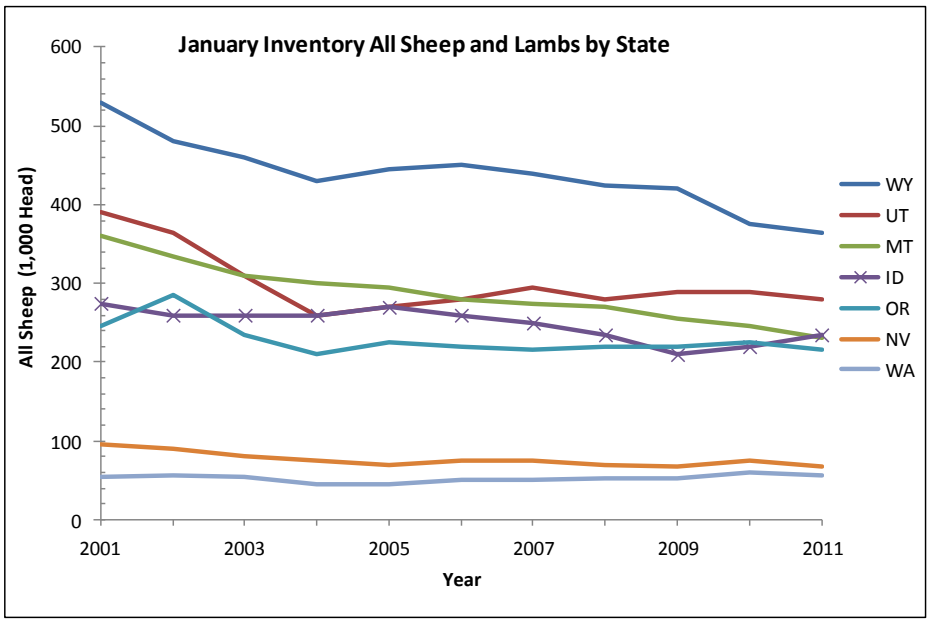




Source: LMIC (2011)

Figure 5.5 Idaho and Neighboring States Beef Cow & Sheep Inventories, 2001-2011





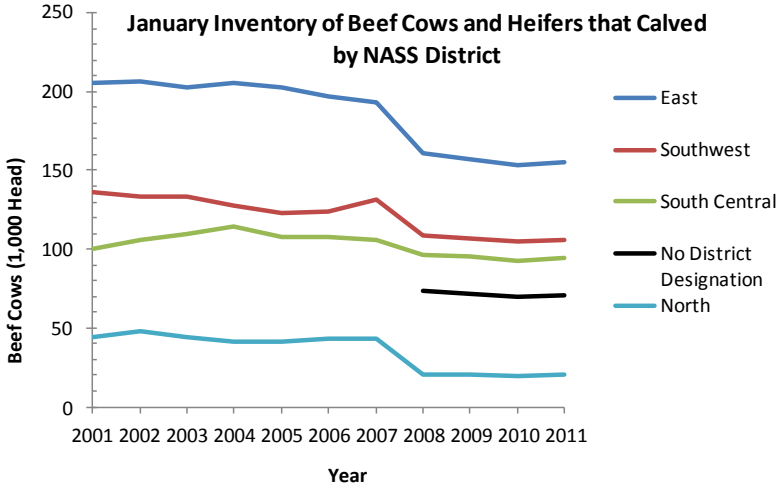
Source: Idaho USDA-NASS data summarized by LMIC (2011).

Note: Graph lines and legend are organized from largest to smallest 2011 state inventory.

Beef cow numbers over the 2001 to 2007 period declined at a similar rate within most regions of Idaho (Figure 5.6). However, a change in the data recording procedure by NASS (to standardize data reporting and avoid disclosure problems) occurred after 2007 and that makes a regional comparison of livestock numbers within Idaho problematic after that point. After 2007 selected counties with relatively low livestock numbers were lumped together and not allocated to one of the four NASS districts. What appears to be a drop in beef cow numbers after 2007 (in all but the south central district) was actually not classifying selected counties to a specific district (Figure 5.6). During 2007 when a valid regional comparison of beef cow numbers could be made the inventory across Idaho NASS districts was 41% east, 28% southwest, 22% south central, and 9% north. Appendix D Table 1 gives additional detail on the beef cow inventory by NASS district and by county from 2001 to 2011.

Comment [D2]: Confirm correct appendix and table

Figure 5.6 Regional Distribution of Idaho Beef Cow by NASS District, 2001 - 2011



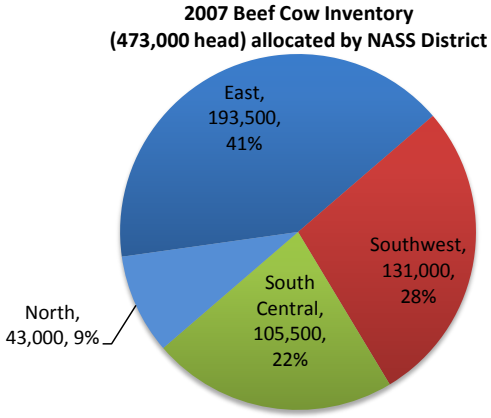
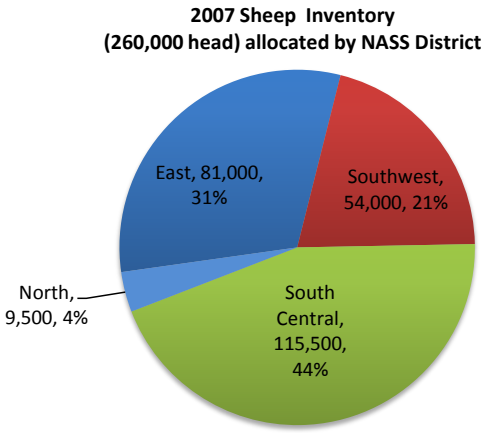


Figure 5.7 shows the regional distribution of the 2007 sheep inventory in Idaho. Inventory numbers from 2001 – 2007 were similarly distributed, decreasing slightly in all southern NASS districts. Valid regional comparisons were not possible after 2007 given the data coding change. As shown, 44% of the 2007 sheep inventory was produced in the south central area. Appendix D Table 2 gives additional detail on sheep inventories by county. The largest

decrease in statewide sheep production occurred between 2008 and 2010 when the inventory of sheep decreased from 260,000 head to 220,000 head. By January 2011, the sheep inventory returned to 2008 levels.

Figure 5.7 Regional Distribution of Idaho Sheep Inventory by NASS District, 2007



5.3 USDA-NASS Private Land Grazing Lease Rate Survey

NASS provides annual estimates of private land grazing lease rates and pasture values from various surveys they conduct. Two key NASS surveys and sources of data are discussed in this report. The NASS private land grazing lease rate survey reports $/head, $/cow, and $/AUM lease rates. The second lease rate survey computes values on a $/acre basis and is discussed in Section 8 with the data used to compute rent-to-value ratios and with comparison to land values in Idaho and the 11 western states.

The NASS grazing lease rate survey is estimated from an annual cattle survey and these per head data are the basis for computing the FVI used in the federal Public Range Improvement Act (PRIA) grazing fee formula (USDA-NASS 2012) and in the IDL lease rate formula. Reported values in this survey are for non-irrigated grazing lands. State-level private grazing fee rates are reported by NASS for each of the 11 Western states plus other Mid-Western states.

The NASS grazing lease rate survey has been consistently reported since 1979 and the reported values have been widely used. The FVI index, or state-level FVI's, is included in state trust land grazing fee calculations for several western states (see Section 4 of this report). The NASS data is the only consistent reporting of grazing lease rates available. The FVI has been criticized on several fronts, however, including recognition that limited data is collected in each state, and this limitation is especially problematic for determining average lease

prices at the state level. The data are primarily based on hearsay as people are asked to recall or speculate on lease rates in the area (Brokken and McCarl 1987; Torell et al. 2003).

Table 5.1 summarizes NASS reported $/AUM grazing rates for Idaho and neighboring states over the 2001 – 2011 period. Table 5.2 shows the similar values reported on a $/head basis. Both nominal and 2010 real prices are shown. Annual changes in private lease rates appear to be largely driven by general inflation. Trends in real price rates were flat (Table 5.1).

Movements in lease rates are not correlated with beef prices. Regressing the 11-state NASS $/AUM lease rate (1979 through 2011) against the BCPI and the PPI indicates a strong correlation with the PPI ($\alpha < 0.001$) but with no correlation with the BCPI ($\alpha = 0.58$). Similar results were obtained using only Idaho data. This suggests an inflation factor as an appropriate annual adjustment mechanism. A second alternative suggested by the observed private lease rate trends is to incorporate the lagged FVI or the lagged state-level FVI.

State-level differences in lease rates do exist. LaFrance and Watts (1995) developed a hedonic model for predicting NASS reported $/AUM lease rates. Substantial differences were found in the levels of predicted NASS fees across states with the minimum private grazing fee for Arizona ranging from 45% to 60% of the maximum, which was usually Montana. LaFrance and Watts (1995) found private grazing fees in California, Colorado, Montana, Washington and Wyoming to consistently be among the top five in the 11-state region whereas Arizona, New Mexico and Nevada were consistently the bottom three. They attributed state-level differences to variation in forage quality, forage quantity and water availability.

Table 5.1 USDA Reported Average $/AUM Private Grazing Fee Rates for Select States, 2001 – 2011

Year	11-State	ID	WA	OR	NV	UT	MT	WY
Nominal Price ($/AUM)								
2001	12.30	11.50	9.10	12.10	10.00	11.00	14.90	12.90
2002	12.50	11.70	9.60	11.80	10.50	11.60	15.10	13.50
2003	12.80	12.00	11.20	12.50	10.50	11.60	15.20	13.40
2004	13.30	12.20	10.80	13.00	10.60	11.80	15.90	13.90
2005	13.70	12.50	9.70	13.00	12.20	11.60	16.20	14.80
2006	13.90	12.80	9.60	12.50	13.00	11.70	16.20	15.10
2007	14.90	13.80	12.10	14.10	13.00	12.90	17.80	15.40
2008	15.00	12.60	11.50	14.00	13.50	13.00	18.10	15.70
2009	14.70	12.60	11.00	14.60	11.00	13.00	18.00	16.00
2010	15.00	12.00	12.00	14.20	12.50	13.10	18.40	16.60
2011	16.00	14.50	12.00	14.80	13.00	13.20	19.40	17.60
Average	14.01	12.56	10.78	13.33	11.80	12.23	16.84	14.99
Std. Dev.	1.20	0.89	1.11	1.05	1.29	0.81	1.55	1.46
ROC[a]	2.66%	2.35%	2.80%	2.03%	2.66%	1.84%	2.67%	3.16%
Trend								
Real Price ($/AUM)								
2001	15.14	14.16	11.20	14.90	12.31	13.54	18.35	15.88
2002	15.15	14.18	11.64	14.30	12.73	14.06	18.30	16.36
2003	15.17	14.22	13.27	14.81	12.44	13.75	18.01	15.88
2004	15.35	14.08	12.47	15.01	12.24	13.62	18.35	16.05
2005	15.30	13.96	10.83	14.51	13.62	12.95	18.09	16.52
2006	15.03	13.84	10.38	13.52	14.06	12.66	17.52	16.33
2007	15.67	14.51	12.73	14.83	13.67	13.57	18.72	16.20
2008	15.19	12.76	11.65	14.18	13.67	13.17	18.33	15.90
2009	14.94	12.81	11.18	14.84	11.18	13.21	18.30	16.26
2010	15.00	12.00	12.00	14.20	12.50	13.10	18.40	16.60
2011	15.51	14.06	11.63	14.35	12.60	12.80	18.81	17.06
Average	15.22	13.69	11.73	14.50	12.82	13.31	18.29	16.28
Std. Dev.	0.22	0.79	0.85	0.44	0.85	0.43	0.34	0.36
ROC[a]	0.24%	-0.07%	0.38%	-0.38%	0.23%	-0.57%	0.25%	0.72%
Trend								

Source: USDA-NASS, Agricultural Prices Monthly (Various January issues).

[a] ROC = Annualized rate of change computed as the interest rate that would cause the 2001 value to grow to the 2011 value in 10 years.

Table 5.2 Average $/head Private Grazing Fee Rates Reported by USDA for Selected States, 2001 – 2011

Year	11-State	ID	WA	OR	NV	UT	MT	WY
Nominal Price ($/head)								
2001	12.60	12.00	10.20	9.50	10.70	11.50	16.00	13.10
2002	13.00	12.20	9.60	10.20	11.50	12.10	16.30	14.00
2003	13.40	12.60	11.20	12.20	11.80	12.50	15.90	13.90
2004	13.80	12.60	10.80	12.50	12.00	13.10	16.20	14.30
2005	14.60	13.00	12.20	12.80	12.50	13.00	17.30	15.50
2006	15.10	13.50	12.20	12.80	13.00	13.50	18.30	15.80
2007	15.60	14.60	12.20	13.00	13.50	14.20	19.20	16.10
2008	16.20	14.10	14.10	14.60	14.00	15.50	19.80	16.40
2009	15.80	14.00	12.80	15.50	12.00	15.30	18.90	16.70
2010	16.10	14.00	13.00	14.00	13.00	15.50	19.30	17.20
2011	16.80	15.00	13.00	16.50	14.00	15.80	19.50	18.30
Average	14.82	13.42	11.94	13.05	12.55	13.82	17.88	15.57
Std. Dev.	2.40	1.87	1.49	2.25	2.16	2.04	3.11	2.58
ROC[a]	2.92%	2.26%	2.46%	5.68%	2.72%	3.23%	2.00%	3.40%
Trend								
Real Price ($/head)								
2001	15.51	14.78	12.56	11.70	13.17	14.16	19.70	16.13
2002	15.76	14.79	11.64	12.36	13.94	14.67	19.76	16.97
2003	15.88	14.93	13.27	14.46	13.98	14.81	18.84	16.47
2004	15.93	14.54	12.47	14.43	13.85	15.12	18.70	16.51
2005	16.30	14.51	13.62	14.29	13.96	14.51	19.32	17.31
2006	16.33	14.60	13.20	13.84	14.06	14.60	19.79	17.09
2007	16.41	15.35	12.83	13.67	14.20	14.93	20.19	16.93
2008	16.41	14.28	14.28	14.79	14.18	15.70	20.05	16.61
2009	16.06	14.23	13.01	15.75	12.20	15.55	19.21	16.97
2010	16.10	14.00	13.00	14.00	13.00	15.50	19.30	17.20
2011	16.29	14.54	12.60	16.00	13.57	15.32	18.90	17.74
Average	16.09	14.60	12.95	14.12	13.65	14.99	19.43	16.90
Std. Dev.	0.29	0.37	0.68	1.27	0.62	0.49	0.50	0.45
ROC[a]	0.49%	-0.16%	0.03%	3.18%	0.30%	0.79%	-0.41%	0.96%
Trend								

Source: USDA-NASS, Agricultural Prices Monthly (Various January issues).

[a] ROC = Annualized rate of change computed as the interest rate that would cause the 2001 value to grow to the 2011 value in 10 years.

Net Forage Value

Bartlett et al. (2002) synthesized the various methods that have been used to determine the value of forage on private, public and state trust lands. Comparison to the competitive private forage market has been the primary method. For valuing public land forage, private market comparisons date back to 1916 when the United States Forest Service (USFS) used the rental value of about 900 tracts of private land to estimate the apparent market value of USFS forage (Dutton 1953).

When tracts of land have comparable characteristics, it is widely believed (Bartlett et al. 2002; Bioeconomics 2011) that comparing public forage valuation to the private forage market is valid, provided adjustments are made for differences in leasehold arrangements.

As Bartlett et al. (2002, p. 429) describes, six different New Mexico studies and two studies in Idaho considered the value of lessor-provided services for daily care of livestock, watering livestock, maintenance of fences and facilities, and grazing access to the leased property. None of the studies attempted to value timber harvest rights, exclusion of access to outside parties, or differences in stewardship responsibilities between private and public (including state) lands. The New Mexico studies were primarily conducted to assess the market value of New Mexico's trust lands when state fees were last addressed in the late 1980s. The studies consistently found that the value of lessor-provided services comprise about 30% to 35% of the average lease price (Torell and Fowler 1992). Rimbey et al. (1992) found the service component of Idaho leases to average from 36% to 39% of lease price, but this study included an adjustment for lease price pre-payment that was not considered in the New Mexico studies. Substantial variability was noted in all the studies; regression models explained less than 35% of the observed variability in private land lease prices.

Subsequent research in other states has confirmed the apparent validity of the approximate 30% average service value component of grazing leases (LaFrance and Watts 1995, p. 454; Bioeconomics Inc. 2011). This general rule-of-thumb has been widely used to adjust NASS lease rates to a payment for grass-only leases. The rule has also been used to assign forage value in range improvement economic studies (Bastian et al. 1995; Torell et al. 2005a), ranchland valuation studies (Egan and Watts 1998; Torell et al. 2005b; Rimbey et al. 2007), and as an adjustment in setting the value of public and state trust land grazing fees (Torell et al. 1990; LaFrance and Watts 1995; Bioeconomics Inc. 2011).

Using the $14.50/AUM rate reported by NASS for Idaho during 2011, the 30% rule-of-thumb suggests rangeland tenants in Idaho paid about $4.35/AUM (30%) for services provided by the lessor and $10.15/AUM (70%) for the forage on the lease. The spread between the IDL grazing fee and the estimate of forage value by applying the 30% rule widened over the 1993 – 1998 period, remained relatively constant with about a $3.00/AUM spread until 2011, at which point the spread widened to about $5/AUM. General consistency of the spread is

expected as the current IDL fee formula uses NASS reported indices in its annual calculation, including an index of the Idaho private lease rate. As described in sections 7.9 and 8.5, reported Idaho lease rates are influenced by irrigated land lease prices.

5.4 Demand for IDL Grazing Lands

As noted earlier, both cattle and sheep prices are at record levels due largely the lowest inventories of livestock since the 1950s. The lack of forage and fodder in drought areas has contributed to the livestock supply decline, through drought-impacted ranchers reducing herds to match forage resources. Rebuilding livestock herds are projected to take several years (LMIC 2011). The current demand for forage is strong and cattle are being shipped large distances to find available grazing resources. The linkage between beef prices and private grazing lease rates is weak, but the strong current demand for forage with drought conditions prevailing would be expected to be reflected in the short-term forage market. NASS-reported lease rates for 2011 (Table 5.1) generally increased faster than the rate of inflation during 2010 and accelerated increases would be expected again for 2011-2012. Current demand for forage is very strong.

A longer-term assessment of forage demand is made every 10 years by the USFS, as directed by the Renewable Resources Planning Act (RPA) of 1974. The most recent RPA assessment conducted in 1999 employed a scenario analysis that used a panel of experts to project forage demands over the next 50 years (Van Tassell et al. 2001a). Shorter summaries of the RPA scenario analysis were also published (Bartlett et al. 1999; Van Tassell et al. 1999). Table 5.3 summarizes the two "most likely" scenarios defined for the western region (11 Western states plus Kansas, Nebraska, North Dakota, and South Dakota). Scenario 1, the most likely with a 72% probability of occurrence, projected a decrease in livestock grazing use with an increase in wildlife use. Higher probabilities were attached to land being removed from grazing use because of regulations and changes in land use in the western region than in the other two study regions. The number of beef cattle and sheep in the western region was expected to decline over the upcoming decades, but this was projected to be partially offset by an increased amount of time spent harvesting grazed forages. Profit margins for beef and dairy were projected to decrease slightly but not enough to significantly impact the demand for grazed forages. Fee and non-fee grazing costs on both private and public lands were projected to increase, and the increase on public lands were projected to be enough to negatively impact public land forage demand (Van Tassell et al. 2001a, p. 18). While not mentioned specifically in the RPA report, higher state trust land fees and non-fee grazing costs would conceptually have the same expected reduction on the demand for IDL forage. It should also be noted that many of the issues associated with threatened and endangered species, and the livestock management concerns about federal land grazing permits were not apparent at the time of the RPA assessment.

Table 5.3 Most likely scenarios in the West Region for the grazed forage industry considering a 50-year planning horizon.

Factor	Scenario 1	Scenario 2
A. Land available for forage production	Change in land use will decrease the amount of land available for grazing	Change in land use will have little impact on the amount of land available for grazing
B. Environmental concerns and government policies	Significant effects will not be seen nationally; local effects will be significant where resource concerns have already emerged.	Impacts of regulation will subside After initial minor changes.
C. Livestock use of grazing lands	Livestock use of grazing lands will decrease.	Livestock use of grazing land will not change significantly.
D. Wildlife use of grazing lands	Wildlife use of grazing lands will increase.	Wildlife use of grazing lands will not change significantly.
E. Technology changes in development of forage production	There will be significant changes in the development or use of forage production technology.	There will be significant changes in the development or use of forage production technology.
Probability of Occurrence	72%	21%

Source: Van Tassell et al. 2001a.

Relative to the 1998 level of AUM use in the U.S. (153.41 million AUMs), by 2010, the 2000 RPA projected an 8.8% decrease in AUM use at the national level and a 11% decrease in AUMs for the Western states (Van Tassell et al. 2001a, Table 24). Projections were for a 22% decrease in western -region demand by 2050.

A second scenario analysis and expert panel was conducted in 2000 to further evaluate what factors will likely influence the future demand for public land forage in the western states (Defined in this second study to be the 11-Western states) (Van Tassell et al. 2001b). In this study, the expert panel included ranchers, environmentalists, and agency and university personnel with 15 persons in each group. All four groups were fairly consistent in the way they viewed the future of grazing on public lands. The panel identified five factors that would likely influence the use of grazed forages over the next 20 years. The most probable scenario identified included 1) a significant increase in the demand for multiple uses on public lands, 2) a continued public sentiment against grazing on public lands, 3) an increase in regulations, and their enforcement, that will negatively impact livestock grazing on public lands, 4) a static or slight decline in public land forage demand by ranchers, and 5) a significant increase

in the use of science and technology for managing public land grazing. Multiple uses, in particular increased recreational demands, were thought to have a strong negative impact on livestock grazing.

The expert panelists participating in the 2000 RPA assessment of future grazed forages demand and supply, and the follow-up study, appear to have correctly identified key issues of concern. Public land grazing has remained controversial with a strong anti-grazing contingent; endangered species and rangeland health have received widespread attention; and compliance with rules and regulations has been burdensome for many. Grazing fees have not yet increased significantly as projected, but non-fee grazing costs have increased substantially. Rimbey and Torell (2011) estimate the 2010 total cost of grazing public lands at $33.24/AUM as compared to private leased land at $32.04/AUM.

The RPA estimate of an 11% reduction in grazed forage use by 2010 in the western region may be quite accurate. Beef cow inventories are as low as they have been since the 1950s (LMIC 2011). West-wide authorized use on BLM lands decreased by about 4.5% from 1998 to 2010 (USDI-BLM 2011) whereas there was a 37% decrease in authorized use[9] on USFS lands (USFS 2011). Authorized use on BLM lands in Idaho was nearly unchanged (+0.6%) over the period, but USFS lands experienced a 34% decrease. Actual use of federal grazing lands based on the physical bodies of livestock on the land is not reported and remains unknown. AUMs leased by IDL over the period has remained nearly unchanged with current AUM use at about 257,000 AUMs (Table 1.1).

The main messages that the RPA studies may have for IDL is that the demand for grazing on IDL lands will likely remain near current levels, but attempts to layer in other multiple uses on IDL lands can be expected to decrease the grazing demand for these lands. This would be particularly true for blocked lands managed by IDL. The RPA expert panels consistently believed that multiple uses on rangelands would increase and this would decrease grazing demand (Van Tassell et al. 2001b).

Increased regulation and bureaucracy on federal lands can be expected to continue and this will negatively impact grazing use and demand on federal lands with additional implications for IDL. When federal and state lands are intermingled the grazing demand for IDL lands would be expected to follow that of the federal lands. Yet, an increasing and continuing conflict about public land grazing might increase the demand for large blocks of state trust lands. Overall demand for grazing on IDL lands is expected to remain strong, especially in the short-term with favorable agricultural incomes.

[9] Authorized use is a term to designate the number of AUMs authorized and billed for on the permit (USFS 2011; RCI 2001).

6 – Regional Lease Analysis and Findings

This section addresses the grazing market rent survey developed to gather regional information about private grazing land leases in Idaho for the study and provides survey results.

6.1 Study Survey

The survey frame was obtained from an IRRC list of 4,365 individuals, businesses and organization who had paid an assessment fee or who had a relationship with the IRRC. Only 772 listings had phone numbers associated with them. Survey staff at the University of Idaho Social Science Research Unit (SSRU), whose primary role on the team was to conduct telephone surveys for this study, used online directories to look up phone numbers for every second and fifth listing without a number. Sample frames were then combined and checked for duplicates. The final frame contained 2,159 listings.

The final telephone survey instrument, as approved by IDL went through several internal and external reviews and revisions prior to pre-testing. Survey research convention requires that when pre-testing survey instruments, they be administered to the types of respondents that would be participating in the study. A pre-test of 60 listings began on November 8, 2011. Once the survey instrument was finalized, a computer-assisted telephone interviewing (CATI) protocol was developed, pilot-tested and finalized (Appendix B; includes answers to frequently asked questions). The survey itself is included as Appendix C. The variables and codes assigned to responses to the survey questions are provided in the copy of the survey codebook provided to IDL as a supplementary electronic file to this report.

To increase the telephone survey response rate, one week prior to calls a postcard was mailed to potential respondents for whom a complete address was known. Postcards identified the survey's purpose, that calls would be from the SSRU, and provided a toll-free number to call regarding questions about the survey. Postcards for the first survey wave were mailed on December 2, 2011; survey calls began on December 5, 2011. Postcards for the second wave were mailed January 9, 2012 with calls beginning on January 13, 2012. February 8, 2012 was the final day of calls.

SSRU telephone interviewers are required to complete a 4-hour training session in survey methodology, the use of the CATI software and phone etiquette, and a 1.5-hour online training program in human subject research and confidentiality practices developed by the U.S. Department of Health and Human Services. Each calling session is monitored by trained supervisors. Data were collected on Wincati telephone interviewing software[10].

[10] Sawtooth Technologies, Inc. 2011. Wincati Version 4.1. Northbrook, IL.

A total of 373 respondents were determined to be eligible for and agreed to participate in the lease survey. Survey dispositions include 550 ineligible respondents (individuals who did not lease their land to anyone, nor leased land from anyone, or they had recently sold their land), 254 potential respondents with disconnected phone numbers for whom no new listing could be obtained from online directory listings, 106 potential respondents that refused to participate, and 685 potential respondents that were not reached either because no phone number could be obtained, or because they could not be reached after nine call attempts. The final adjusted response rate (AAPOR RR2) was 32.7%.[11] For comparison, a similar study conducted in 1992 (Rimbey et al. 1992) had a response rate of 39%, and a survey of agricultural lease rates in the state had a response rate of 38.3% (Resource Dimensions 2010).

6.2 Overview of Idaho Private Grazing Land Leases

The distribution of respondents across each of the five study regions, by county, is shown in Table 6.1. Several factors played into low actual respondent counts in a number of counties. In particular, several counties had a moderately small pool of potential participants. Further, according to several County Assessors, it is representative of the pattern of private grazing lands leased. Overall, however, the total number of respondents met project goals for statistical reliability.

[11] The American Association for Public Opinion Research (AAPOR) (2009). Standards Definitions: Final Disposition of Case Codes and Outcome Rates for Surveys, 4th Edition. Lenexa, KS: AAPOR. Available at: http://www.aapor.org/AM/Template.cfm?Section=Standard_Definitions&Template=/CM/ContentDisplay.cfm&ContentID=1819

Table 6.1 Survey Respondents by Region and County

Region/County	Grand Total	Region/County	Grand Total
Eastern	**143**	**Southwest**	**52**
Bannock	3	Ada	6
Bear Lake	13	Boise	5
Bingham	12	Canyon	3
Bonneville	15	Elmore	18
Butte	8	Gem	6
Caribou	12	Owyhee	12
Clark	16	Payette	2
Custer	13	**Payette Lakes**	**41**
Franklin	3	Adams	20
Fremont	4	Valley	6
Jefferson	1	Washington	15
Lemhi	26	**Northern**	**30**
Madison	2	Bonner	3
Oneida	6	Boundary	2
Power	6	Clearwater	4
Teton	3	Idaho	10
South Central	**46**	Latah	3
Blaine	14	Lewis	3
Camas	5	Nez Perce	3
Cassia	15	Shoshone	2
Gooding	2		
Jerome	0	**Not Reported**	**3**
Lincoln	5		
Minidoka	1		
Twin Falls	4	**Grand Total**	**315**

6.3 Data Limitations

The study region and county where each lease is located is required to allocate leases to different regions. Respondents were asked to pick the two most representative leases and provide additional detail. The question in the survey was "*In what Idaho county is the first (or second) lease held?*" The location of the lease(s) relative to a nearby town was given, however it was not always clear what county the selected lease(s) was in. When not clear about county location, the county where this nearby town was located was used to define county location. The region coding is correct; however, in a few instances the exact county within that region may be incorrectly recorded as an adjacent county.

Several issues were encountered for statistical analysis of the data and for evaluating factors influencing grazing lease rates. Most notably, while survey respondents reported how leases were structured and charged, 97 respondents did not report what they paid for the lease. Calculating $/AUM lease rate when only a total payment was given proved to be problematic because acreages were very broadly defined and aggregated across the multiple leases. This non-response in lease payment amount limited our ability to convert to a common measure or standard of payment ($/head, $/AUM, $/acre, etc.) for comparison and analysis purposes. Dollar per acre ($/acre) lease rates could not accurately be computed and were reported for only 16 leases. Further, given the problems in computing acreages on a particular lease, the number of acres per AUM could not be computed to use as an indicator of lease quality.

6.4 Total Number of Leases

Private grazing lease information was gathered for 315 lease parcels with data reported by 239 individuals. Lease statistics were reported by 163 individuals for one parcel of land only, 76 individuals for a second parcel of land, and two people described 3 leases as both a lessee and lessor. Of the total 315 leases, 211 (67%) were reported from the lessee perspective and 104 (33%) were lessors (Table 6.2).

The majority of leases were leased to or from a non-related individual or group. Inclusion of subleasing provisions in the lease was not common.

Table 6.2 Number of Grazing Leases in the Survey, by type

Description	Eastern	Northern	Payette Lakes	South Central	Southwest	All Regions
Respondent Type						
Lessor	35.0%	40.0%	19.5%	28.3%	38.5%	33.0%
Lessee	65.0%	60.0%	80.5%	71.7%	61.5%	67.0%
Number reporting	143	30	41	46	52	315
Leases To/From?						
Non-related individual or group	80.4%	80.0%	97.4%	80.4%	92.3%	84.7%
Relative or related group	18.2%	20.0%	2.6%	19.6%	7.7%	14.7%
Other	1.4%	0.0%	0.0%	0.0%	0.0%	0.6%
Number reporting	143	30	39	46	52	313
Subleasing Provisions						
Yes	0.7%	3.3%	4.9%	0.0%	7.7%	2.5%
No (7 individuals refused)	94.3%	96.6%	94.6%	100.0%	92.4%	97.5%
Number reporting	143	30	41	46	52	315

6.5 Private Grazing Lease Characteristics

The survey was developed to specifically identify the range of terms, characteristics, and conditions for private grazing land leases in the five study regions. Responses to these questions are summarized in tables separately by region and land type. Most responses were consistent across regions, though tests were not conducted to determine if statistical differences exist. Summary tables include all 315 leases with three of the leases unclassified as to the IDL region location (Table 6.3). As described in more detail below, the amount of native rangeland, improved rangeland, cropland and irrigated land included with each lease varied both within and between regions; thus, statistics include leases with various mixtures of native and improved lands.

The majority of leases (67.8%) were structured with automatic annual renewal (Table 6.5). The average term for the lease varied from three to five years for the five study regions, averaging four years across all leases. Slightly more than 50% of the lease agreements were written. About 80% of the leases had been renewed within the past three years, at least with respect to lease rate. There was no correlation (P = 0.84) between the length of the lease and whether the lease was written or verbal.

Table 6.3 Typical Lease Arrangements and Renewal Terms, by region

	Eastern	Northern	Payette	South Central	Southwest	All Regions
Last Year Lease Renewed (%)						
2012	7.1%	3.4%	10.3%	2.2%	5.9%	6.1%
2011	67.4%	65.5%	82.1%	67.4%	60.8%	68.0%
2010	7.8%	6.9%	0.0%	8.7%	9.8%	7.1%
2009	5.7%	6.9%	2.6%	2.2%	7.8%	5.5%
2008	4.3%	10.3%	2.6%	4.3%	3.9%	4.5%
2007	1.4%	0.0%	0.0%	2.2%	3.9%	1.6%
2006	1.4%	3.4%	0.0%	0.0%	0.0%	1.0%
2005	0.0%	0.0%	0.0%	2.2%	3.9%	1.0%
2004	0.7%	0.0%	0.0%	4.3%	2.0%	1.3%
Prior to 2004	4.3%	3.4%	2.6%	6.5%	2.0%	3.9%
Number reporting	141	29	39	46	51	309
Lease Arrangement						
Written	52.8%	50.0%	55.0%	58.7%	46.2%	52.4%
Verbal	47.2%	50.0%	45.0%	41.3%	53.8%	47.6%
Number reporting	142	30	40	46	52	313
Renewal Arrangement						
Automatic Renewal each Year	68.8%	73.3%	61.5%	71.7%	62.7%	67.8%
Specified Number of Years	31.2%	26.7%	38.5%	28.3%	37.3%	32.2%
Number reporting	138	30	39	46	51	307
Term of Lease (Years)						
Average	4.5	3.0	2.7	5.2	4.5	4.2
Standard Deviation	13.9	5.1	4.5	11.1	5.1	10.8
Number reporting	136	26	38	42	49	294
Distribution (Years)						
1	64.0%	76.9%	68.4%	54.8%	53.1%	62.6%
2	5.1%	0.0%	2.6%	0.0%	0.0%	2.7%
3	5.9%	3.8%	7.9%	11.9%	8.2%	7.5%
4	1.5%	0.0%	0.0%	4.8%	0.0%	1.4%
5	9.6%	3.8%	7.9%	4.8%	10.2%	8.2%
6	0.0%	3.8%	0.0%	0.0%	4.1%	1.0%
7	0.0%	0.0%	0.0%	4.8%	2.0%	1.0%
8	1.5%	3.8%	0.0%	2.4%	0.0%	1.4%
10	5.9%	3.8%	2.6%	7.1%	14.3%	6.8%
> 10 Years	6.6%	3.8%	5.3%	7.1%	8.2%	6.5%

Average distance from the respondent's base to the lease was not highly variable, averaging 26 miles ± 32 (Table 6.4). Distance to the lease was skewed to the low end.

Lessees and lessors indicated that they held an average of four private land leases. The Eastern region had an average of six leases per individual (Table 6.4). Fifty (50) survey respondents indicated some of their leases included IDL lands. Ninety-one (91) leases also included lands leased from other agencies including the BLM and USFS. Information on the size or nature of lease characteristics with other public land agencies is outside the scope of this study and was not reported.

Table 6.4 Distance to Lease and Total Number of Leases held

Description	Eastern	Northern	Payette Lakes	South Central	Southwest	All Regions
Distance from base to lease (miles)						
Average	27	29	25	24	26	26
Standard Deviation	37	28	32	28	25	32
Minimum	0	0	0	0	0	0
Maximum	200	100	130	100	90	200
Number reporting	143	30	41	46	52	311
Private Leases in Idaho						
Average number of leases per lessee/lessor	6	2	1	4	3	4
Number reporting	143	30	41	46	52	315
Non-private leases in Survey						
Total number of IDL leases	21	4	6	8	10	50
Total number of other agency leases	44	7	12	13	14	91

On about 73% of total leases, lessors held the water rights (Table 6.5). Lessee responses were excluded from this calculation as the study team believes they would not be expected to have a thorough understanding of water right issues on parcels they lease. About 66% of total leases do not control for public access to the lease.

Table 6.5 Water rights and Control for Public Access to Lease

	Eastern	Northern	Payette Lakes	South Central	Southwest	All Regions
Lessor hold water rights?						
Yes	78.0%	75.0%	62.5%	76.9%	65.0%	73.1%
No	22.0%	16.7%	37.5%	23.1%	35.0%	26.0%
Refused	0.0%	8.3%	0.0%	0.0%	0.0%	1.0%
Is public access to lease controlled?						
Yes	30.8%	46.7%	26.8%	30.4%	30.8%	31.8%
No	68.5%	53.3%	65.9%	65.2%	67.3%	66.0%
Refused	0.7%	0.0%	7.3%	4.3%	1.9%	2.2%

Respondents indicate that the carrying capacity of a lease is principally determined by climatic conditions and vegetation availability, or through the use of historic records (Table 6.6). Some leases used multiple ways to calculate carrying capacity. Likewise, multiple water sources were reported on some leases. Typically, natural sources of water are used on reported leases; however, motor driven wells are used on about 14% of all leases. The location of the water source on native versus improved lands was not defined in the survey. However, there was a negative correlation (r = -0.41) between the percent of the leased land that was designated as native rangeland and the use of a well as a water source. Motorized wells tended to be used more often when improved or irrigated lands were included with the lease.

Table 6.6 Carrying Capacity and Water Sources, by type

	Total instances	% of total
How is carrying capacity determined?		
Climatic conditons and vegetation availability	144	40.6%
Use of historic property records	128	36.1%
Negotiated with lessor	59	16.6%
Other	24	6.8%
Water sources on lease		
River, stream or creek	68	36.4%
Spring	58	31.0%
Motor-driven well	27	14.4%
Lake or pond	23	12.3%
Other	5	2.7%
Haul water	4	2.1%
Wind-powered well	2	1.1%

Nearly 80% of all leases were only for beef cattle, specifically cow-calf pairs. Yearlings comprised an average of 12% of leases. Sheep are grazed primarily in the South Central and Southwest regions (Table 6.7). The grazing system types were split about evenly with season-long, rest-rotation and short duration each employed on about 30% of leases in each region. Most lease structures do not require the lessee to report range conditions after grazing.

Table 6.7 Livestock and Grazing System, by type

Description	Eastern	Northern	Payette Lakes	South Central	Southwest	All Regions
Livestock Type						
Cow-calf	83.0%	86.2%	82.5%	67.4%	70.6%	78.7%
Cow-calf, Sheep	2.1%	3.4%	0.0%	10.9%	7.8%	4.2%
Cow-calf, Yearlings	0.7%	0.0%	2.5%	2.2%	2.0%	1.3%
Yearlings	12.8%	10.3%	15.0%	10.9%	7.8%	11.9%
Sheep	0.7%	0.0%	0.0%	8.7%	9.8%	3.2%
Horses	0.7%	0.0%	0.0%	0.0%	2.0%	0.7%
Grazing System Type						
Season-long	28.7%	30.0%	26.8%	21.7%	26.9%	27.3%
Deferred	6.3%	6.7%	4.9%	10.9%	5.8%	6.7%
Rest-rotation	28.0%	30.0%	29.3%	26.1%	23.1%	27.3%
Short duration	28.7%	26.7%	34.1%	28.3%	34.6%	30.2%
Other	3.5%	3.3%	0.0%	10.9%	3.8%	4.1%
Refused	4.9%	3.3%	4.9%	2.2%	5.8%	4.4%
Report range conditions required after grazing?						
Yes	17.5%	16.7%	26.8%	13.0%	11.5%	17.1%
No	82.5%	83.3%	70.7%	87.0%	88.5%	82.5%
Refused	0.0%	0.0%	2.4%	0.0%	0.0%	0.3%

Length of the grazing season varied from less than 30 days to yearlong. The majority of grazing animals were on the lease for less than 150 days (Table 6.8). Most of the grazing occurred during Q2 (i.e. 2nd quarter) and Q3 with 4% of the grazing days in Q1, 33% in Q2, 45% in Q3, and 18% in Q4. These percentages were consistent across cow-calf, yearling, and sheep producers except none of the sheep producers grazed the leased parcel during Q1.

Table 6.8 Length of Grazing Season

Length of Grazing Season (days)	Eastern	Northern	Payette	South Central	Southwest	All Regions
0-30	21.0%	23.3%	22.0%	13.0%	13.5%	18.7%
30-60	12.6%	3.3%	12.2%	10.9%	19.2%	12.4%
60-90	8.4%	3.3%	9.8%	13.0%	21.2%	11.1%
90-120	11.2%	23.3%	4.9%	17.4%	7.7%	11.7%
120-150	23.1%	20.0%	14.6%	8.7%	11.5%	17.5%
150-180	14.7%	16.7%	14.6%	21.7%	13.5%	16.2%
180-210	5.6%	6.7%	17.1%	10.9%	11.5%	8.9%
210-240	2.8%	0.0%	0.0%	2.2%	0.0%	1.6%
240-270	0.7%	0.0%	2.4%	0.0%	1.9%	1.0%
270-300	0.0%	0.0%	2.4%	2.2%	0.0%	0.6%
360-390	0.0%	3.3%	0.0%	0.0%	0.0%	0.3%

Native rangeland was the predominant category of land on the leases in each region (Table 6.9). About 45% of the leases included only native rangeland while 22% of the leases did not include any native rangeland acreage. The majority of the leases had a mixture of native rangeland, improved seeded species, cropland and irrigated pasture. Twenty of the 315 leases were comprised of over 90% irrigated pasture.

Table 6.9 Categories of Land, by region

Study Region	Native Rangeland	Improved Rangeland	Crop aftermath	Irrigated Pasture	Other
Eastern					
Average (%)	62.9	12.6	7.0	13.9	2.9
Standard Deviation	43.1	29.1	21.6	28.9	14.6
Northern					
Average (%)	68.4	15.3	5.1	0.8	6.7
Standard Deviation	38.5	27.7	11.6	4.6	21.7
Payette Lakes					
Average (%)	64.1	11.2	9.6	14.1	1.0
Standard Deviation	38.0	23.9	22.2	33.5	4.5
South Central					
Average (%)	57.4	28.6	5.4	8.4	0.0
Standard Deviation	43.1	39.3	21.7	24.7	0.0
Southwest					
Average (%)	72.7	15.0	2.0	4.3	5.3
Standard Deviation	37.9	31.3	8.9	16.0	20.6

Only 16 leases reported a cost share agreement for property maintenance or operation expenses. For the respondents providing detail, the cost sharing ranged from 10% to 90%, with a 50%/50% split most prevalent. No leases were reported to have a minimum guaranteed gain, and two leases were reported to have a death loss guarantee or adjustment.

Table 6.10 provides the expense share each party paid. Real estate taxes were largely the responsibility of the lessor. Equipment maintenance, cattle doctoring, salt costs and nutritional supplements and liability insurance were largely paid by the lessee. Noxious weed control was not reported, or respondent refused to address, for two-thirds of leases. It is likely that noxious weed control was not of major concern for those not responding to this question, but we are unsure of the cause for the high non-response rate for the question. Responses to all service related questions were very similar by region.

Table 6.10 Cost Allocation / Share for Improvements and Management Expenses

Description	Lessor Provides	Lessee Provides	Both provide	Irrelevant to the lease	Refused or Not reported	Total Reporting
Provide building/replace equipment (e.g. fence, water)	36.8%	35.2%	6.7%	20.3%	1.0%	315
Maintain equipment (e.g. fence, water)	26.0%	48.9%	4.1%	20.0%	1.0%	315
Control livestock, pasture moves, doctor cattle	13.7%	79.4%	2.9%	3.2%	1.0%	315
Provide salt	11.4%	84.4%	1.6%	1.6%	1.0%	315
Provide nutritional supplements	8.6%	78.1%	1.3%	11.1%	1.0%	315
Haul water	20.3%	14.0%	2.5%	61.9%	1.3%	315
Provide utilities	15.9%	19.0%	0.6%	63.5%	1.0%	315
Provide liability insurance	27.9%	46.7%	7.0%	17.1%	1.3%	315
Provide noxious weed control	15.6%	7.0%	3.8%	6.7%	67.0%	315
Pay land taxes	92.1%	3.8%	1.3%	1.9%	1.0%	315
Other	1.0%	1.0%	0.3%	82.2%	15.6%	315

Some type of rate on a $/livestock unit basis was the arrangement for over half of the leases. A lump sum payment was also common whereas charging on a $/acre basis was not. Lump sum payments are employed most heavily in the Eastern, Southwest and Northern regions (Table 6.11). The majority of lease payments are made after grazing, but a significant number of respondents in each region report that payments are split (before and after grazing). Typically, the lease rate is established through market conditions and negotiation.

Table 6.11 Lease Characteristics, by region

	Eastern	Northern	Payette	South Central	Southwest	All Regions
How do you charge/pay for lease?						
$/animal basis	45%	40%	66%	65%	48%	51%
$ per head per month	18%	7%	24%	39%	29%	23%
$ per AUM	20%	33%	15%	17%	17%	19%
$ per head per day	7%	0%	27%	9%	2%	8%
Other						
Lump sum payment	46%	47%	22%	22%	40%	38%
$ per acre	6%	3%	2%	4%	6%	5%
Trade of commodity	1%	7%	5%	4%	2%	3%
$ per lb of gain	0%	3%	5%	2%	0%	1%
Refused	1%	0%	0%	2%	4%	2%
When is the lease for the parcel paid?						
Before grazing	14%	20%	10%	20%	25%	17%
After grazing	52%	57%	56%	50%	44%	51%
Split payment	29%	13%	27%	24%	23%	26%
Other	5%	10%	5%	7%	6%	6%
Refused	0%	0%	2%	0%	2%	1%
How was the lease rate established?						
Going rate in area	31%	17%	41%	46%	35%	33%
Historic rate	8%	13%	5%	7%	12%	9%
Negotiated rate	54%	57%	54%	37%	48%	51%
Other	7%	10%	0%	11%	4%	6%
Refused	0%	3%	0%	0%	2%	1%

The average $/AUM lease rate across the five study regions was $16.04/AUM (Table 6.12). The $/AUM rate reported by NASS (USDA-NASS 2012) during 2011 was $16.00/AUM across the 11 western states and $14.50/AUM in Idaho (Table 5.1). The grazing fee paid to IDL during 2011 was $5.13/AUM (Table 1.1). Lease rates were highly variable, ranging from $7/AUM to over $30/AUM. Only five leases reported a rate less than $10/AUM and six leases had a rate over $25/AUM. The survey average and NASS-reported rates for Idaho were not statistically different ($\alpha = 0.33$). Lease rates in the Eastern and Payette Lakes regions were statistically higher than the other three study regions.

Table 6.12 Mean Lease Prices Reported, by region

	Reported AUM	Average of AUM reported	Standard Deviation of AUM reported
Study Region			
Eastern	54	$17.17	$4.48
Northern	13	$14.58	$6.05
Payette Lakes	22	$17.36	$3.70
South Central	25	$14.43	$3.45
Southwest	18	$14.13	$3.27
Not Reported	2	$18.25	$13.79
Grand Total	*134*	*$16.04*	*$4.53*
Livestock Type			
Cow-Calf	110	$15.73	$4.04
Cow-Calf, Sheep	4	$14.25	$3.30
Cow-Calf, Yearlings	1	$18.30	-
Sheep	3	$8.93	$1.20
Yearlings	16	$19.84	$5.75
Grand Total	*134*	*$16.04*	*$4.53*

6.6 Private Grazing Sublease Characteristics

Respondents were also asked questions relative to subleasing in Idaho. Specifically, the study team was concerned with those who leased forage from an individual or other entity, who then leased that forage to or managed the livestock for another individual or entity. Thirty-three respondents (33; 8.8% of survey respondents) revealed that they subleased properties to or from some other individual or entity.

Relative to the type of land included in the sublease, the majority of respondents indicated the land as privately owned (14), while 12 respondents identified another ownership pattern; seven did not respond to the question. Average private land parcel size was 416 acres (*n = 13*). Three respondents identified other land ownerships included in the lease (with an average parcel size of 656 acres). Only one sublease respondent identified IDL lands as included in the sublease.

The majority of the subleases were seasonal in nature (*n = 18*) as opposed to year-long subleases (*n = 7*). There were eight non-responses to this question.

Services or tasks undertaken with subleases of grazing lands are important considerations in determining comparable lease rates and appropriate terms of a lease. Commonly, manager-provided tasks corresponded to items that you would expect with private landowners (Table 6.13). Managers paid land taxes, provided noxious weed control, allowed access to buildings

and other facilities on the parcel, supplied salt and maintained and replaced equipment. Items such as providing nutritional supplements, utilities, liability insurance and irrigation water were fairly evenly split between manager-provided and not being a component of the sublease. Water hauling, marketing of livestock, winter feeding, branding/marking livestock and transportation of livestock were generally not provided by the manager or not included with the lease. The lack of lease rate information and minimal responses to this set of questions precluded further analysis of the subleases, as respondents were not queried regarding fees charged for subleasing. However, it is indicative that subleases have a very minor presence in the Idaho rangeland grazing markets (as evidenced by only 33 sublease respondents from the total survey sample of 373 private grazing leases). Lease rates paid and ranch location of the sublease were not provided by those responding to questions about subleasing.

Table 6.13 Sublease Services Provided

Description	Manager Provides	Manager Does Not Provide	Not Provided or Not Reported
Access to buildings, corrals, etc.	57.6%	12.1%	30.3%
Replaced equipment	54.5%	15.2%	30.3%
Maintained equipment	57.6%	12.1%	30.3%
Provided salt	48.5%	21.2%	30.3%
Provided nutritional supplements	33.3%	36.4%	30.3%
Hauled water	18.2%	45.5%	36.4%
Provided utilities	30.3%	33.3%	36.4%
Provided liability insurance	33.3%	30.3%	36.4%
Provided noxious weed control	51.5%	15.2%	33.3%
Provided irrigation water	30.3%	30.3%	39.4%
Paid land taxes	60.6%	6.1%	33.3%
Branded/marked livestock	27.3%	39.4%	33.3%
Provided winter feed for livestock	24.2%	39.4%	36.4%
Transported/shipped livestock	30.3%	39.4%	30.3%
Marketed livestock	18.2%	51.5%	30.3%
Other services	0.0%	30.3%	69.7%

7 – LEASE RATE ANALYSIS

7.1 Econometric Model Variable Definitions

Sample size, limited variability of some explanatory variables, and the data limitations detailed earlier meant that the statistical model could consider only $/AUM lease rates as the dependent variable, and some potential explanatory variables could not be considered. Numerous variables were recorded in the survey that measured relevant potential lease price-influencing factors. It would be expected, for example, that grazing lease rates would increase depending on the type, quality, condition and productivity of land included on the lease (native rangeland versus other more productive land types); regional location of the lease; type of livestock grazing the lease; season of grazing; cost influencing factors such as distance to the lease; and landowner (or lessor) services provided. These are potential explanatory variables in the hedonic model which uses regression analysis to explore how various factors influenced the lease price. Previous studies have considered only the landowner services component and regional lease rate differences (Torell and Bledsoe 1990, Rimbey et al. 1992, Bioeconomics, Inc. 2011). In this study a systematic analysis of many factors potentially influencing lease rates was made for key variables recorded in the lease rate survey. Potential explanatory variables are discussed by general category, starting with what has been shown to be a consistent and important factor, landowner services provided.

7.2 Landowner Services Provided

Eleven different categories of services were recorded in the survey, ranging from the provider of buildings, fencing and equipment; maintenance of facilities, equipment, and range improvements; control and daily management of cattle; to hauling water. As shown in Table 6.10, four of these service categories were chiefly irrelevant or not reported on the lease (noxious weed control, water hauling, provision of utilities, and other). Further, the landowner nearly always paid the land taxes. No attempt was made to include these services in the hedonic model because there were not enough observations and variability in the sample to obtain meaningful and reliable results. Dummy variables were assigned to the other services (DPEQUIP = provide equipment, DMEQUIP = maintain equipment, DCONTROL = control livestock movement, DSALT = provide salt, DSUPPL = provide supplements, and DINSUR = provide insurance). The service dummy variables were coded as a 1 when the lessor provided the service, a 0 (zero) when the lessee provided it and a 0.5 when both the lessee and lessor jointly provided it. This coding assumes any joint effort was equally split between the landlord and tenant. If the landlord provided these services to the tenant, a positive sign for the parameter estimate would be expected, and as noted earlier numerous

studies have found landlord-provided services to be an important determinant of private grazing lease rates.

7.3 Quality of Lease

Data limitations described above regarding acreage calculations precluded calculation of the pre-planned variable for measuring the grazing quality of the lease, which was to calculate the average number of acres required per AUM of grazing capacity. Other variables in the survey that provided an indication of lease quality was the proportion of the lease designated as native rangeland (NATIVE), improved rangeland (IMPROVED), crop aftermath (CROP), and irrigated pasture (IRRIGATED). The land type variables sum to 100%. Excluding NATIVE from the model (i.e. no dummy variable is included for NATIVE) means parameter estimates for other land variables reflect an adjustment in AUM price when a larger percentage of the acreage was in that land class.

7.4 Parcel Size and Distance

Per head lease prices might be expected to increase with the number of AUMs or acreage included with the lease because of economies of size. Or, conversely, similar to land values in general, per head rates might decrease with lease size while total payments for the lease increases. The number of AUMs included with the lease was used to evaluate potential price influences for size of lease. Both linear and log specifications were considered.

Inconveniences and operating costs increase as distance to the lease increases, and tenants based far from the leased parcel may be more inclined to pay the landlord for daily care of livestock, the effect of which would be captured in the service variables. The distance variable was considered in both linear and log form to evaluate whether there were additional lease rate influences when the tenant resided further from the lease. Expectations were that distance would not have a price influence with 64% of the leases located within 20 miles of the leased parcel.

7.5 Lease renewal, Length of Lease and terms

The length of time that the lease agreement was made or renewed may influence lease rates if older leases fall behind the current market. This could not be evaluated in this study, however, because most leases were recently negotiated. Current year renewal (2011-2012) included 75% of the leases studied; over 90% had been renewed since 2008 (Table 6.3). Similarly, given limited variability in the length of the leases this factor was not considered either. Sixty-four percent (64%) of the leases were negotiated on an annual basis (Table 6.3). In this case the sample had little variability in lease renewal terms and lease length.

A dummy variable (DWRITTEN) was used to evaluate whether having a written or oral lease arrangement affected the lease price (written = 1, oral = 0). A written agreement might indicate a more professional lease arrangement with an expected positive sign for the regression parameter.

Related individuals are usually thought to receive a price discount relative to the market (Libbin et al. 1993). A dummy variable was defined to be one if the lease was between related individuals or groups and zero otherwise. A dummy variable was also defined to evaluate whether reported lease rates were different when a landlord (DLANDLORD = 1) reported for the parcel instead of the tenant (DLANDLORD = 0).

7.6 Grazing Season, Length of Grazing Period and Livestock Class

Survey respondents were primarily cow-calf producers (Table 6.7). Of the 132 leases considered in the statistical analysis only seven leases included sheep on the leased parcel and 17 had yearlings. We considered a separate dummy variable for when yearlings were present and when sheep were present on the lease.

The percentage of days that grazing occurred in each of the four quarters were considered as potential explanatory variables. The third quarter (Q3) was excluded so seasonal variables measured price differences relative to this quarter. It might be expected that a premium price would be paid for the lease when winter grazing was allowed. Winter feed is a major production expense and grazing alternatives to feeding hay may justify a premium lease price. Similar premiums might also occur in periods in which the haystack is the only alternative feed source (e.g. early spring and late fall seasons). The total number of days grazed on the lease was also considered as a potential explanatory variable.

7.7 IDL Management Area

Regional differences in lease rates were tested in the multiple regression model by assigning dummy variables for each area (DEAST, DSW, DSC, DNORTH, and DPAYETTE). The dummy variables were coded as one when the lease was located in the designated region, zero otherwise. The South Central region was initially excluded from the regression model such that included regional dummies measured price differences relative to this area. Statistically insignificant dummy variables were removed and remaining regional dummies used to measure value relative to all excluded regions. When regional dummy variables were not statistically different, this suggests lease rates were not different between regions and no regional adjustment is needed or warranted.

7.8 Recreation Access Control

Two alternative dummy variables for restricted lease access were considered. LACCESS was set to one when the landlord (lessor) indicated he/she controlled access, zero otherwise. Similarly, TACCESS was one when the respondent was a tenant (lessee) and indicted that they controlled access, zero otherwise. Potential interpretation problems exist given the separate questions asked the landlord and tenant. Just because the tenant indicated they did not control access does not mean the landlord did, or vice versa. It would be expected that when access was restricted a higher lease rate would be paid. It is widely stated that one reason a lower grazing fee is justified on public lands is due to multiple uses and the nuisances that creates for grazing on the lease or allotment.

7.9 Hedonic Model Results

The dependent variable of the hedonic model was the $/AUM lease rate. Missing values for some of the explanatory variables meant 127 leases were included in the final regression model. The final model did not have problems with multicollinearity (linear relationship between two or more variables) or heteroskedasticity (unequal variance) based on statistical tests available in the SAS™ software. Residual plots indicated, however, that the regression tended to over-predict relatively cheap leases and under-predict the most expensive leases. This result has potential serious consequences with respect to bias in the regression parameter estimates. We believe the necessary exclusion of a quality variable like average acres/AUM for the lease caused this statistical problem. It would be expected that higher price leases would be of superior quality but as noted earlier, data limitations precluded calculation of the carrying capacity rating (AUM/acre) for each lease. It should be noted that none of earlier hedonic models about grazing lease rates included rangeland productivity or lease quality as an explanatory variable. This inclusion may partly explain why all of the studies had statistically significant regression results, but a major amount of lease price variation remained unexplained by the models. Consistently low R^2 values across lease rate studies (< 30%) suggest that the market for forage leasing is not well structured or precise, with many different criteria used by individuals when they agree on a lease rate.

The R^2 of the final model was estimated to be 26% (Table 7.1). Only six variables as described below were found to be statistically significant at the 0.10 level. All of the other potential explanatory variables detailed above were systematically considered in alternative regression models but were not statistically significant.

Of the five lessor service categories that were relevant for the leases and had enough variability in the data to be considered in the hedonic model (DPEQUIP, DMEQUIP, DCONTROL, DSALT, and DSUPP), only DCONTROL was statistically significant. The hypothesis

that the regression parameters for the other four service variables are jointly equal to zero could not be rejected. Significance of the DCONTROL variable suggests that when the lessor managed, moved and tended the livestock on the lease, the lease rate was increased by $2.21/AUM. As a percentage of the mean lease rate paid ($16/AUM) this is a 14% increase in lease rate. DCONTROL was somewhat correlated with the four other service variables with correlation coefficients ranging between 26% for provision of equipment to 66% for providing supplements. The DCONTROL variable likely captured some of the other service provision effects. As shown in Table 6.10, only 17% of the time was the lessor involved in the daily care of livestock, but a higher lease rate was charged when they did provide this service.

Statistical significance of service variables in other lease rate studies has varied, but service variables have not been consistently defined. Similar to the findings of this study, Torell and Bledsoe (1990) found daily control and care of cattle to be an important factor influencing lease rates, along with provision of livestock water on the lease. Rimbey et al. (1992) found two services to be statistically important for Idaho leases, lessor provision of improvement maintenance and liability insurance. A later study that combined data from Idaho, New Mexico and Wyoming (Rimbey et al. 1994) found care of cattle and maintenance of the water supply by the lessor to be important lease rate determinants. Bioeconomics, Inc. (2011) found two service variables to be statistically significant, lessor participation in water development costs and fence maintenance activities. It is not clear what other service categories were considered in the latter study (conducted in Montana) that were not statistically significant and excluded from the hedonic model. While the definition of service categories and significance has varied across studies, results are consistent; if the lessor had a significant input in providing daily livestock care and improvement maintenance then lease prices are higher.

Table 7.1 Hedonic Regression Model Results

Dependent Variable: Reported $/AUM lease rate						
Number of Observations Read						132
Number of Observations Used						127
Number of Observations with Missing Values						5

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value		
Model	6	654.27774	109.04629	7.17		
Error	120	1825.40359	15.2117			
Corrected Total	126	2479.68133				
Root MSE	3.92845		R-Square	0.26639		
Dependent Mean	16.00511		Adj R-Sq	0.227		
Coeff Var	24.54494					

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	Intercept	1	14.03544	0.58915	23.82	<.0001
Dcontrol	Daily Livestock Management	1	2.20824	0.85539	2.58	0.011
DPayette	Payette Region	1	1.86688	1.03056	1.81	0.0726
Deast	Eastern Region	1	1.42954	0.81094	1.76	0.0805
Dyearlings	Yearlings on the lease	1	3.52751	1.07336	3.29	0.0013
Dsheep	Sheep on the lease	1	-2.58727	1.55796	-1.66	0.0994
Irrigated	% of land Irrigated	1	0.02161	0.01317	1.64	0.1035

Average lease rates in the Northern, South Central, and Southwest regions were not statistically different (Table 6.12); regression results indicated this as well. The Eastern and Payette regions were found to have higher lease rates than the three other areas ($\alpha < 0.10$). The Payette region had lease rates that were $1.86/AUM more than the Southwest, South Central and Northern regions. The Eastern region was $1.43/AUM higher in price than the three excluded regions. As noted in Section 8, grazing land values in these two regions are influenced by many non-agricultural uses (i.e. scenic views, recreation). Average rangeland productivity per acre is also the highest for these two areas (Table 1.4) and these factors may explain the higher $/AUM rates for these areas.

Leases that were totally on irrigated lands were supposedly excluded from this survey. However, ranch units are included with the leases and include different kinds of land including BLM, USFS, IDL lands, seeded areas, and irrigated lands. Of the 315 leases included in the survey 64 leases included some percentage of the land area that was irrigated. Of the 127 leases included in the regression analysis, 24 had irrigated land on the lease and seven

were over 90% on irrigated land. The percentage of the lease that was irrigated was statistically significant (α = 0.10). This result would be expected given the superior production and reliability of irrigated lands relative to native rangeland. Further, as described in Section 8 of this report, NASS-reported pasture rents appear to be inflated for Idaho relative to other intermountain states because Idaho has a relatively high percentage of irrigated pasture and the increased amount and higher value of irrigated land in the state inflates reported $/acre pasture values. The parameter estimate for the IRRIGATED variable indicates that a 10% increase in the amount of irrigated land would increase $/AUM lease rates by about $0.22/AUM. A lease that was 100% on irrigated pasture would have an average lease rate that was $2.16/AUM more than a lease with native rangeland. As a very similar estimate for Montana, Bioeconomics, Inc. (2011) found an irrigated lease added an additional $2.27/AUM to lease price. Other variables that defined the percentage of the lease on improved (seeded) rangeland, or on crop aftermath, were not statistically significant (α > 0.39) and were excluded from the final model.

Excluding the animal class dummy variables (Dyearlings and Dsheep) from the model reduced the R^2 of the model to 18% (not shown in detail). Significance of the animal class dummy variables and the large change in R^2 means even with limited occurrence, when present, the $/AUM lease price was consistently higher when yearlings were included on the lease ($3.53/AUM) and lower when sheep were on the lease (-$2.59/AUM). The likely reason for this finding is that little attention is actually paid by forage lessees and lessors to the size and animal unit equivalency (AUE) level of the animals. That is, while it is standard to adjust for equivalency levels between animal classes (especially for sheep), in practice people may pay a per head rate without strict regard to size and forage consumption equivalency. In the analysis a cow/calf pair was considered to be 1 AUE, a yearling was 0.7 AUE and a sheep was 0.2 AUE (5 sheep per AU). Unless the survey respondent indicated they paid based on an AUM rate, the conversion to an AUM rate used these equivalencies. Survey respondents may have had some other equivalency in mind and we expect that many yearling operators paid by the head with no adjustment in price for the reduced size of yearling cattle. This is explored in greater detail below where the model is used to estimate lease rates when various conditions exist. Nearly all of the yearling operators reported the lease rate on a $/head basis, with an average per head price of $13.83. Sheep producers generally reported the lease rate on a per sheep basis or as a lump sum payment (an average of $2.39/head). Other lease rate studies have adjusted to a $/AUM price basis (Bartlett et al. 2002, Bioeconomics, Inc. 2011) but none of these studies considered whether the animal class on the lease influenced lease price.

Including the dummy variable for landlord control of recreation access was nearly significant (α = 0.11), but the parameter estimate was -1.55 and not positive as expected *a priori*.

Tenant restriction of access was not significant (α = 0.17). Thus, control of parcel access by either the landlord or tenant individually was not found to be an important factor in determining lease prices. A more direct question about whether outside uses were controlled on the lease, regardless the party responsible for the monitoring, may have had a different result.

Many alternative price-influencing factors were also considered as additional explanatory variables in the hedonic analysis. Some of these factors may be significant with a larger and more varied sample, but in many cases lack of significance provides information as well. Most tenants lived close enough to the leased parcel that distance to the lease was not considered in price negotiations (α = 0.22) and this may in fact explain why the parcel was leased by this individual. Season of grazing (α < 0.12) and length of the grazing season (α = 0.49) were not found to influence rental rates. Lease rates were apparently not biased by whether a landlord or tenant responded (α = 0.23), and leases negotiated between related individuals were not found to be discounted relative to the market (α = 0.17). It did not matter whether the lease was verbal or written (α = 0.55).

The size of the lease as measured by AUMs on the lease did not appear to influence lease price when specified in either linear (α =0.86) or log form (α = 0.89). Yet, lack of complete information necessary to calculate AUMs on some of the leases limit the reliability of that conclusion. Other studies have also not found a discount in per AUM lease rates as lease size increases, though Torell and Bledsoe (1990) did find per acre rates were discounted as acreages increased. This may be because larger acreages were less productive and adjusting to a $/AUM basis accounts for these productivity difference. Rimbey et al. (1994) included a lease-price discount for the number of AUMs on the lease but it was not statistically significant in the model.

Pre-or post-payment of the lease made no difference to negotiated lease prices (α = 0.34). This is in contrast to the $0.33/AUM payment timing adjusted included by Rimbey et al. (1992) for a 185 day grazing season when interest charges were in the 10% range. Similarly, in contrast to the findings of this study, in a major study about western public lands grazing, Tittman and Brownell (1984) found that rental rates were generally less when the payment was made prior to grazing.

For the most part Idaho grazing leases were not found to be negotiated as a sophisticated business arrangement. The leases were nearly evenly split between oral and written and most of the leasing agreements were negotiated annually (Table 6.3). Not surprising, and similar to the findings of other lease rate studies, a large amount of variation in lease prices remained unexplained. A significant equation was estimated but the R^2 of the model was

only 26%. This is not unlike the findings of other hedonic models about private grazing leases. One would have expected many of the other variables measured in the survey to play a role in lease price determination. However, these variables are not present in the final regression model because they do not add additional explanatory power to the model beyond knowing the leasing region, the amount of irrigated land, the class of livestock on the lease, and whether the lessor provided a significant role in the daily care and management of livestock. We anticipate that had we been able to include a measure of rangeland productivity as originally planned[12], that this would have improved the predictive power of the model.

7.10 Hedonic Model Estimates of Lease Rates

The hedonic model can be used to estimate lease rates located in different regions with different animal classes and with or without daily livestock care provided. As an example, using the model parameter estimates from Table 7.1 (which are the betas in the equation below), consider the estimated 2011 lease rate for a 100% native range lease in the Eastern region with daily care of cattle not provided by the lessor, and running cow/calf pairs on the lease:

Predicted \$/AUM lease rate = $\widehat{\beta_0}$+ $\widehat{\beta_1}$ Dcontrol + $\widehat{\beta_2}$DPayette + $\widehat{\beta_3}$ Deast + $\widehat{\beta_4}$DYearlings + $\widehat{\beta_5}$ DSheep + $\widehat{\beta_6}$Irrigated

= 14.04 + 2.21 (0) + 1.87 (0) + 1.43 (1) + 3.53 (0) -2.59 (0) + 0.022 (0) = \$15.46/AUM.

The estimated \$/AUM lease rate would increase by \$3.53/AUM to \$18.99/AUM if yearlings were on the lease. Recognizing that the analysis considered a yearling to be 0.7 AUE, the predicted \$/head lease rate for yearling cattle would then be \$13.29/AUM (\$18.99/AUM × 0.7 = \$13.29/head). This result suggests, as noted above, that yearling cattle are in fact discounted in the market place but not by nearly as much as the 0.7 AUE commonly used for animal class conversion. The implied discount is 0.86 (\$13.29/\$15.46 = 0.86). In a similar way the estimated per AUM lease rate with sheep on the lease would be \$12.88/AUM and with five sheep per AUM the average per head lease rate would be \$2.58/head (\$12.88/AUM × 0.2 = \$2.58/head). If six sheep per AUM were used in the conversion the average \$15.46/AUM lease rate paid by cow/calf producers would be obtained. It appears that statistical significance of the animal class dummy variables is because common AUE conversion factors are not what is reflected in the private leased forage market.

[12] An unanticipated survey response was that many survey respondents reported acreage totals across multiple leases such that the acreage included with each particular lease was not obtained so that a valid productivity rating could be computed.

Regional differences in lease rates can be estimated from the hedonic model by assigning a regional dummy variable a coding of one. Assuming cow/calf pairs on the lease, the $/AUM lease rates estimate for the Payette Lakes region would be $15.90/AUM while the Northern, South Central, and Southwest regions would have the same lease rate estimate of $14.04/AUM for a non-serviced lease (Table 7.2). If 10% of the land base on the lease was irrigated the estimated lease rate would increase by an estimated $0.22/AUM (0.02246 × 10).

The hedonic model results are similar, but less than what others have previously found as it relates to landlord services. As described in more detail in Section 5, Bartlett et al. (2002) summarized previous New Mexico and Idaho grazing lease studies and concluded that to estimate net forage value (excluding the value of landlord services) a downward adjustment to about 70% of the average NASS-reported rate was required to account for the contributory value of lessor-provided services. Hedonic models and competitively bid leases for Montana's trust lands supported that conclusion (Bioeconomics, Inc. 2011). The hedonic results of this study suggest a downward adjustment to 86% to 88% when lessor services are not provided (Table 7.2).

Table 7.2 Estimated Lease Price ($/AUM) based on Services Provided/Not provided.

Daily Livestock Management	Eastern	Northern	Payette Lakes	South Central	Southwest
Not Provided (a)	$15.37	$13.73	$15.87	$13.73	$13.73
Provided (b)	$17.62	$15.98	$18.12	$15.98	$15.98
Ratio (a/b)	87%	86%	88%	86%	86%

8 – Idaho Grazing Land Market Analysis

8.1 Overview

Consistent with the larger study, Idaho's 44 counties are divided and analyzed within this section by the five geographical regions, as follows:

Eastern Region— Bannock, Bear Lake, Bingham, Blaine, Bonneville, Butte, Caribou, Clark, Custer, Franklin, Fremont, Jefferson, Lemhi, Madison, Oneida, Power, and Teton.

Northern Region— Benewah, Bonner, Boundary, Clearwater, Idaho, Kootenai, Latah, Lewis, Nez Perce, and Shoshone.

Payette Lakes Region—Adams, Valley, and Washington.

South Central Region— Camas, Cassia, Jerome, Gooding, Lincoln, Minidoka, and Twin Falls.

Southwest Region— Ada, Boise, Canyon, Elmore, Gem, Owyhee, and Payette.

8.2 Approach and Methodology

As part of the study to investigate the private market lease rates for livestock grazing/pasture on native rangelands throughout the state, IDL requested an estimate of current per acre market and tax assessed values for these same types of land.

To conduct this analysis, market data for 111 sales located across the five study regions that closed between January 1, 2010 and December 31, 2011 consisting strictly of rangeland or with multiple land classes having significant rangeland acreage were identified and collected. Table 8.1 presents the regional breakdown for these market sales. As explained in subsequent sections, each region had sales with atypical market factors. Eleven sales were determined to be inconsistent with the study scope, and thus removed from the sample used to conduct this analysis. The final sample consists of 100 market sales.

Table 8.1 Regional Distribution and General Statistics for Market Sales Data

IDL Region	Number of Sales	Total Acres Grazing Land Sales	Maximum $/Acre	Minimum $/Acre	Average ($) Per Acre
Eastern	58	65,463	$3,962	$119	$650
Northern	10	20,552	$3,175	$400	$1,127
Payette Lakes	6	3,867	$1,125	$264	$799
South Central	25	16,090	$1,479	$200	$550
Southwestern	12	5,209	$1,500	$115	$817
Total	**111**	**111,181**			**$696**

Working with cooperating counties, we obtained county assessment data for 2,079 land records consisting solely of rangeland or having multiple land classes with significant private rangeland acreage (320 acres or more) for the same January 2010 through December 2011 period.[13] Each county's County Assessors' office was contacted to provide assessment data for dry grazing/pasture lands within their jurisdiction consisting of 320 acres, or greater. Following the initial email request a letter explaining the purpose of the request was issued by IDL's program manager (Appendix E). In the week following, phone calls were made to each County Assessors' office. To assure comparable data were received in a timely manner, the request was clarified to specifically obtain parcel identification number, assessed value and acreage data for Category 5 dry grazing parcels of 320 acres or more, and for large parcels consisting of other land classes for which the dry grazing (Category 5) lands on the parcel were 320 acres, or greater.

Data were received from county assessors in multiple file formats, including Microsoft Excel® spreadsheets, database files, Adobe portable document format files, and Microsoft Notepad® text documents. All files were converted into Excel database files, sorted, cleaned and verified for accuracy. Each clean county dataset was then added to the master Excel spreadsheet database, and converted to pivot tables to facilitate analyses.

County assessed values for the state were significantly below estimated market values, which is expected given that most assessed values are based on an agricultural use value derived from livestock grazing and a capitalization rate. Table 8.2 provides summary detail for rangeland parcels, reported by county.

Table 8.2 Regional Distribution and General Assessed Parcel Data Statistics

IDL Region	Records (320 Ac+)	Total Acres	Average Acres/Parcel	Average/Acre Assessed Value
Eastern	876	755,202	862	$38
Northern	179	82,099	459	$55
Payette Lakes	455	207,250	455	$47
South Central	233	114,421	491	$67
Southwest	336	436,610	1,299	$56
Total	**2,079**	**1,595,582**	**713**	**$53**

[13] All 44 Idaho counties were contacted by email and/or verbally by phone relative to the tax assessment records request. As necessary disclaimers related to obtaining access to the required data were negotiated between Resource Dimensions and cooperating counties. To the extent possible, Resource Dimensions endeavored to include county-level data in its analysis and development of regional maps presented in this section and other sections of this study. Information for 11 counties is not included for the following reasons: Data provided for Minidoka, Power, and Teton did not contain large grazing land parcels (Category 5 parcels over 320 acres). Assessed value data only is not tracked for Ada and Payette counties. Bannock, Bonner and Fremont counties do not currently track any pertinent data. Cassia, Gem, and Jerome counties were non-responsive.

8.3 Key Considerations

Unlike the housing real estate market, agricultural land values, especially cropland values, have remained strong (Duffy 2011). These increases are being driven by strong agricultural commodity demand and income, low interest rates, and a lack of alternative high-yield investments (AAEA 2011; Messick 2011). The prices paid for Idaho grazing lands in the transactions verified in this study have followed this same general trend.

Several of the sales identified include those described by the appraisal profession as "*puritan sales*", such that the real estate parcel that sold consists of only one land class, and did not include building improvements or other asset values like public and state grazing permits. In this study, such puritan sales included acreage classified only as native range/grazing-type pasture land. Differences in location, quality, condition, access, and non-agricultural influence such as recreational, rural residential, transitional, development pressure, etc., become evident through analysis of market sales.

Variables including sale date, county, location (within county or from nearby town), total deeded acres, total dollar contribution of improvements, land type, number of range/pasture acres, and dollar price per range/pasture acre are treated within the analysis.

When a sale includes multiple land classes with or without building improvements or other assets, it is necessary for the verifying appraiser to allocate the total purchase price to each component. In so doing, she/he depends on other puritan sales of each land class to indicate the appropriate price to assign to the subject sale. Once the verifying appraiser has determined the contributory price of the land components, the remaining amount of the price (i.e., the residual) is assigned to the buildings and/or other assets included in the purchase. Puritan sales carry a great deal of weight as they are subject to the least amount of analysis and judgment by the appraiser. About two-thirds of the 111 sales were adjusted in price for improvement and asset contributions. Only one sale included a BLM allotment and two had state trust permits with price adjustments made ($125/AUM for the BLM permit and $75/AUM for the two state land permits).

Appendix F contains pertinent information for the 100 sales that were used to develop regional market estimates. The market values estimated for this study have been completed in conformance with the Uniform Standards of Professional Appraisal Practice, and is supported by the certification found in Appendix G. The market value estimate is not a statistical analysis of grazing land prices; thus, no tests were conducted for statistical differences of value by area or county. A hedonic model was used to estimate grazing land value differences in an earlier study of Great Basin ranches (Rimbey et al. 2007) and

statistical differences found in this earlier 2007 study are noted and compared to values reported here when estimated for the same region.

The Great Basin sales included In the Rimbey et al. study were negotiated over the 1998 – 2004 period. This period was before rapid increases in value were observed during 2005 and 2006 (USDA-NASS 2011b). The earlier study focused on the value of state and federal land grazing permits and concluded that federal (BLM and USFS) grazing permits on ranches with a significant amount of public land on the ranch contributed about $150 to $200/AUM to the value of the ranch. Similarly, state trust lands were estimated to add about $110 to $170/AUM to ranchland value for ranches with significant amounts of interspersed public and state trust lands, as is common in many parts of southern Idaho.

Factors Influencing Grazing Land Values

Several factors influence the highest and best use, respective prices paid, and indicated values for grazing land in Idaho. Appraisers typically adjust appraised prices based on key factors including location, quality, condition, legal and physical, access, zoning ordinances, and non-agricultural use for outdoor recreation (e.g., hunting, fishing), rural recreational/residential home sites, and holding value while in transition from one use to another.

For grazing purposes, location is important with distance from the ranching headquarters, or base, impacting the expense to trail or truck livestock to and from the grazing unit. The location and availability of public grazing privilege relative to the private/deeded land has similar desirability. Regional location, ranch size, steepness of terrain, the relative amount of deeded, state trust land and federal land along with livestock income earnings per acre were the major statistically important factors found by Rimbey et al. (2007) to influence the market value of Great Basin ranches.

Location is tied closely to quality which includes annual precipitation and weather patterns to stimulate growth throughout the season of use, type of vegetation (amount, palatability, and quality of forage grasses; trees for shade), and the availability of stock water from rivers, streams, creeks, and springs.

Physical access is important for movement of livestock by herding or with trucks. Topography, natural barriers, road base for all weather travel, and condition add or detract from the ease of operation and value. If physical access is adequate, but is not legally assured, the negative impact on value is significant, and may be prohibitive to marketability, unless the buyer/owner has legal access from adjacent lands. Likewise, legal access with difficult or impossible physical access has a strong negative impact on rangeland value.

Factors that impact the productivity, expenses, and net income associated with dry grazing land have a significant impact on grazing land price and value. Rimbey et al. (2007) found differences in ranch income earning potential to be an important factor explaining price differentials for Great Basin ranches. However, over time there has been an increasing realization that ranchland values are influenced by many factors not related to livestock production. The desire for a rural lifestyle and agrarian values have significantly inflated the market value of both farms and ranches (Doye and Brorsen 2011). Corresponding to this desire, more recent hedonic agricultural land valuation models have emphasized amenity values like scenic views and recreational opportunities on the property (Bergstrom and Ready 2009). Thus, location, access, topography, and zoning ordinances would be expected to impact the price, value, and marketability of lands for non-agricultural uses including outdoor recreation and rural recreational/residential home sites. Factors impacting the profitability of recreational-type grazing land may be much less important to the value than are the lifestyle, recreational amenities and aesthetic values (e.g. scenery, trees, water, wildlife, and seclusion) associated with the property. Non-production factors explain a large part of the growing disparity between the prices, market values, and assessed values of agricultural versus non-agricultural use of pastureland (Doye and Brorsen 2011).

8.4 Regional Grazing Land Market Value Estimates

Eastern Region

A total of 60 sales were initially identified for the Eastern region, two sales were removed from the analysis as lands were purchased for non-grazing use. The 58 sales used in the market analysis for the Eastern region are summarized in Table 8.3. Per acre prices during 2010 and 2011 range from a low of $119 for 160 acres of desert grazing northwest of Springfield in Bingham County to a high of $3,962 for 159 acres of mountain grazing under very strong recreational influence three miles northwest of Freedom, Wyoming on the Idaho side of Star Valley. This extreme range indicates significant differences in land quality, location, primary use and multiple other factors that impact market prices for grazing land across the region; thus, the challenge to identify meaningful ranges of value. The $631/acre average value for deeded land in the Eastern region is 2.3 times more than the similar estimate ($270/acre) made for the region by Rimbey et al. (2007) for the 2000 – 2004 period. Rimbey et al. found similar recreation influences in the region with many sales near the Wyoming border selling for over $650/acre.

Table 8.3 Eastern Region Grazing Land Market Values, 2010 - 2011

IDL Region / County	Number of Sales	Total Sales Grazing Acres	Average ($) Per Acre
Eastern	**58**	**44,962**	**$631**
Bannock	4	2,675	$502
Bear Lake	4	722	$589
Bingham	8	5,259	$496
Blaine	2	379	$383
Bonneville	5	1,440	$844
Butte	1	1,106	$700
Caribou	9	1,700	$788
Clark	10	23,948	$359
Custer	3	3,695	$766
Fremont	2	131	$1,654
Jefferson	2	2,298	$305
Lemhi	1	158	$753
Madison	2	194	$1,000
Oneida	2	560	$500
Power	2	637	$175
Teton	1	60	$1,611

Table 8.4 provides a market value summary for the Eastern region.

Table 8.4 Market Values Summary - Eastern Region, 2010 - 2011

Land Type	AUMs/Acre Low	AUMs/Acre High	Land Description	Market Range $/Acre Low	Market Range $/Acre High	Assessed Range $/Acre Low	Assessed Range $/Acre High
Good/high quality grazing land with **high** recreational, transitional, or other non-agricultural use	1 to 2	2 to 4	Occasional subby native meadow to primarily foothill, hillside, and medium to higher elevation mountainous terrain, good water, good fences, well blocked.	$1,000	$2,250	$43	$142
Good/high quality grazing land with **modest** recreational influence	1 to 2	2 to 4	Occasional subby native meadow to primarily foothill, hillside, and medium to higher elevation mountainous terrain, good water, good fences, well blocked.	$700	$1,000	$43	$142
Good/high quality grazing land with **little** recreational influence	1 to 2	2 to 4	Occasional subby native meadow to primarily foothill, hillside, and medium to higher elevation mountainous terrain, good water, good fences, well blocked.	$400	$800	$43	$142
Fair/medium quality grazing land	0.25 to 0.20 (4-5 AC/AUM)	0.33 to 0.50 (2-4 AC/AUM)	High desert, foothill, and hillside native sage and grasses, some stock water	$200	$450	$26	$60
Poor/low quality grazing land	0.12 to 0.10 (8-10 AC/AUM)	0.20 to 0.16 (5-6 AC/AUM)	Desert sage and native grasses, limited stock water, low rainfall.	$150	$275	$15	$40

Of the 10 sales whose quality is rated as poor, only two are puritan sales which sold at $119 and $350 per acre. The other eight sales that included poor quality native grazing land ranged between $179 and $260 per acre for desert grazing. Based on these ranges and recognizing the extreme low and high indicated by the two puritan sales, for the purposes of this study we conclude the general range of values for low quality desert sage and native grass grazing to be $150 to $275 per acre.

Of the 14 sales whose quality is rated as fair, eight are puritan sales which sold between $200 and $1,105 per acre. Values for six other sales that also included native grazing land rated as fair quality range between $150 and $375 per acre for foothill, hillside, and high desert grazing. Based on these ranges and recognizing the lowest sale at $150 per acre; the high at $1,105 which included some meadow grazing; and the two $500 sales in Oneida County for which premium prices were paid for live water by an adjacent buyer; we conclude for this study that the range of values for the medium quality foothill, hillside, and high desert native sage/grass grazing is $200 to $450 per acre.

Of the 34 sales whose quality is rated as good for better quality foothill, hillside, and medium to higher elevation mountainous terrain, nine are puritan sales which sold between $400 and $3,962 per acre. The high sale at $3,962 per acre includes significant recreational influence in the Star Valley area of western Wyoming not representative of similar properties in Eastern Idaho. Therefore, little or no consideration is given to this sale. The other 25 sales range in price between $200 and $2,250 per acre. The $200 per acre sale was a distressed lender sale; thus, sold significantly below market and is not given consideration. The upper end of the range includes seven sales that sold at $1,015 to $2,250 per acre being strongly influenced by recreational, transitional, and subby meadow factors. The remaining 18 sales range in price from $298 to $1,000 per acre. Within this range, there is a clear separation between those with little or no recreational influence and those that have modest recreational influence. Based on the market data, we determine the range of values for good quality foothill, hillside, and mountainous native grazing having little recreational influence is $400 to $800 per acre and $700 to $1,000 per acre with modest recreational influence. The range of values for good quality foothill, hillside, and mountainous native grazing having high recreational influence is $1,000 to $2,250 per acre.

Those counties of the Eastern region in which the use of grazing land is for livestock production, with little non-agricultural influence from recreation or development, consistently have lower assessed values (Table 8.5). Counties of the region that have better quality, more scenic rangeland with greater recreational amenities have the stronger/higher assessed values. Custer County is the only county that does not fit these parameters with a

range of assessed values from $46 to $2,560 per acre, suggesting some lands, while classified as rangeland, are being assessed on a non-agricultural use.

Table 8.5 Eastern Region Grazing Land Assessed Values, 2010 - 2011

IDL Region / County	Records (320 Ac+)	Average Acres/Parcel	Average $/Acre Assessed Value
Eastern	**876**	**862**	**$38**
Bear Lake	2	150,658	$94
Bingham	37	320	$33
Blaine	167	850	$29
Bonneville	82	418	$28
Butte	66	433	$32
Caribou	137	470	$50
Clark	215	462	$42
Custer	11	393	$47
Franklin	41	420	$38
Jefferson	33	436	$30
Lemhi	42	429	$52
Madison	9	492	$44
Oneida	34	444	$42

Figure 8.1 provides summary level assessment of market and assessed values for grazing lands in the Eastern region. The market value locations depicted in Figure 8.1 and corresponding figures for each region are developed using GIS to estimate the area based on locational information from original sales data and cross-referenced against zip code using parcel-based GIS files.

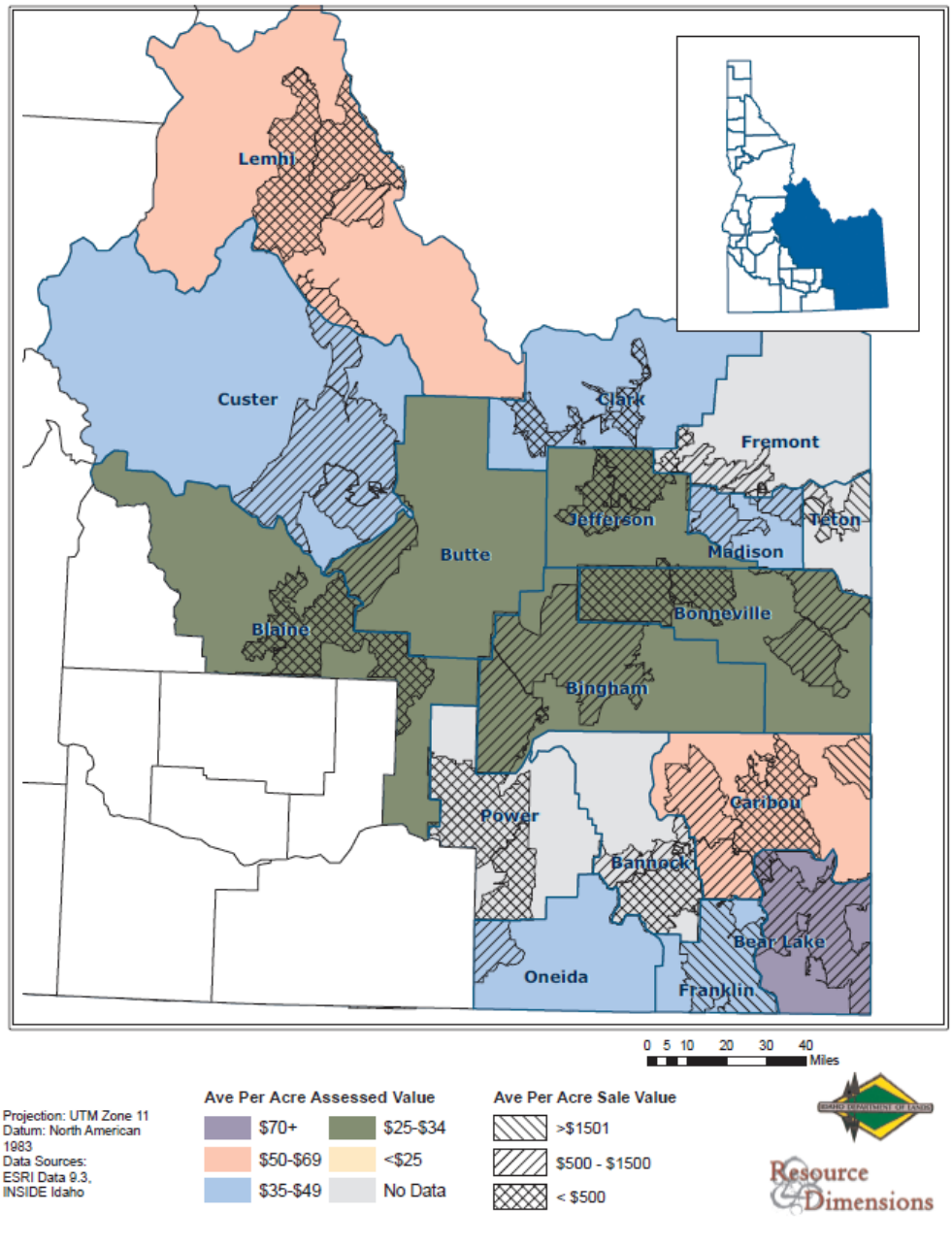
Market sales as shown are intended to give a general reference point for active 2010-2011 sales used in developing value estimates. As expected, these areas are where most of the private land holdings are located as well as where the livestock industry and native grazing land is most prevalent.

From this data, the relationship/ratio between assessed values and market values can be analyzed. In Eastern Idaho, based on the average price per acre of $631 and the average assessed value of $38 per acre, we estimate the assessed value at about 6% of market value. The same calculation can be done for each county.

The market range for each land type in Table 8.4 reflects assessed values ranging between $15 and $142 per acre compared with market values running between $150 and $3,962 per acre. It is important to note that the assessments and market values may not apply to the

same parcels of land. This range of ratios is 3.6% to 10%. Similarly, percentages can be calculated for each land type from low to high.

Figure 8.1 Eastern Region Grazing Land Value Trends, 2010 - 2011



Northern Region

Seven of the ten sales identified in the Northern region are summarized in Table 8.6. Three of the sales subject to strong non-agricultural factors, are not used in the market analysis. Fifty-five (55) acres of rolling topography near Troy sold for $2,676 per acre due to residential pressure from Moscow, while 48 acres of land with rolling topography near Deary with slight rural residential influence not exposed to the market sold at $1,300 per acre. Forty (40) acres of rolling pasture with some timber four miles south of Plummer sold at $3,675 per acre due to strong non-agricultural factors. No sales were identified for Nez Perce, Shoshone, Kootenai, Bonner or Boundary counties. These are smaller counties with few cattle and sheep, and a sizeable percentage of total acreage is public land. Per acre prices, for the seven remaining sales, range from a low of $400 for 64.5 acres of fair quality Palouse foothill grazing land to $850 per acre for 100 acres of hillside and benches with recreational influence, sold to an out-of-state buyer. Each of the three puritan sales are classified as good quality, and range from $417 per acre for rolling grass with draws and benches and slight recreational influence to $842 per acre for gently rolling foothills too wet to farm with some aesthetic amenity value.

Table 8.6 Northern Region Grazing Land Market Values, 2010 - 2011

IDL Region / County	Number of Sales	Total Sales Grazing Acres	Average ($) Per Acre
Northern	**7**	**20,409**	**$588**
Clearwater	1	100	$850
Idaho	4	20,150	$507
Lewis	2	160	$621

The Northern region does not include the arid desert type sagebrush and native grass type grazing land found in the South Central, Southwest, and western portions of the Eastern regions. None of the identified sales are classified as poor quality (Table 8.7).

Table 8.7 Market Values Summary - Northern Region, 2010 - 2011

Land Type	AUMs/Acre Low	AUMs/Acre High	Land Description	Market Range $/Acre Low	Market Range $/Acre High	Assessed Range $/Acre Low	Assessed Range $/Acre High
Good/high quality grazing land with modest to significant recreational influence	1 to 2	2 to 3	Gently rolling Palouse foothill/hillside to medium elevation benches/draws with native grasses and scattered timber, some stock water	$800	$850	$132 ($300 w/timber)	$300 ($750 w/timber)
Good/high quality grazing land with little recreational influence	1 to 2	2 to 3	Gently rolling Palouse foothill/hillside to medium elevation benches/draws with native grasses and scattered timber, some stock water	$400	$550	$30	$187
Fair/medium quality grazing land with modest to strong recreational influence	0.25 to 0.14 (4-7 AC/AUM)	0.33 to 0.5 (2-3 AC/AUM)	Gently rolling Palouse foothill/hillside to medium elevation benches/draws with native grasses and scattered timber, some stock water	$800	$850	$40	$100
Fair/medium quality grazing land with litte/no recreational influence	0.25 to 0.14 (4-7 AC/AUM)	0.33 to 0.5 (2-3 AC/AUM)	Gently rolling Palouse foothill/hillside to medium elevation benches/draws with native grasses and scattered timber, some stock water	$400	$550	$15	$30

The Northern region is a sparsely populated area of the state; wherein two sales classified as fair quality sold at $400 and $540 per acre while the five sales classified as good quality range from $417 to $850 per acre. The two higher priced properties selling at $842 and $850 per acre reflect more significant recreational influence whereas the other five sales, of which two are classified as fair and three as good, indicate a narrowly consistent range of $400 to $544 per acre. Thus, for purposes of this study we determine the range of values for the medium and good quality rolling foothill/hillside to medium elevation mountainous type native grass grazing land with scattered timber to be between $400 and $850 per acre. Values for lesser quality lands are between $400 and $550, while values for better quality lands with stronger recreational influence are between $800 and $850 per acre.

As in the Eastern region, those counties in which the use of grazing land is for livestock production with little non-agricultural influence from recreation or development consistently have lower assessed values. Counties with better quality, more scenic rangeland with greater recreational amenities have the higher assessed values. Benewah, Clearwater, Kootenai, and Shoshone counties can be considered outliers as they have a much higher range of assessed values, suggesting some lands are being assessed on a non-agricultural use (Table 8.8).

Table 8.8 Northern Region Grazing Land Assessed Values, 2010 - 2011

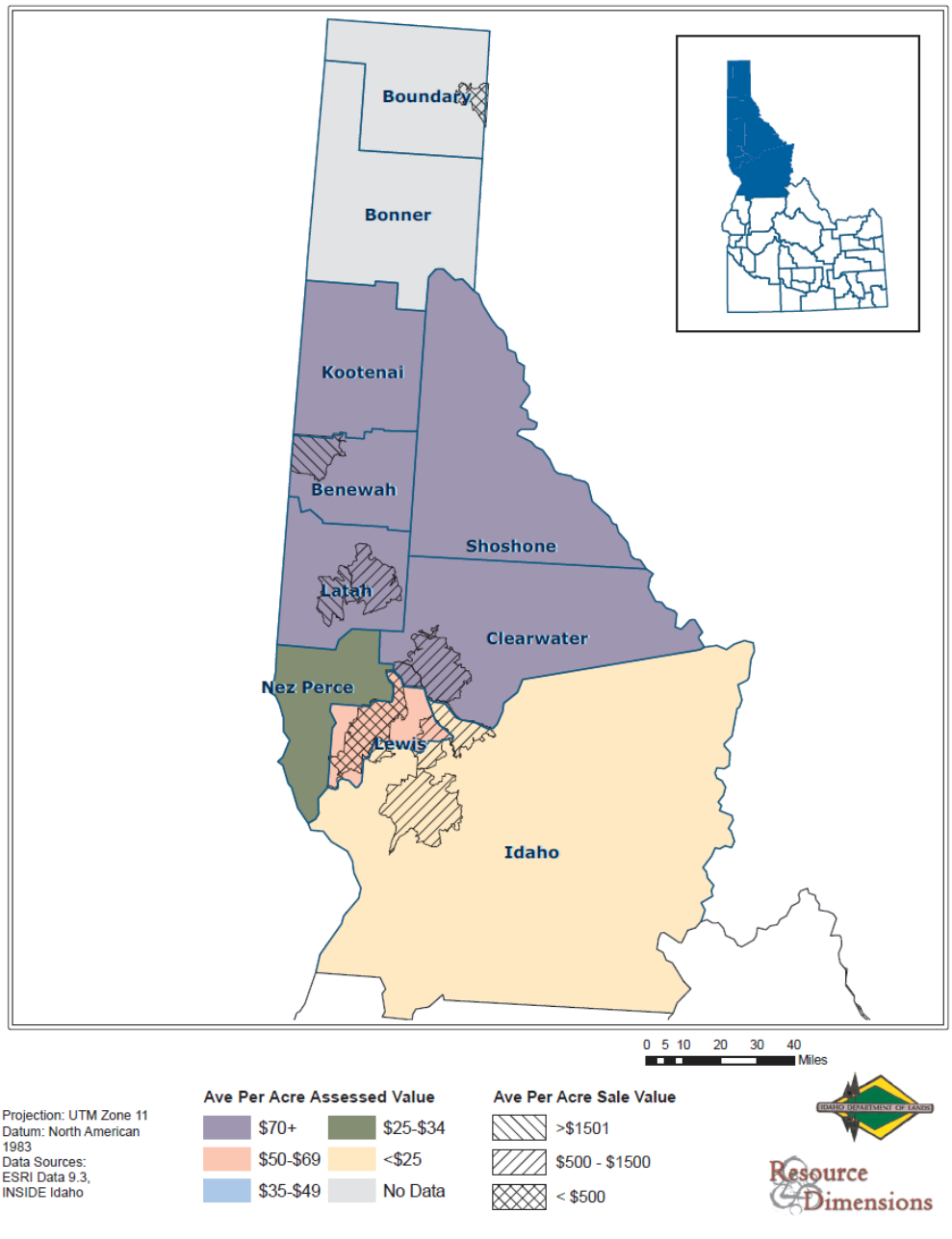
IDL Region / County	Records (320 Ac+)	Average Acres/Parcel	Average $/Acre Assessed Value
Northern	**179**	**459**	**$55**
Benewah	2	376	$354
Clearwater	5	684	$191
Idaho	104	470	$19
Kootenai	6	376	$516
Latah	2	341	$100
Lewis	24	454	$62
Nez Perce	35	425	$29
Shoshone	1	360	$363

Figure 8.2 provides a snapshot of market and assessed value trends for grazing lands in the Northern region. Shown are locations, by county, where the market has been active in 2010-11. These areas, as expected, are where most of the private land holdings are located as well as where the livestock industry and native grazing land is most prevalent.

The relationship between assessed and market values for the Northern region, based on the regional average price per acre of $588 and an average assessed value of $55 per acre, is 9.4%.

The market range for each land type in Table 8.7 indicates assessed values ranging between $15 and $300 per acre compared with market values between $400 and $850 per acre. This ratio ranges from 3.8% to 35.3%. As previously noted, assessed values are significantly below estimated market values because they are based on an agricultural use value derived from livestock grazing and a capitalization rate. The more recreational and other non-agricultural influence in the market, the lower the percentage of assessed value to market value. Yet, if the county includes recreational influence in its assessed value, the percentage will be higher.

Figure 8.2 Northern Region Grazing Land Value Trends, 2010 - 2011



Payette Lakes Region

Four sales were identified in the Payette Lakes region, two of the sales were not used in the market estimate analysis as they involved improved pasture with a high lift water right and irrigated pasture/river habitat. No sales were identified in Valley County, a large portion of which is public land (Table 8.9).

Table 8.9 Payette Lakes Region Grazing Land Market Values, 2010 - 2011

IDL Region / County	Number of Sales	Total Sales Grazing Acres	Average ($) Per Acre
Payette Lakes	**2**	**1,761**	**$667**
Adams	2	1,761	$667

The two remaining sales are both puritan sales for which the per acre prices range from $264 for 907 acres of fair quality hillside sage grazing with few trees and limited access, to 854 acres of good quality foothill type topography with some Conservation Reserve Program acres, two reservoirs, and recreational influence purchased by the adjoining owner for $1,070. Table 8.10 provides a cursory market sales summary for the Payette Lakes region.

Table 8.10 Market Values Summary - Payette Lakes Region, 2010 - 2011

Land Type	AUMs/Acre Low	AUMs/Acre High	Land Description	Market Range $/Acre Low	Market Range $/Acre High	Assessed Range $/Acre Low	Assessed Range $/Acre High
Good/high quality grazing land with **modest** to **significant** recreational influence	1 to 2	2 to 4	Scattered open subby meadows to primarily foothill, hillside, and medium to higher elevation mountainous terrain, good water, good fences, well blocked.	$700	$1,100	$60	$182
Good/high quality grazing land with **little** recreational influence	1 to 3	2 to 4	Scattered open subby meadows to primarily foothill, hillside, and medium to higher elevation mountainous terrain, good water, good fences, well blocked.	$400	$800	$36	$102
Fair/medium quality grazing land	0.25 to 0.14 (4-7 AC/AUM)	0.33 to 0.25 (3-4 AC/AUM)	Foothill and hillside native sage and grasses, some stock water	$200	$450	$24	$63

The Payette Lakes region does not include the arid desert type sagebrush and native grass type grazing land found in the Southwest, South Central, and western portions of the Eastern regions. It is also not as heavily populated as the Southwest region. It is more similar to the eastern and northern portions of the Eastern region (less densely populated) as indicated by the two identified sales that fit well within the range of values for the Eastern region. Thus, based on available market data for this study, the range of values for moderate quality foothill and hillside native sage/grass grazing land is $200 to $450 per acre. The range of values for good quality foothill and mountainous native grazing is $400 to $800 per acre having little recreational influence and $700 to $1,100 per acre with modest to significant recreational influence.

As in the Eastern and Northern regions, those counties in which the use of grazing land is for livestock production with little non-agricultural influence from recreation or development consistently have lower assessed values (Table 8.11). Counties with better quality lands, more scenic rangeland and greater recreational amenities have higher assessed values.

With a much higher range of assessed land values, ranging from $63 to $548, Valley County does not fit this description, which suggests some lands are assessed based on a higher, non-agricultural use.

Table 8.11 Payette Lakes Region Grazing Land Assessed Values, 2010 - 2011

IDL Region / County	Records (320 Ac+)	Average Acres/Parcel	Average $/Acre Assessed Value
Payette Lakes	**455**	**455**	**$47**
Adams	99	447	$42
Valley	4	448	$240
Washington	352	458	$47

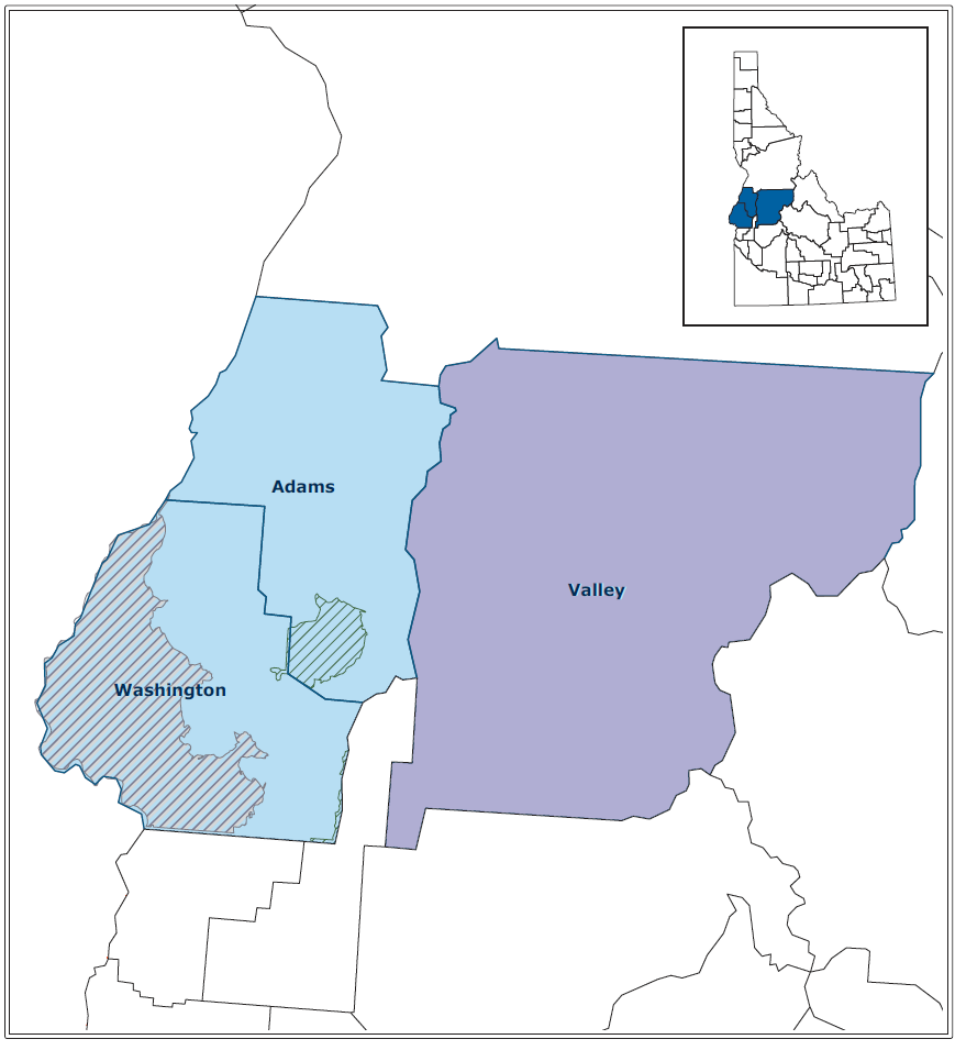
As for previous regions, Figure 8.3 provides summary level trend assessment of average market and average assessed values for grazing lands in the Payette Lakes region.

Locations for the market values are developed using GIS as previously stated. Shown are those areas, by county, where the market has been active in 2010-2011. Again, as anticipated, these areas are where most of the private land holdings are located and where the livestock industry and native grazing land is most prevalent.

Based on the average price per acre of $667 and an average assessed value of $47 per acre, the relationship/ratio between assessed values and market values for the Payette Lakes region is 7.1% of market value.

The market range for each land type in Table 8.10 indicates assessed values between $24 and $182 per acre compared with market values between $200 and $1,100 per acre. Thus, the ratio range is between 12% and 16.6%.

Figure 8.3 Payette Lakes Region Grazing Land Value Trends, 2010 – 2011



South Central Region

Twenty-two sales in the South Central region and three sales in Box Elder County, Utah directly across the state line from Cassia County (Table 8.12) are use in the market value determination later in this section. Three sales identified were purchased for non-grazing use, with prices paid ranging between $996 and $1,479 per acre and are not used in estimating rangeland values for the region. For the 22 sales, the per acre prices range from a low of $250 for 1,200 acres of desert grazing just south of the Idaho/Utah state line in Box Elder County, to a high of $677 for 4,208 acres of good quality valley to foothill native grazing 15 miles west of Fairfield in Camas County.

Table 8.12 South Central Region Grazing Land Market Values, 2010 - 2011

IDL Region / County	Number of Sales	Total Sales Grazing Acres	Average ($) Per Acre
South Central	**22**	**15,366**	**$451**
Camas	2	6,694	$618
Cassia	8	2,981	$478
Gooding	2	341	$448
Jerome	2	261	$346
Lincoln	3	419	$367
Minidoka	3	597	$474
Twin Falls	2	4,073	$375

For the ten sales whose quality is rated as poor, only three are puritan sales which sold at $325, $350, and $548 per acre. The other seven sales that included native grazing land rated as poor quality, range in price between $300 and $550 per acre for desert grazing. The two highest prices of $548 and $550 per acre were paid for parcels with strong non-agricultural influence being near the river with gravel pit potential. The remaining eight sales range between $300 and $470 per acre. Although these sales are low quality native desert sage grazing land, in each case they were either part of an irrigated farm or included undeveloped grazing acreage already under the buyer's pivot for which the buyer had strong motivation to acquire. Based on these ranges, the range of values determined for low quality desert sage and native grass grazing is between $300 and $450 per acre. This market segment and rangeland is located in those areas of the region where there is a strong presence of irrigated and/or dairy farm operations looking to acquire adjacent or nearby native desert range land for control or development potential.

Of the four sales whose quality is rated as fair, two of these are puritan sales which sold for $313 (buyer can irrigate the purchased area) and $400 (desert sage) per acre. The other two sales, which also included native grazing land rated as fair quality, sold for $250 (Box Elder

County, Utah) and $350 per acre for desert grazing. Based on these ranges and recognizing the lowest sale at $250 per acre and a high of $400; the range of values for medium quality desert native sage/grass grazing is determined to be $275 to $375 per acre. This market segment and rangeland is located in those more isolated areas of the region best adapted to livestock production, and in which there is little or no presence of irrigated and/or dairy farm operations looking to acquire adjacent or nearby native desert rangeland for control or development potential.

For the eight sales whose quality is rated as good (having better quality valley to foothill and medium elevation mountainous terrain), three are puritan sales which sold at $250 and $559 per acre. The two low sales at $250 per acre in Box Elder County were sold under financial duress. Therefore, these sales are given less consideration in this evaluation. The other five sales ranged between $295 and $677 per acre. The lower end of the range includes three sales between $295 and $400 per acre having less recreational influence. The upper end of the range includes three sales that sold between $500 and $677 per acre with recreational factor influence. Based on this market data, the determined range of values for good quality foothill to medium elevation mountainous native grazing is $300 to $400 per acre with little recreational influence and $500 to $675 per acre with modest recreational influence.

Table 8.13 presents a market sales summary for the 22 sales used to evaluate market prices for rangeland in the South Central region.

Table 8.13 Market Values Summary - South Central Region, 2010 - 2011

Land Type	AUMs/Acre Low	AUMs/Acre High	Land Description	Market Range $/Acre Low	Market Range $/Acre High	Assessed Range $/Acre Low	Assessed Range $/Acre High
Good/high quality grazing land with **modest** recreational influence	1 to 2	2 to 3	Primarily valley, foothill, and medium elevation mountainous terrain, good stock water, well blocked.	$500	$675	$50	$115
Good/high quality grazing land with **little** recreational influence	1 to 2	2 to 3	Primarily valley, foothill, and medium elevation mountainous terrain, good stock water, well blocked.	$300	$400	$50	$115
Fair/medium quality grazing land	0.20 to 0.16 (5-6 AC/AUM)	0.33 to 0.25 (3-4 AC/AUM)	Desert native sage and grasses, some stock water, more isolated areas with little or no presence of irrigated and/or dairy farm operations looking for control or development potential.	$275	$375	$25	$90
Poor/Low quality grazing land	0.12 to 0.10 (8-10 AC/AUM)	0.20 to 0.16 (5-6 AC/AUM)	Desert native sage and grasses, little stock water, areas with presence of nearby irrigated and/or dairy farm operations looking for control or development potential.	$300	$450	$15	$70

Lincoln and Gooding counties where the use of grazing land is predominantly for livestock production with little non-agricultural influence have the lowest assessed values (Table 8.14). Camas County with better quality, more scenic rangeland and greater recreational amenities has higher assessed values. However, Twin Falls County does not fit this profile having a much higher range of assessed values from $52 to $549, indicating some lands are assessed at a higher non-agricultural use value.

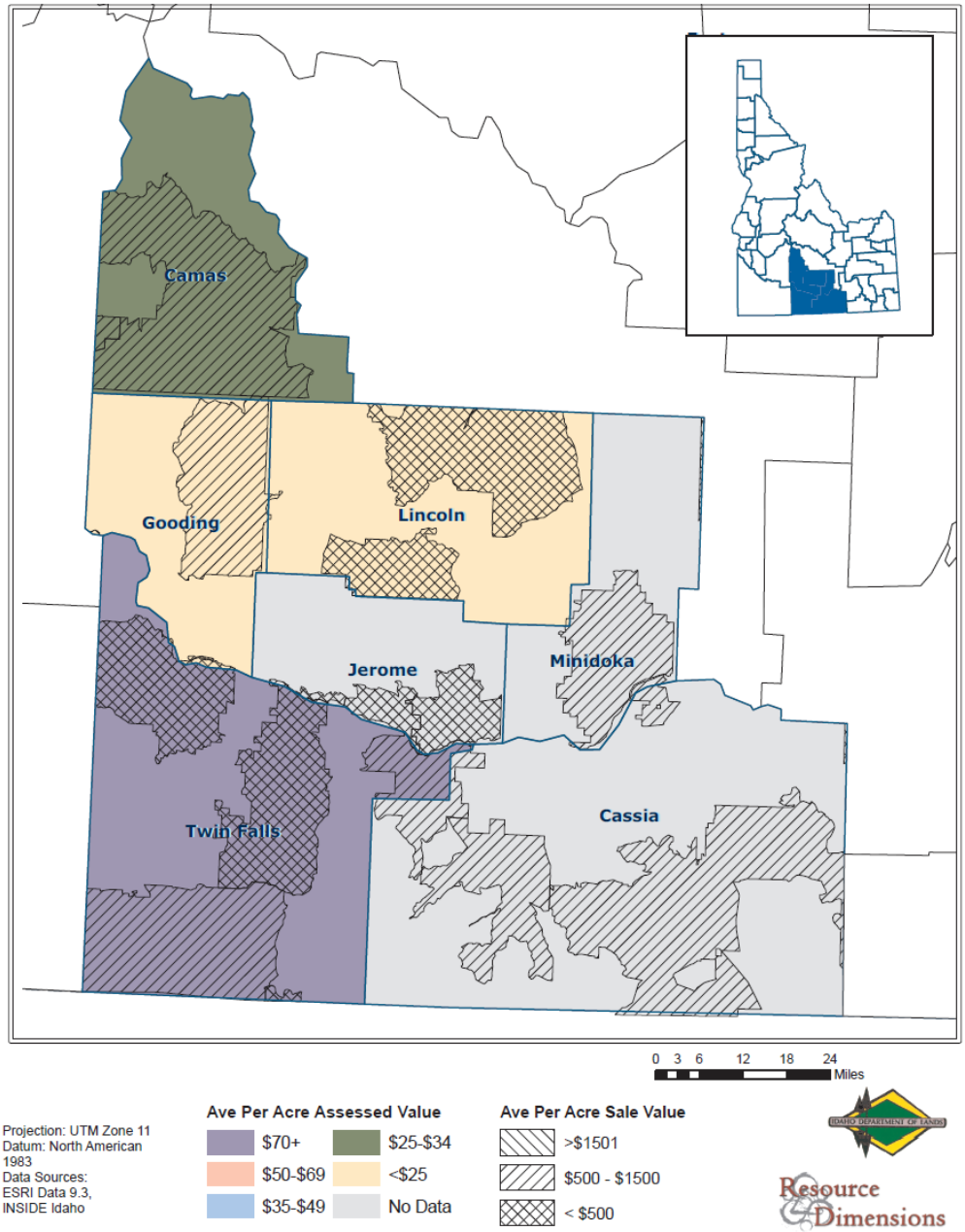
Table 8.14 South Central Region Grazing Land Assessed Values, 2010 - 2011

IDL Region / County	Records (320 Ac+)	Average Acres/Parcel	Average $/Acre Assessed Value
South Central	**233**	**491**	**$67**
Camas	89	439	$29
Gooding	11	381	$21
Lincoln	1	10,957	$27
Twin Falls	132	456	$96

Figure 8.4 provides a summary assessment of average market and average assessed values for grazing lands in the South Central region. These locations are not intended to precisely identify the location of the particular sale, but rather to provide a general reference point of market sales activity in 2010-2011.

The relationship/ratio between average assessed value and average market value for the South Central region is 14.9% of market value, based on the average price per acre of $451 and the average assessed value of $67 per acre. The market range for each land type in Table 8.13 shows assessed values ranging between $15 and $115 per acre compared with market values running between $300 and $675 per acre. Thus, the ratio range is 5% to 17%.

Figure 8.4 South Central Region Grazing Land Value Trends, 2010 - 2011



Southwest Region

Twelve sales were identified for the Southwest region. Three of the identified sales were purchased for non-grazing use as indicated by the high prices paid between $1,000 and $1,500 per acre; thus they are not included in the market value estimate for this region. Two sales were purchased at a premium by a friend (looking for recreational and residential property) willing to help the seller in financial trouble. One sale in the valley floor of Canyon County south of Lake Lowell was influenced by residential pressure. There are no sales in Ada County which has little or no grazing type land or in Boise County which is primarily public lands. Of the remaining nine sales, prices range from a low of $115 per acre for 280 acres of low quality desert grazing land northwest of Mountain Home in Elmore County, to a high of $1,489 per acre for 611 acres of fair quality desert sage grazing land with strong recreational influence given its location on the North Fork of the Owyhee River in Owyhee County. The $755 per acre average 2010-2011 market value (Table 8.15) is about 3.8 times greater than the approximate $200 per acre value estimated for deeded lands in the southwest region by Rimbey et al. (2007) for the 1997-2004 period.

Table 8.15 Southwest Region Grazing Land Market Values, 2010 - 2011

IDL Region / County	Number of Sales	Total Sales Grazing Acres	Average ($) Per Acre
Southwest	**11**	**5,109**	**$755**
Elmore	2	1,197	$354
Gem	1	2,049	$340
Owyhee	7	1,680	$997
Payette	1	183	$275

In the Southwest region only one identified sale is rated as poor, being low quality desert sage and native grasses having no non-agricultural influence (which is uncommon for this region). This sale included 280 acres at a price of $115 per acre. There is one other sale of high desert sage classified as fair quality grazing located more than five miles north of Payette which sold at $275 per acre, also with little non-agricultural influence. Given the sales range of $115 to $275 and lack of market data, reference is made to those sales in the Eastern region classified as poor quality for which the range of values for the low quality desert sage and native grass grazing land is $150 to $275 per acre. Based on these comparisons, the range of values determined for low quality desert sage and native grass grazing in the Southwest region is $125 to $225 per acre.

The five sales whose quality is rated as fair, four of which are puritan sales, sold for $275 to $1,489 per acre. As noted above, the $275 per acre sale had little non-agricultural influence.

The other four sales, all puritans comprised of high desert sage and native grasses, indicate a narrower range between $610 and $1,489 per acre. Another three sales classified as good quality grazing (one each in Elmore, Owyhee, and Gem counties) sold between $340 and $593 per acre. These seven sales range from $340 to $1,489 per acre. The primary factors evident from this wide range are recreational amenities, development influence, and buyer motivation. The impact of the differences between fair and good quality are negligible. There are three identifiable ranges indicated by these seven sales. The two lower sales at $340 and $500 per acre are both good quality having slight recreational influence. The next three higher sales are at $593, $609, and $700 per acre. One sale at $593 per aces was located in Elmore County about 20 miles west of Fairfield with valley and foothill sage/grass. The other two sales are high desert sagebrush grazing in Owyhee County with medium recreational influence near wilderness areas or BLM inholdings. The two highest sales ($1,431 and $1,489 per acre) reflect very strong recreational amenity influences from the North Fork of the Owyhee River and BLM inholdings. Based on these ranges, the range of values determined for medium and good desert native sage/grass to foothill and mountainous grazing is $350 to $500 per acre with slight recreational influence; $600 to $700 per acre with moderate recreational influence; and, $1,000 to $1,500 with unique recreational amenities and appeal.

Table 8.16 presents a market sales summary for the 11 sales used to estimate market price ranges for grazing land in the Southwest region.

Table 8.16 Market Values Summary - Southwest Region, 2010 - 2011

Land Type	AUMs/Acre Low	AUMs/Acre High	Land Description	Market Range $/Acre Low	Market Range $/Acre High	Assessed Range $/Acre Low	Assessed Range $/Acre High
Good/high quality and medium/fair quality grazing land with **high** recreational, and unique amenities and appeal	0.12 to 0.14 (6-7 AC/AUM)	0.25 to 0.20 (4-5 AC/AUM)	Primarily valley, high desert, and foothill, terrain, fair to good stock water, well blocked.	$1,000	$1,500	$138	$331
Good/high quality and medium/fair quality grazing land with **modest** recreational, and unique amenities and appeal	0.16 to 0.14 (6-7 AC/AUM)	0.25 to 0.20 (4-5 AC/AUM)	Primarily valley, high desert, and foothill, terrain, fair to good stock water, well blocked.	$600	$700	$75	$119
Good/high quality and medium/fair quality grazing land with **slight** recreational, and unique amenities and appeal	0.16 to 0.14 (6-7 AC/AUM)	0.25 to 0.20 (4-5 AC/AUM)	Occasional subby native meadow to primarily foothill, hillside, and medium to higher elevation mountainous terrain, good water, good fences, well blocked.	$350	$500	$36	$66
Poor/Low quality grazing land	0.11 to 0.10 (9-10 AC/AUM)	0.14 to 0.12 (7-8 AC/AUM)	Desert sage and native grasses, limited stock water, low rainfall.	$125	$225	$24	$35

Of the four counties reporting, for which the use of grazing land is for livestock production with little non-agricultural influence from recreation or development, Canyon and Elmore counties consistently have the lower assessed values. Boise County which has better quality, more scenic rangeland with more recreational amenities has slightly higher assessed values. However, on average there is little range across the assessed values for grazing lands in these three counties (Table 8.17).

The outlier, Owyhee County, has a much higher range of assessed values from $24 to $341, with an average of $79 per acre, indicating that some lands are assessed based on recreational factors.

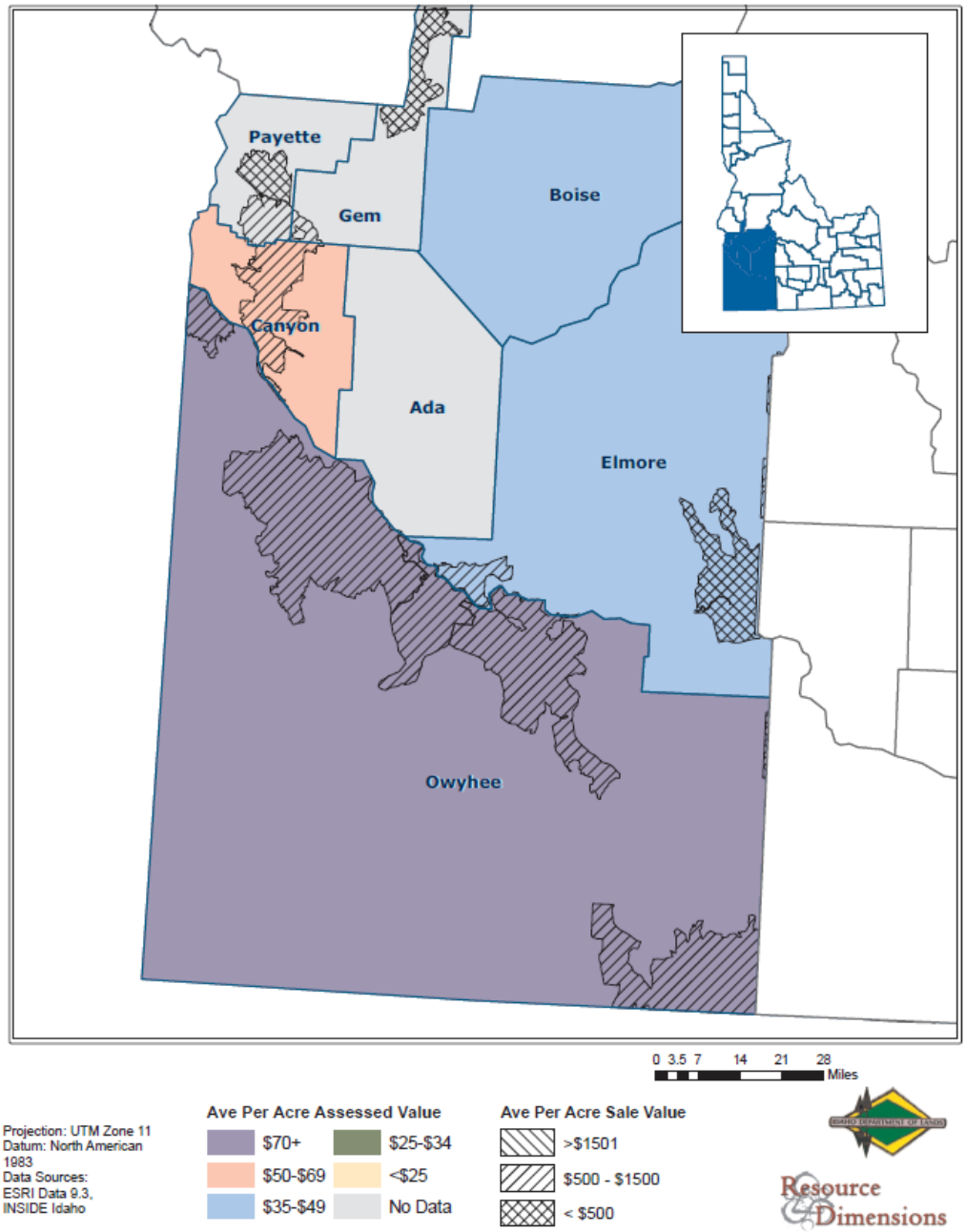
Table 8.17 Southwest Region Grazing Land Assessed Values, 2010 - 2011

IDL Region / County	Records (320 Ac+)	Average Acres/Parcel	Average $/Acre Assessed Value
Southwest	**336**	**1,299**	**$56**
Boise	16	446	$49
Canyon	5	347	$50
Elmore	185	485	$41
Owyhee	130	2,600	$79

Figure 8.5 provides a snapshot assessment of average market values and average assessed values for grazing lands in the Southwest region. The market sales shown indicate where, within each county, the market has been active in 2010-2011. As expected, these are the areas where private land holdings are concentrated, and where the livestock industry and native grazing land is most prevalent.

For the Southwest region the assessed value to market value relationship is 7.4% of market; based on the average price per acre of $755 and the average assessed value of $56 per acre. In Table 8.16, the market range for each land type indicates assessed values range between $24 and $331 per acre compared to market values between $125 and $1,500 per acre. This ratio range is 19.2% to 22.1%.

Figure 8.5 Southwest Region Grazing Land Value Trends, 2010 - 2011



8.5 Idaho Grazing Land Reported Values

In addition to the Great Basin grazing land value study by Rimbey et al. (2007), NASS provides annual estimates of private land grazing lease rates and pasture values from various surveys they conduct with farm and ranch operators. Two key NASS surveys and sources of data are discussed in this report. The NASS pasture market and cash rent survey is discussed in this section dealing with grazing land values and the second lease rate survey was discussed earlier in Section 5 where trends in the agricultural markets are addressed. Annual NASS data is the only consistent reporting of grazing lease rates available for the Western states.

Private Land Grazing Lease Rates and Pasture Values

USDA-NASS Pasture Market Values and Cash Rents Survey

Pasture market values and pasture rent statistics are reported by NASS in various publications (USDA-NASS 2004, 2009b, 2011b). Much of these data are reported by state, based primarily on a June Area Survey and separate cash rent survey. Pasture values are not reported at the county or regional levels within a state. In the June Enumerative Survey, enumerators contact all agricultural producers located within the boundaries of a chosen sampling area and record statistical information (USDA-NASS 2011c, p. 18). The Agricultural Resource Management Survey (ARMS) and other sources outside of NASS are also used to revise reported land values as necessary (USDA-NASS 2009b, p. 14).

Cash rent data for irrigated cropland, non-irrigated cropland, and pasture are gathered annually in all states except Alaska. About 900 farms and ranches across Idaho are contacted (T. Kurtz, personal communication 2011). Survey respondents report total acres operated and acres rented for cash for each land use category including privately owned permanent pasture. For each land use category with positive acres, respondents are given the option of reporting rent per acre or total dollars paid. Land rented for a share of the crop, on a fee per head, per pound of gain, by AUM, rented free of charge, or land that includes buildings such as barns are excluded from the survey (USDA-NASS 2011c). Grazed lands that may be used to grow crops are excluded from the cash rent survey, but the survey does include irrigated pasture values in addition to non-irrigated pasture values. As discussed in more detail below, mixing irrigated and non-irrigated pasture values is problematic when an average lease rate and value of rangeland only is desired.

Idaho Rent-to-Value Ratios

Computing rent-to-value ratios for pasture land starts with an estimate of pasture land values. The average market value of pasture in the selected western states, as reported in the Agricultural Land Values and Cash Rent Survey, are shown in Table 8.18 with an accompanying graph. Two things are obvious in the table and graph. First, United States Department of Agriculture (USDA) estimates of pasture values increased rapidly in all Intermountain states over the 2005 through 2006 period, with some decline in value during 2007-2008. Following the national trend noted by Doye and Brorsen (2011) who provided a recent critique of U.S. pasture land values using USDA data, pasture values in the western states have approximately doubled in the past 10 years. This observation is consistent with the comparisons above between the Rimbey et al. (2007) results for Great Basin ranches during the early 2000s and the 2010-2011 market rates found in this current study.

A second highlight of the data in Table 8.18 is that Idaho stands out with reported per acre pasture values that are 1.5 times the value reported for the next highest state shown. Tom Kurtz with USDA-NASS, Idaho Field Office, assisted in evaluating why this occurs. The hypothesis was that the amount of irrigated land is higher in Idaho and this influences reported pasture values and cash rents. Using data presented in tables 8 and 10 of the 2007 Census of Agriculture (USDA-NASS 2009a), the percentage of permanent pasture irrigated in each Intermountain state was estimated. Irrigated pasture was 9.4% of the Idaho lands designated in the 2007 Census as privately owned permanent pasture. By comparison, irrigated pasture acreages in other Intermountain states were less than 4% of the total (Figure 8.6). Thus, irrigated pasture rents are influencing NASS-reported private dryland lease rates in Idaho.

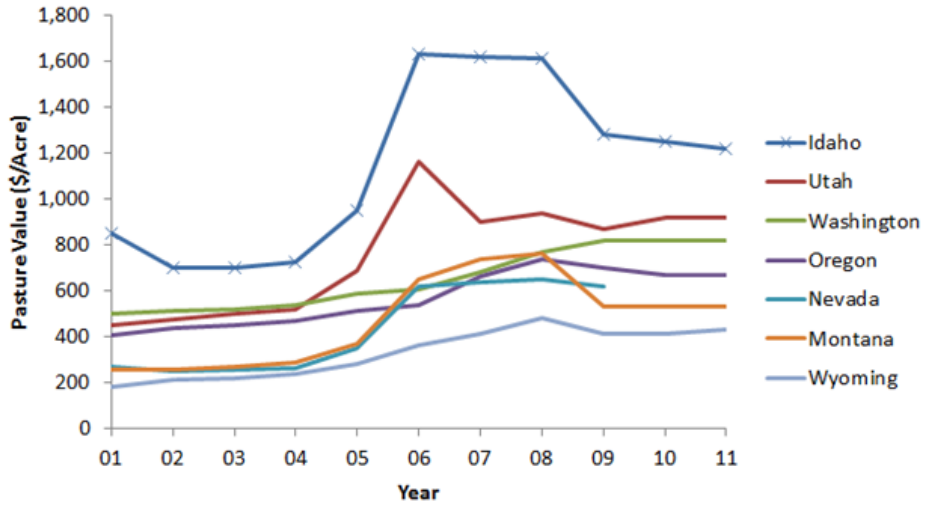
Regressing the 2011 reported pasture value (Figure 8.6) against the percentage of pasture that is irrigated in the state shows a strong influence on reported pasture values (R^2 = 51%) and cash rents (R^2 = 85%). The simple linear regression of Panel A suggests that if irrigated lands in Idaho were at the levels reported for other Intermountain states, 2011 reported pasture values would have been similar. Similar conclusions can be drawn for reported cash rents (Panel B).

The mixing of irrigated and non-irrigated pasture values and cash rents in the NASS cash rent survey has several important implications for IDL as they attempt to monitor market conditions. First, NASS data on agricultural land values is the only readily available data that is consistently reported each year by state. The pasture rent survey and land value survey reports trends in pastureland value, but the reported values represent a weighted average of irrigated and non-irrigated lands,

land types that vary greatly in value. Additional regional or county level pasture value estimates are not reported by NASS. The same is true of reported cash rents in the survey. The reported values are a weighted average of those grazing both irrigated and non-irrigated lands and only state level estimates are reported. Comparing to the current study, the average 2010-2011 grazing land value reported in Table 8.1 ($696 per acre) is not unlike average rates reported by NASS for comparison western states but substantially less than the $1,250 per acre value reported by NASS for Idaho.

Table 8.18 Pasture Land Values reported in NASS Agricultural Land Values and Cash Rent Survey for Selected Western States, 2001-2011 ($/Acre)

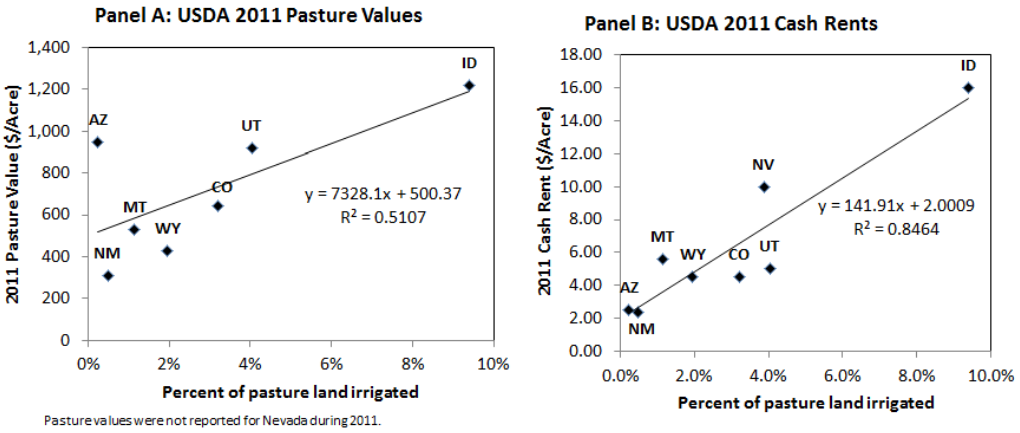
Year	Idaho	Utah	Washington	Oregon	Nevada	Montana	Wyoming
2001	850	450	500	405	270	255	180
2002	700	475	510	440	250	255	210
2003	700	500	520	450	255	270	220
2004	725	520	540	470	260	285	235
2005	950	690	585	510	350	370	280
2006	1,630	1,160	605	540	620	650	360
2007	1,620	900	680	660	640	740	410
2008	1,610	940	770	740	650	760	480
2009	1,280	870	820	700	620	530	410
2010	1,250	920	820	670		530	410
2011	1,220	920	820	670		530	430
Average	1,140	759	652	569	435	470	330



Source: USDA-NASS, *Agricultural Land Values and Cash Rent Survey*

Note: States are organized in the table and figure from highest value to lowest value during 2011.

Figure 8.6 NASS-Reported Pasture Values and Cash Rents for Intermountain States as compared to the percentage of Irrigated Pasture in the State, 2011

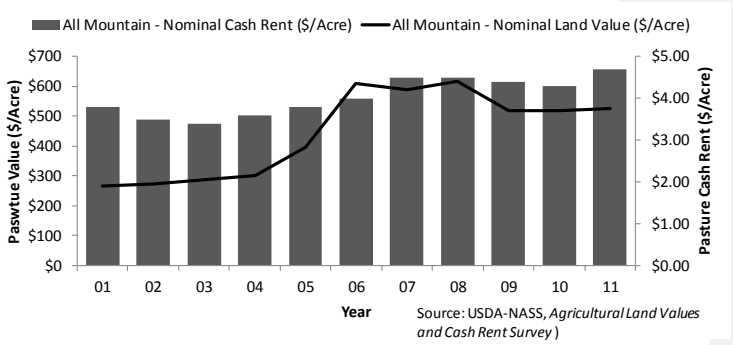


Pasture values were not reported for Nevada during 2011.

While recognizing the limitations of the reported Idaho values in the USDA cash rent survey, the annual survey can be used to indicate the trend in grazing land value and net returns from livestock production. Using nationally reported USDA pasture values and cash rents, Doye and Brorsen (2011) report that since 1998 pasture rent-to-value ratios have fallen from 1.8% to what is now a relatively stable 1%. Nationally, pasture rent-to-value ratios (averaging 1.28% from 2000 to 2010) have historically been less than cropland values (3.87%) (Doye and Brorsen 2011). When computed for the Intermountain states a similar trend is observed with rent-to-value ratios declining from about 1.4% in 2001 to less than 1% after 2005 when land values increased sharply (Table 8.20). Rent-to-value ratios increased slightly after 2008 with improved livestock prices.

Table 8.19 Nominal Rent-to-value Ratios for the Intermountain States, 2001 - 2011

	All Mountain		
Year	Nominal Land Value ($/Acre)	Nominal Cash Rent ($/Acre)	Rent-to-Value Ratio
2001	$264	$3.80	1.44%
2002	$273	$3.50	1.28%
2003	$285	$3.40	1.19%
2004	$302	$3.60	1.19%
2005	$395	$3.80	0.96%
2006	$610	$4.00	0.66%
2007	$590	$4.50	0.76%
2008	$617	$4.50	0.73%
2009	$517	$4.40	0.85%
2010	$518	$4.30	0.83%
2011	$525	$4.70	0.90%
All Years	$445	$4.05	0.91%



Source: USDA-NASS, *Agricultural Land Values and Cash Rent Survey*)

Cash rents were only reported for Idaho starting in 2008 and the computed rent-to-value ratio for Idaho pasture land is 0.62% in 2008, 0.78% in 2009, 1.12% in 2010, and 1.31% during 2011. These rates are considerably less than the 4.4% and 4.6% rent-to-value ratio computed for irrigated and non-irrigated cropland in Idaho (Resource Dimensions 2010, Table 31). If agricultural returns were the only return from owning pastureland it would be a relatively poor investment. However, as noted by Doye and Brorsen (2011) the factors contributing to the investment return to pasture and rangelands are very different from cropland. As noted earlier, part of the explanation for why western ranch owners are willing to accept relatively low returns is that ranches include a lifestyle component for which people are willing to earn less (Torell et al. 2001; Gentner and Tanaka 2002; Torell et al. 2005b; Rimbey et al. 2007; Doye and Brorsen 2011). Other factors shown to influence grazing land values include expectations of capital gains, development and urban conversion potential, recreation and hunting opportunities, potential oil and gas royalty income, favorable tax treatment and agricultural lifestyle opportunities. This increases the demand for these lands (Doye and Brorsen 2011).

8.6 Rates of Investment Return

Land appreciation has historically been an important part of the return realized from investing in western ranches and in fact for all agricultural lands (Workman 1986; Duffy 2011). USDA cash rent and pasture value data for the Intermountain states confirms the continued importance of land appreciation as a return to pasture investment in the Intermountain states. After adjusting for inflation to a constant 2010 price basis, Table 8.20 evaluates rates of return to pastureland investment

when land appreciation is added as part of the investment return. The total return was computed as $r_t = \frac{\text{Cash Rent}_t + V_t - V_{t-1}}{V_{t-1}}$

Where:

Cash Rent_t = gross pasture rental return per acre in year t;

V_t, V_{t-1} = average USDA reported value of pasture ($/acre) in the Intermountain states in years t and t-1, respectively.

Inflation-adjusted rental returns over the 1998-2011 period averaged 1.1% whereas land appreciation added an estimated 3.9% rate of return over the period. The total rate of return averaged 4.9% which is near the 5% to 9% rate of return reported by the American Agricultural Economics Association as the historical long-term risky real rate of return for agricultural investments nationwide (AAEA 2000, p. 2-39). Capital gains is an important part of the investment return from grazing land investment and this investment component must continue if grazing lands are to be considered a sound investment alternative. Non-agricultural market influences will be particularly important in determining land appreciation rates for selected real estate properties.

Table 8.20 Real Cash Rents plus Land Appreciation Returns for Pasture Land Investment in the Intermountain States, 1997 - 2011

Year	Pasture Value ($/Acre)	Δ Pasture Value ($/Acre)	Appreciation Rate	Cash Rent ($/Acre)	Rent-to-Value Ratio	Appreciation + Cash Rent ($/Acre)	Total Rate of Return
1997	298						
1998	309	11	3.9%	5.35	1.73%	17	5.7%
1999	305	-4	-1.3%	5.37	1.76%	1	0.4%
2000	318	13	4.2%	4.81	1.51%	18	5.8%
2001	325	7	2.3%	4.68	1.44%	12	3.7%
2002	331	6	1.8%	4.24	1.28%	10	3.1%
2003	338	7	2.1%	4.03	1.19%	11	3.3%
2004	349	11	3.2%	4.16	1.19%	15	4.5%
2005	441	92	26.5%	4.24	0.96%	97	27.8%
2006	660	219	49.6%	4.33	0.66%	224	50.7%
2007	620	-39	-6.0%	4.73	0.76%	-35	-5.2%
2008	625	4	0.7%	4.56	0.73%	9	1.4%
2009	525	-99	-15.9%	4.47	0.85%	-95	-15.2%
2010	518	-7	-1.4%	4.30	0.83%	-3	-0.6%
2011	507	-11	-2.1%	4.54	0.90%	-6	-1.2%
Average	431	15	3.9%	4.56	1.06%	24	4.9%
Standard Deviation	133	71	15.7%	0	0.37%	71	15.7%

Limitations and Uses of NASS Cash Rents Survey data

Grazing lease rates for Idaho pasture lands are reported annually in the NASS cash rents survey described above. These data are reported on a dollar per acre basis and when compared to $/acre pasture values the annual data can be used to estimate rent-to-value ratios and rates of returns for grazing land investment. However, the data is problematic for use by IDL as an indicator of rangeland values because of the irrigated pasture price influence identified to be of particular importance in Idaho. Grazing leases recorded on a dollar per livestock unit basis (i.e. $/head, $/head/day, $/AUM) are not included in the survey, yet per head charge rates are the most common method of charge for rangeland leases. However, the survey does provide a consistent and annual estimate of the level and direction of change in both lease rates and pastureland values.

8.7 Grazing Land Investment: Regional Assessment

IDL and NASS data are developed and summarized in Table 8.21 to provide a relative regional snapshot. Shown as a percent of total for the state against other factors provides context for the number of grazing land real estate sales for the 100 sales transactions used in the market valuation portion of this study. As with the percent of IDL leases, total leased grazing lands, total AUMs, and livestock, the representative sample of sales is comparatively small for the Northern, Payette Lakes and Southwest regions.

Table 8.21 Regional Comparison Grazing Land Market Sales Percentage, 2010 - 2011

Region	Percent of State Leases	Percent of Total Leased Acres	Percent of Total Leased AUMs	Percent of Sheep	Percent of Cattle	Percent of 2010-11 Sales
Eastern	34.0%	40.7%	56.1%	48.4%	44.4%	52.3%
Northern	8.7%	11.8%	6.1%	3.5%	9.2%	9.0%
Payette Lakes	10.6%	7.1%	4.9%	4.0%	4.8%	5.4%
South Central	23.9%	8.3%	7.6%	32.3%	19.4%	22.5%
Southwest	22.8%	32.1%	25.3%	11.8%	22.2%	10.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

9 – Alternative Business Models & Lease Structures

Through a clear lens on the differing landforms, climates, carrying capacity, land markets, forage demand, private rents (market value) for grazing leases, and the distribution of rangelands by region, we identify potential alternative models and layered lease management strategies, their possible applications, and existing obstacles that may delimit their use in Idaho.

9.1 Background

Inherent in the Federal land grant to Idaho at statehood is the state's fiduciary duty to prudently and effectively manage its trust lands for their beneficiary groups. As a result, the state has a fiduciary responsibility to achieve maximum economic benefits or operationally to realize adequate returns to fulfill its fiduciary trust responsibilities. In recent years, various challenges have pursued a line of questioning as to whether maximum economic benefits are being achieved. With respect to grazing lands in particular, the question is whether management of state endowment land activities (i.e. leasing for grazing) at below market value violates fiduciary responsibility. The result has been a serious review of management priorities for Idaho's trust land assets.

9.2 Idaho Trust Land Assets

Rangeland represents nearly 58% of the state's 2,450,401 acres of endowment lands (Table 9.1). Although livestock production is an important industry with a long history of grazing on the state's rangelands, there are a range of other values, resources, and services provided by the state's endowment lands. Historically, IDL's Grazing Land program has produced substantially less in annual revenues (Table 9.2) than other land assets, such as forestland (39.9%), agriculture (0.65%), minerals (0.09%), and residential real estate (0.03%) that together represent about 41% of the state's total endowment land assets. These assets generated over 96% of net revenues from all programs in FY2011. For this period, IDL's Grazing Land program produced about 2.1% of the $46.7 million in net revenues generated by the nine endowment land programs (Table 9.2).

Table 9.1 Idaho Trust Land Asset Classifications

Land Asset Class	Description	Acres	Percent of Total
Rangeland	Lands supporting natural vegetation, generally grasses, forbs and small brush, suitable for grazing by domestic livestock & wildlife.	1,414,216	57.76%
Forestland	Lands capable of regenerating and growing successive crops of commercial forest products on a sustainable basis.	977,005	39.90%
Conservation	Conservation lands are generally lands for which certain real property rights have been removed or otherwise restricted temporarily or permanently to maintain temporary or permanent rights for open space, preservation of habitat, natural areas, parks, or other such purposes.	22,825	0.93%
Agriculture	Lands used for growing cultivated plants or agricultural produce (grains, vegetables, and/or fruits).	15,797	0.65%
Commercial Real Estate	Lands normally recognized as "commercial" in local zoning regulations, including retail and light industrial businesses, public facilities, energy resources (wind, hydro, wave), communication sites, ski resorts, etc.	15,753	0.64%
Minerals	Includes lands managed for the production and sale of sand and gravel, oil and gas, coal, and other minerals including precious metals, decorative rock, phosphates, etc.	2,132	0.09%
Residential Real Estate	Land intended for sale or lease for residential subdivision, individual parcels or lots (includes cottage or cabin sites)	697	0.03%
Total		**2,448,425**	100.0%

Source: Idaho State Board of Land Commissioners, State Trust Lands AMP (December 2011); IDL Annual Report, 2011.

Table 9.2 Net Revenues by IDL Programs (2011)

Program	Total Income	Percent	Expenses	Percent	Net Income	Percent
Forest Land	$54,106,083	80.1%	$17,345,943	72.7%	$36,760,140	84.2%
Residential Real Estate	$4,379,447	6.5%	$312,026	1.3%	$4,067,421	9.3%
Minerals	$3,586,491	5.3%	$430,787	1.8%	$3,155,704	7.2%
Grazing Land	$1,878,863	2.8%	$959,029	4.0%	$919,834	2.1%
Recreation	$545,898	0.8%	$38,905	0.2%	$506,993	1.2%
Agriculture Land	$277,790	0.4%	$145,799	0.6%	$131,991	0.3%
Conservation	$149,187	0.2%	$30,513	0.1%	$118,674	0.3%
Oil and Gas	$82,164	0.1%	$5,230	0.02%	$76,934	0.2%
Commercial Real Estate*	$2,520,168	3.7%	$4,586,703	19.2%	($2,066,535)	-4.7%
Total Income	**$67,526,091**	**Total Expenses**	**$23,854,935**	**Total Net Income**	**$43,671,156**	

Source: IDL Annual Report, 2011. Expenses include direct program and administration costs.

*Commercial Real Estate includes include retail/office, light industrial, public facilities, energy resources, and communication sites. IDL uses accrual accounting approach for its commercial real estate properties, which indicates a positive net income of $241,392 for FY2011.

While it does not share a complete picture, examining IDL net revenues against total lands committed to rangelands (Table 9.1), triggers consideration of the potential for diversifying revenue opportunities from IDL rangelands through alternative arrangements that may better provide for grazing to occur simultaneously or in rotation with other compatible uses (e.g., wind energy, minerals, recreation, hunting/fishing, etc.).

The following section provides a base comparative, by asset class revenues that reveal potential opportunities for future evaluation by IDL.

9.3 Overview of Comparative State Total Revenues by Program

The development and mix of individual states' trust asset portfolios have unique histories driven by different management policies and interpretations used to establish the best care of the trust for respective beneficiary groups. Similarly, true comparability is complicated by the lack of consistency in a number of key areas such as asset classification definitions, data collection, and income reporting. Table 9.3 offers a summary of net revenue structure by state trust land portfolios for those states included in Section 4 (Overview of Comparable State Programs). The below table, when used in context with information presented throughout this report provides some insight on potential areas for developing asset management strategies

to balance a more diverse array of public values while improving net revenue performance of the trust.

Table 9.3 Total Revenue Summaries for Comparative State Programs, FY 2011

Montana		
Program	**Total Income**	**Percent**
Minerals Management		
Oil and Gas	$33,061,207	30.4%
Coal	$8,564,036	7.9%
Minerals (aggregate and all other)	$155,812	0.1%
	$41,781,055	38.5%
Interest and other investments	23,231,207	21.4%
Agriculture & Grazing Management		
Agricultural Leases	$14,088,829	13.0%
Grazing Leases	$6,625,329	6.1%
	$20,714,158	19.1%
Forest Land[2]	$10,496,231	9.7%
Real Estate		
Land Sales	$3,111,920	2.9%
Residential Real Estate	$1,816,222	1.7%
Rights-of-Way/Easements	$566,817	0.5%
Commercial	$1,253,421	1.2%
Conservation	$93,684	0.1%
Other	$81,712	0.1%
	$6,923,776	6.4%
Hydro Leases/Navigable Rivers	$4,432,014	4.1%
Recreational		
Recreational use licenses	$87,730	0.1%
Special recreational use licenses	$117,721	0.1%
Conservation Licenses	$838,256	0.8%
	$1,043,707	1.0%
Total Revenues	**$108,622,148**	

Oregon		
Program	**Total Income**	**Percent**
Forest Land / Timber	$8,722,055	66.3%
Waterways	$2,512,752	19.1%
Commercial/Industrial	$990,044	7.5%
Rangeland	$515,584	3.9%
Agricultural Land	$257,649	2.0%
Mineral & Energy Resource Lands	$153,900	1.2%
Special Stewardship	$13,204	0.1%
Total Revenues	**$13,165,188**	

Utah		
Program	**Total Income**	**Percent**
Oil and Gas	$60,909,236	50.0%
Coal & Other Minerals	$18,619,526	15.3%
Surface Sales	$1,768,196	1.5%
Surface Leases & Easements		
Industrial	$2,532,087	2.1%
Commercial	$1,006,640	0.8%
Easements	$977,552	0.8%
Grazing Permits	$864,777	0.7%
Telecommunication	$793,404	0.7%
Governmental	$320,740	0.3%
Rights of Entry	$272,445	0.2%
Timber Sales	$179,737	0.1%
Agricultural	$130,094	0.1%
Residential	$73,958	0.1%
	$7,151,434	5.9%
Development Sales	$3,145,089	2.6%
Development Leases & Easements	$767,206	0.6%
Interest on Agency Operations	$629,442	0.5%
Interest/Dividends on Permanent Funds	$28,899,239	23.7%
Land Donations	$133	0.00%
Miscellaneous	$3,101	0.00%
Total Revenues	**$121,892,602**	

Washington		
Program	**Total Income**	**Percent**
Sales		
Timber Sales & Related Activities	$197,439,000	61.8%
Forest road Assessments	$13,557,000	4.2%
Nursery Seedling Sales	$7,596,000	2.4%
Miscellaneous	$460,000	0.1%
	$219,052,000	68.5%
Leases		
Aquatic	$37,061,000	11.6%
Agriculture (Dryland & Irrigated)	$13,721,000	4.3%
Commercial Real Estate	$10,071,000	3.1%
Communication Sites	$4,012,000	1.3%
Miscellaneous	$2,283,000	0.7%
Mineral and Hydrocarbon	$1,156,000	0.4%
Rights-Of-Way	$788,000	0.2%
	$69,092,000	9.8%
Other Revenue		
Interest Income	$1,038,000	0.3%
Fire Assessments & Reimbursements	$10,441,000	3.3%
Grants & Contributions	$16,724,000	5.2%
Permits, Fees and Misc.	$2,574,000	0.8%
Miscellaneous	$804,000	0.3%
	$31,581,000	9.9%
Total Operations Revenues	**$319,725,000**	

Wyoming		
Program	**Total Income**	**Percent**
Oil and Gas	$268,471,856	85.4%
Coal	$22,868,361	7.3%
Grazing Leases	$5,000,301	1.6%
Sodium & Trona	$4,158,994	1.3%
Real Estate Sales	$4,149,068	1.3%
Uranium & Misc. Minerals	$3,076,529	1.0%
Surface Impacts	$2,580,633	0.8%
Special Use	$1,688,482	0.5%
Temporary Use Permits	$904,314	0.3%
Easements	$638,125	0.2%
Sand & Gravel	$497,048	0.2%
Bentonite	$297,847	0.1%
Timber Sales	$124,390	0.04%
Total Revenues	**$314,455,948**	

Source: Idaho Department of Lands, The Land Where Miracles Grow, 2011 Annual Report. 2012. FY ending June 30, 2011. Montana Department of Natural Resources and Conservation, Trust Land Management Division, 2011 Return on Assets Report. FY ending June 30, 2011; Oregon Department of State Lands, Annual Report on Land Asset Management for 2010-2011 (FY 2011) and Oregon Department of Forestry and Department of State Lands, Common Schools Forest Lands 2011 Annual Report. October 2011. FY ending June 30, 2011; State of Utah, School & Institutional Trust Lands Administration, Fiscal Year 2011 - 17th Annual Report; FY ending June 30, 2011 and email communication from R. Torgerson, July 2012; Washington State Department of Natural Resources, 2011 Annual Report. For the period, July 1, 2010 – June 30, 2011; Wyoming Office of State Lands and Investments Annual Report. 2011. Summary of Revenues from All Sources, FY ending June 30, 2011.

[1] Total Revenues, as reported by each state. Revue budgets as shown have not been revised. Differences in reporting frameworks and accounting methods may impact how program revenues are reported. Information should be used for general reference and guidance.

[2]Timber sales and Forest Improvement Program

From a revenue perspective for example, over the ten-year period from 2002 to 2012 Utah's SITLA Surface Program experienced substantial growth in many of its revenue-producing programs. The Surface Program Group administers eleven of SITLA's programs including surface sales, and surface leases and easements (Table 9.4).

Table 9.4 Utah SITLA Program Revenues over ten year period (2002-2012)

	Revenue		
Surface Program	FY 2002	FY 2012	Percent Change
Easements	$357,814	$977,552	173.20
Grazing Permits	$438,949	$864,777	97.01
Rights of Entry	$130,049	$272,445	109.49
Agricultural	$87,216	$130,094	49.16
Commercial	$478,036	$1,006,640	110.58
Governmental	$152,554	$320,740	110.25
Industrial	$436,727	$2,532,087	479.79
Residential	$57,758	$73,958	28.05
Telecommunication	$332,329	$793,404	138.74
Timber Sales	$259,884	$179,737	-30.84
Sales	$4,596,178	$1,420,201	-69.10

Source: R. Torgerson, personal communication 2012.

Utah has the third highest total trust acreage committed to grazing, amongst the states used for comparative assessment in this study, yet in FY2011 its grazing program generated only $0.27 per acre in net revenue (Table 9.5). However, overall SITLA's programs produced $34.88 per acre, trumped only by Washington and Wyoming whose programs on average generated $139.01 and $88.64, respectively, per acre in FY2011 (Table 9.6).

Table 9.5 Grazing Program Revenues Compared to Acres Available, 2011

State	Total Trust Land Acres	Grazing Lease or Permit Acres	% Available for Grazing Lease	Net Revenue Grazing	$/Acre Grazing
Washington[1]	2,300,000	803,600	34.9%	$2,283,000	$2.84
Montana	5,100,000	4,070,000	79.8%	$6,625,329	$1.63
Wyoming	3,547,408	3,490,000	98.4%	$5,000,301	$1.43
Idaho	2,500,000	1,764,301	70.6%	$1,878,863	$1.06
Oregon[2]	2,802,260	625,510	22.3%	$515,584	$0.82
Utah	3,500,000	3,200,000	91.4%	$864,777	$0.27

Source: IDL, The Land Where Miracles Grow, 2011 Annual Report. 2012. FY ending June 30, 2011. Montana DNRC, Trust Land Management Division, 2011 Return on Assets Report. FY ending June 30,

2011; Oregon DSL, Annual Report on Land Asset Management for 2010-2011 (FY 2011) and Oregon Department of Forestry and Department of State Lands, Common Schools Forest Lands 2011 Annual Report. October 2011. FY ending June 30, 2011; Utah SITLA, Fiscal Year 2011 - 17th Annual Report; FY ending June 30, 2011 and email communication from R. Torgerson, July 2012; Washington DNR, 2011 Annual Report. For the period, July 1, 2010 – June 30, 2011; Wyoming OSLI Annual Report. 2011. Summary of Revenues from All Sources, FY ending June 30, 2011.

[1] Total Revenues, as reported by each state. Revenue budgets as shown have not been revised. Differences in reporting frameworks and accounting methods may impact how program revenues are reported. Information should be used for general reference and guidance.

[2]Timber sales and Forest Improvement Program.

While this snapshot on program-based income provides an indication about general performance, a more detailed analysis of actual mechanisms, differences in application and potential for enhancing Idaho's trust revenues through the development or evolution of lease arrangements, diversifying asset portfolios, and/or revised asset management planning is essential. The following sections offer experiences from other states, as well as consideration of regional application for Idaho.

9.4 Layered Lease Arrangements

Consideration of potential for regional or site-specific layered lease arrangements requires an in-depth assessment of proposed alternatives, development and administrative costs, site data, and information about the nature of proposed coexisting operations on leased ground. Outlined in this section are potential opportunities that both expand the use of layered management strategies and may provide additional income from IDL rangelands. Detailed evaluation of temporal, spatial, and fiscal elements using advanced information technologies to identify and assess case-based options are beyond the scope of this study. Thus, assessment of the return on investment and the extent of the potential for enhancing the net income to the trust are not possible in this context.

A necessary caveat to the following general findings is that each possible opportunity for portfolio diversification requires further research. The potential for development of any of these or other programs must account for risk. This includes evaluation of the market, and assessing potential social, political and environmental risk, in addition to liquidity risk. Additionally, each opportunity identified for advancement should be assessed for efficiency and capacity to produce revenue for the beneficiaries in coordination with other programs. The challenge is to find the best combination of programs that promotes revenue development from underperforming assets in a manner that supports emerging markets, does not penalize existing activities and industries, and meets IDL endowment requirements.

As noted in the RPA assessment described earlier (Van Tassell et al. 2001b), expanding the multiple uses of IDL lands would be expected to decrease grazing demand for these lands.

Recreational Access/Use Passes and Permits/Licenses

In Idaho, IDL does not have the ability to create exclusive rights for recreational uses, which includes hunting and fishing. While there are a few leases with outfitters and guides, the majority of Idaho's "recreation leases" are non-commercial leases of varying durations to organizations such as local gun and ski clubs, non-profit organizations, and communities. Such leases are typically for uses as the development of facilities (e.g. warming huts, shelters, etc). In 2011, recreational leasing on Idaho's trust lands generated net revenues of nearly $507,000, or about 1.2% of the total net revenues produced by IDL programs (Table 9.2).

Continued consumer demand for multi-purpose recreational lands may provide a variety of opportunities for revenue enhancement. Typical mechanisms used in other states beyond the five comparative states (those in Section 4) include recreational leases, licenses (e.g. hunting, fishing), permits and passes that both enable public recreation access to State trust lands and provide income to the trust. While much State trust lands can be accessed for recreational purposes, in Idaho and elsewhere, often the conditions (e.g. slope, terrain, scattered and small size, wetlands) of available acres limit their use due to ease of access.

By virtue of its land base and the distribution of certain land assets across the five study regions apparent potential exists for IDL to further enhance income from recreation-based lease/permit/pass opportunities or through the sale of trust lands outright to private interests or other agencies. One such possibility may be through the sale of certain lands to agencies as IDFG, for example, which is actively seeking to provide public access on public and private lands across the state for recreational purposes through its *Access Yes!* Program.[14]

Across the five comparative states, Montana is the only other state that currently breaks out recreational use as a separate revenue-based program area (Table 9.3). In FY2011, Montana reported net revenue of $87,730 in general recreational use licenses and $111,721 generated from special recreational use licenses. Hunting, fishing, and trapping on trust lands are also possible for those who purchase an

[14] In 2011, the *Access Yes!* Program opened up 431,803 acres of private land and 470,165 acres of public land to sportsmen for recreational use.

annual $2.00 conservation license. Conservation licenses produced $838,256 of revenue in FY2011 (Table 9.3).

Oregon's lands are open to recreational use without passes or permits. Grazing lessees may request specific closure, though there is no knowledge of any in effect (L. Quakenbush, personal communication 2012). Lands surrounding the few recreational cabin leases are not concurrently leased for grazing. Similarly, in Wyoming, current policy dictates that legally accessible trust land is open and free to the public (J. Van Hatten, personal communication 2012)

On July 1, 2011, Washington implemented the "Discover Pass", which costs $30 for an annual pass and $10 for a day pass. As of April 30, 2012 the Discover Pass had raised about $11.3 million; just over one-third of the projected $32 million. The mandatory pass is required on state park lands and water-access sites managed by Washington State Parks, the Washington Department of Fish and Wildlife, and the DNR. Revenues from the pass are split between these agencies, with the State Parks receiving 84% and 8% going to each the Department of Fish and Wildlife and the DNR. Enforcement has been an issue, both DNR and State Parks are working on strategies to improve public awareness and enable on-line purchase. (R. Roeder, personal communication 2012; Chapter 320, State of Washington, 62nd Legislature, 2011 Regular Session, 5622 2SSB.PL).

Wind Energy Leases

Current estimates indicate there are more than 800,000 acres of windy lands in Idaho with the potential to generate as much as 49 million megawatt-hours per year (MWh/yr) (NREL 2002).[15] While only about 1.7% of Idaho's 13,240.4 km^2 (5,112 square miles) total windy lands are commercially developable with existing technology, wind energy leases can provide a significant new source of income that interferes very little with grazing, crop production, or other land uses. Several state programs assessed in Section 4, including Montana, Utah and Wyoming, have entered into long-term lease arrangements for wind energy. Table 9.7 provides summary estimates developed by the National Renewable Energy Laboratory (NREL) for land area determined to have suitable resources for wind development. Installed capacity is the potential rated capacity in megawatts that could be installed on

[15] Windy land is defined as areas with a gross capacity factor (CF) of 30% or greater (without losses) at a height of 80 meters above ground level and mean annual wind speeds of about 6.4 meters per second and greater. The wind energy potential estimated by NREL is based on wind resource data developed by AWS True Wind LLC, and includes filters to exclude land and other areas unlikely to be developed, e.g. wilderness areas, parks, water features, etc.

available lands. Annual generation is the annual projected wind energy generated in gigawatt-hours (GWh) that could be produced from the installed capacity. While there are important differences in scale and spatial location of windy resource lands available for potential development across study states (Table 9.7), Washington and Utah present wind energy resource characteristics most similar to Idaho.

Table 9.4 Windy Land and Potential Estimates for areas >= 30CF at 80m[1]

State	Windy Land Area >= 30% Gross Capacity Factor at 80m					Wind Energy Potential	
	Total (km^2)	Excluded[2] (km^2)	Available (km^2)	Available % of State	% of Total Windy Land Excluded	Installed Capacity[3] (MW)	Annual Generation (GWh)
Idaho	**13,420.4**	**9,805.3**	**3,615.1**	**1.67%**	**73.1%**	**18,075.6**	**52,118**
Montana	232,768.6	43,967.7	188,800.9	49.60%	18.9%	944,004.4	3,228,620
Oregon	17,109.8	11,689.7	5,420.1	2.16%	68.3%	27,100.3	80,855
Utah	5,273.6	2,652.8	2,620.7	1.19%	50.3%	13,103.7	37,104
Washington	11,932.6	8,236.9	3,695.7	2.12%	69.0%	18,478.5	55,550
Wyoming	146,166.2	35,751.7	110,414.5	43.58%	24.5%	552,072.6	1,944,340

Source: Adapted from February 4, 2010 NREL estimates of windy land area with a gross capacity of 30% and greater at 80m height and the wind energy potential from development of the available windy land area after exclusions. Available at: www.windpoweringamerica.gov/docs/wind_potential_80m_30percent.xls

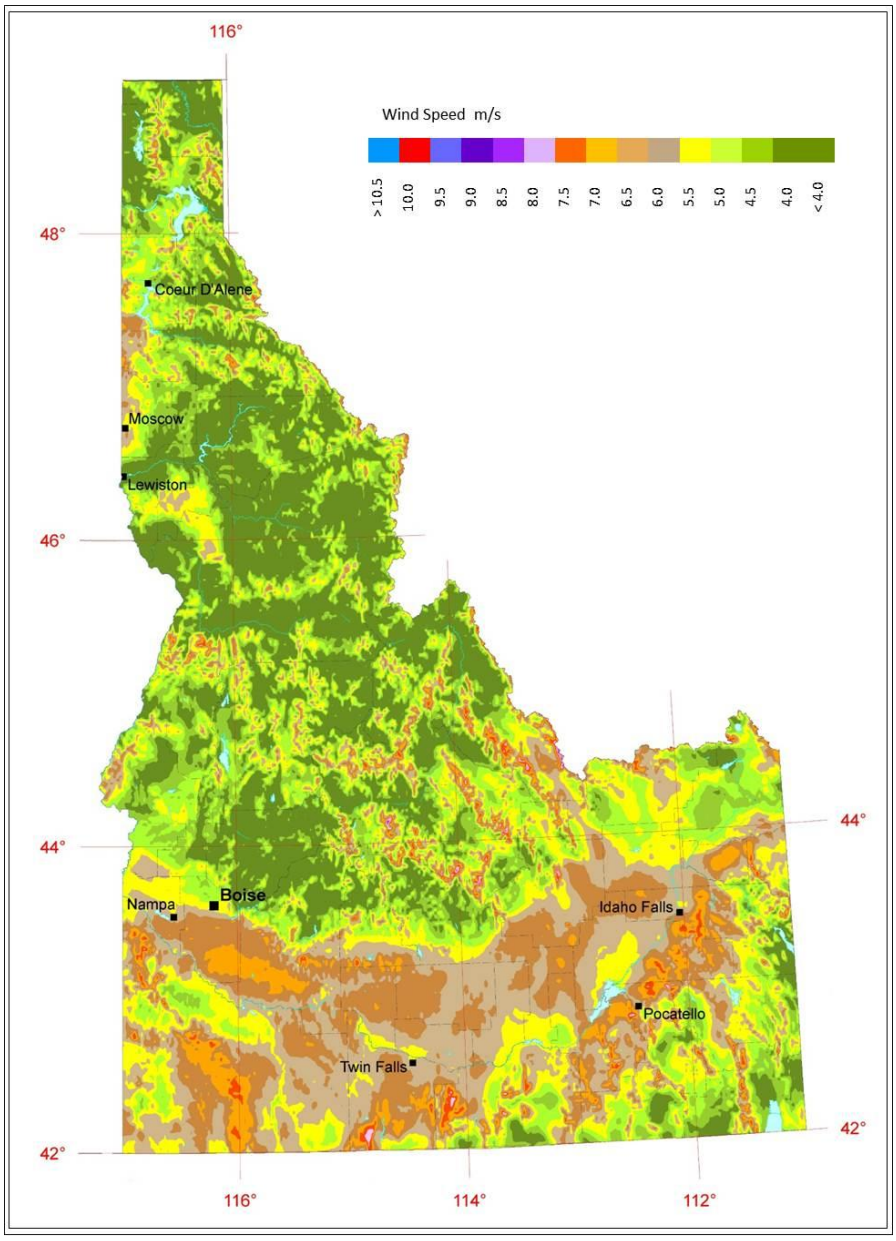
1 NREL's estimates are based on maps produced by AWS Truewind LLC using their MesoMap® system.

2 Excluded lands include protected lands (national parks, wilderness, etc.), incompatible land use (urban areas, airports, wilderness areas, wetlands, and water features), and other considerations. See Appendix H for full list.

3 Assumes 5 MW/km^2 of installed nameplate capacity.

Windy land area and energy potential data from NREL, together with capacity data produced by AWS Truepower LLC has been used by the U.S. Department of Energy's Wind Program to develop high-resolution 80-meter (m) utility-scale wind resource maps for all U.S. states. (U.S. Department of Energy EERE 2010). As in Figure 9.1, the maps show the predicted mean annual wind speeds at 80m. Generally, areas with average wind speeds around 6.5m per second and greater at 80m height are considered to have a resource suitable for wind development. These utility-scale maps provide vital information for use in screening for the potential economic and technical viability of wind resource development on certain IDL rangelands and other trust lands. Cursory review indicates the greatest potential for layered grazing/wind energy leasing exists is concentrated in areas of the Southwest, South Central and Eastern regions (Figure 9.1).

Figure 9.1 Idaho Average Annual Wind Speed at 80m



Source: Wind resource estimates developed by AWS Truepower LLC for windNavigator®. Web: www.windnavigator.com ‖ www.awstruepower.com . Spatial resolution of wind resource data: 2.5 km. Projection: UTM Zone 11 WGS84.

0 10 20 40 60 80 Miles

In early 2009, SITLA issued its first lease of 1,560 acres for the development of wind energy resources on Utah's trust lands. Over the initial 30 year term the lease is expected to produce several million dollars in revenues through power generated being sold to several cities in Southern California (Hebertson and McMichael 2009).

Montana DNRC actively promotes wind energy resource development on its trust lands. The process begins with placing at least one anemometer on a potential development site for at least one year. To do so requires a land use license, obtainable for a fee of $25, plus an annual fee that varies by use. The land use license is not a lease, but an agreement, which specifies the exact purpose of the land use. Once a site is determined as a viable site for wind resource development, the DNRC will issue a public request for proposals for wind power development. The process includes selection of the successful proposer in the first phase, and all other aspects including economic feasibility studies, environmental impact assessment, power purchase agreements, etc. in the second phase. As of 2011, the DNRC had issued leases on 3,640 acres of its school trust lands in central and south central Montana for 35 wind turbines (K. Chappell, personal communication 2012).

Wyoming's OSLI also leases trust lands for commercial wind energy development. Typical lease terms are 35 to 40 years. Income is generated through the lease and via royalties assessed on the energy produced. The average annual royalty for a 1.5 MW wind turbine is about $9,600. On average, since 2001, wind energy leasing has experienced an annual increase of 30%. Wind energy development may take place under one of two programs, wind energy leases or temporary use permits; each has separate requirements based on the proposed use. By the close of 2011, OSLI held 25 wind leases on 50,052 acres, with an additional 56,500 acres under consideration for wind energy development. In FY2011, wind leases generated about $450,000 in net revenue. Over $2.4 million has been collected through wind leases over the tenure of the program. Exponential increases in income are anticipated as new wind project developments are developed. (J. Van Hatten, personal communication 2012).

The process in Wyoming includes payment of a $25 application fee, notice provided to current lessees of their comment, notice to Wyoming Game and Fish Department pertinent to sage grouse habitat area, determination and payment of surface impact fees. Preliminary approval is granted within 20 to 30 days of application, after which installation and operation may begin. The Land Board makes final approval determinations. (J. Van Hatten, personal communication 2012)

With the limited land disturbance footprint of wind energy development, as well as other renewable energy opportunities discussed later in this section, there should be limited impacts on grazing leases except during construction activities. To the extent that wind energy is determined viable for select IDL lands, wind energy leases would appear to provide a sound long-term strategy consistent with sustainable asset management and generating revenue for the trust.

Biomass Contracts

In 2010 the state of Washington passed the Forest Biomass Supply Agreements Bill (2SHB 2481) to allow the state's DNR to enter into five-year contracts with up to three renewals or leases to supply forest biomass from trust lands for energy projects. The bill aligns with HB 2165 that passed in 2009 authorizing the DNR to implement biomass-to-energy pilot projects in Washington. The two pilot projects received a total of $16.5 million in stimulus loans and grants. Together the awards to Nippon Paper Industries and Borgford Bioenergy were purported to create or retain over 270 jobs. Beyond jobs the biomass contracts helped to keep working lands working, and produced a new revenue opportunity while generating renewable energy on state trust lands.

In 2012, the DNR sold its first biomass offering from state trust lands for $9,000, which was the highest bid for 8,700 tons of easily extractable woody biomass from slash piles from past timber harvests on trust lands on the Olympic Peninsula.

Much as Washington, Idaho derives more than 80% of its total trust income from activities on its forested lands, on which grazing is often a secondary use. Preliminary investigations reflect several positive indicators and opportunities to enhance trust revenues through the expansion of existing programs and/or contracting vehicles to enable IDL to capitalize on the potential for woody biomass and agricultural biomass. These include:

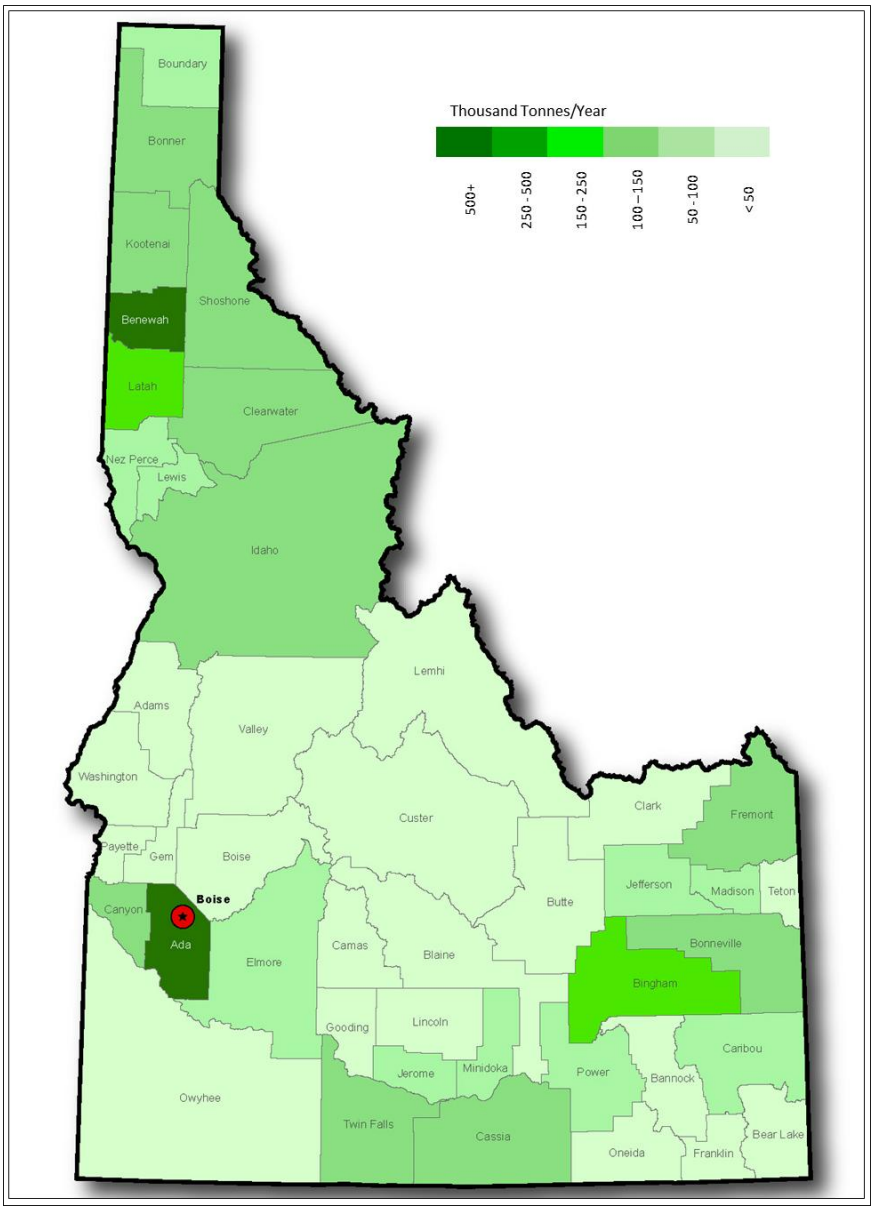
- existing long-term working relationships between IDL, forest product, grazing and agricultural industries,
- acknowledgement that biomass material exists and is either not used or is underused,
- recognition that multiple uses that may include a mix of forest, grazing, farming or together with biomass extrapolation contribute to providing long-term ecological, economic and social benefits to the citizens of Idaho; and,
- an opportunity to contribute to maximizing long-term financial returns to the trust beneficiaries.

While there is some overlap in the distribution of Idaho's biomass resources in the Northern region, the primary areas of concentration for crop and woody resource residues are fairly distinctly separated. The potential for agricultural biomass is greatest in the Eastern region, where the annual range is between 250-500 thousand tonnes, and to a lesser extent in the South Central region in a band running east to west, beginning near the intersection of I-84 and I-86 to just beyond Buhl, Idaho where annual tonnage ranges between 100 and 250 thousand tonnes/yr (EPA BioPower Mapping Application 2010).

The availability of, and thus potential for woody biomass, which includes forest residue, forest residues, primary and secondary mill residues and urban wood waste, is principally located in the Northern region and the northern most area of the Payette Lakes region. This region covers Benewah, Clearwater Idaho and Latah counties, where IDL holds a substantial cluster of grazing leases. Here the available forest resource biomass range is from 100 and 250 thousand tonnes/yr, with a few areas that range from 250 to 500 thousand tons/yr, and primary mill residues ranging from 100 to 500 thousand tons/yr.

Estimates for agricultural residues available in the United States, by state and county, were developed by NREL using USDA-NASS 5 year average data for the period 2003 – 2007. NREL developed similar estimates for forest resource biomass using the USFS 2007 Timber Product Output database. Taken together NREL has analyzed these data spatially and statistically to produce the Biomass Resource Assessment. The assessment includes the use of GIS, to develop corollary composite maps showing the amount and distribution of biomass resources potentially available (that of Idaho is Figure 9.2) for each state, by county (U.S. Department of Energy, NREL-Biomass Resource Assessment 2010).

Figure 9.2 Idaho Biomass Resources

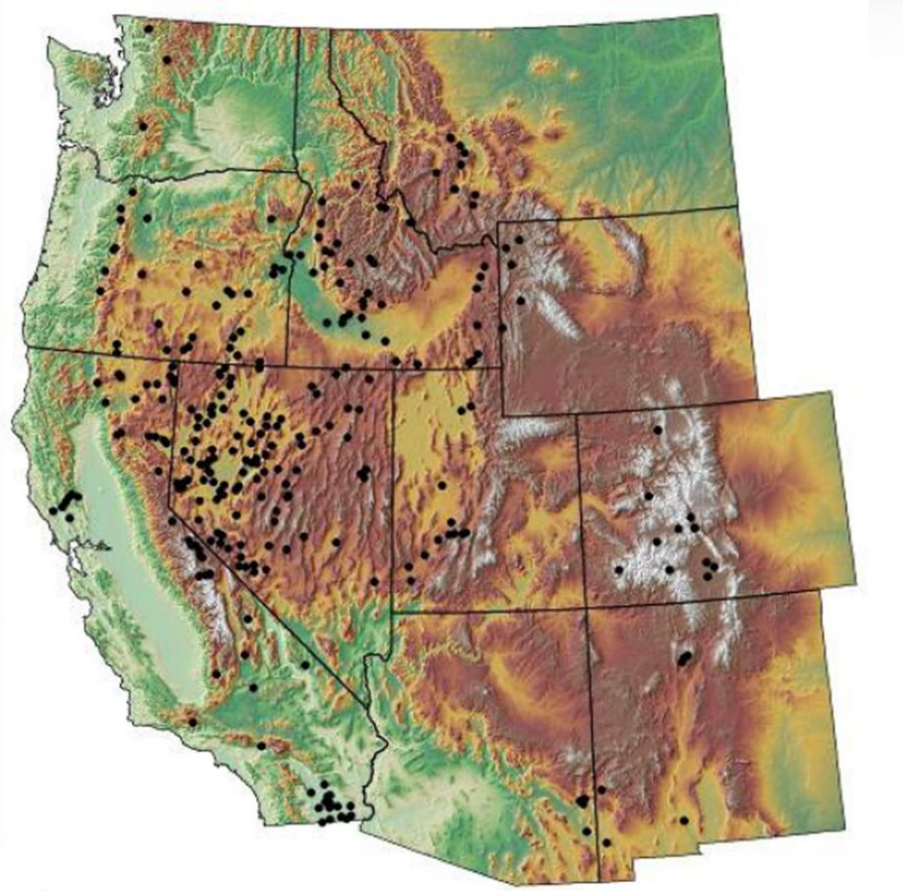


NREL estimates for biomass resources available in Idaho, by county, for these feedstock categories:
- Agricultural residues (crops and animal manure);
- Wood residues (forest, primary mill, secondary mill, and urban wood);
- Municipal discards (methane emissions from landfills and domestic wastewater treatment);
- Dedicated energy crops (switchgrass on CRP lands).

Geothermal

Idaho's geothermal resource potential is estimated to be the country's third largest. While the majority of the state has good to excellent geothermal resources, the greatest potential is located in the southern half of the state. Shown in Figure 9.3 is the location of identified moderate-temperature and high-temperature geothermal systems of the western states, as represented by each black dot.

Figure 9.3 Identified Geothermal Systems in the Western United States



Source: USGS Assessment of Moderate- and High-Temperature Geothermal Resources of the United States 2008.

The USGS estimates a mean probability of electricity generation for identified geothermal resources in Idaho during the next 30 years to range from 81 MW to 760 MW (mean 333 MW) (Table 9.8) (BLM 2009).

Table 9.8 Electric Power Generation Potential in Megawatts Electric (MWe) from Identified and Undiscovered Resources in Idaho and Comparative States[1]

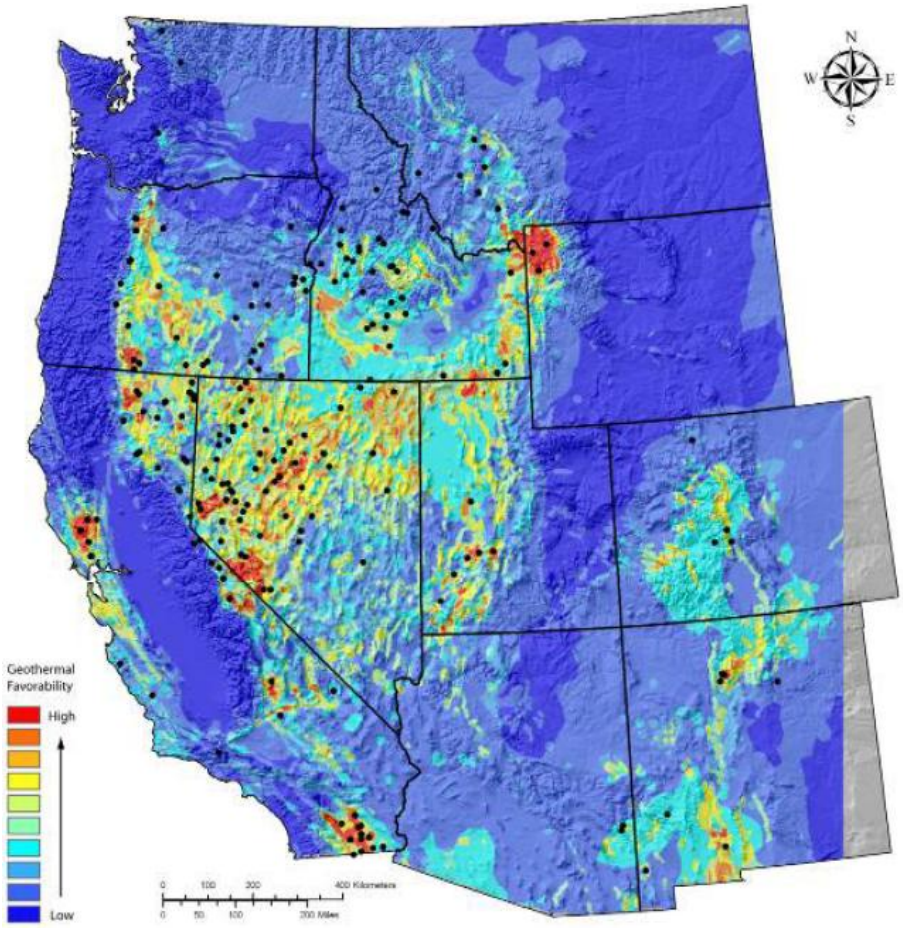
		Identified Resources (MWe)				Undiscovered Resources (Mwe)			
State	N	F95	F50	Mean	F5	F95	F50	Mean	F5
Idaho	36	81	283	333	760	427	1,391	1,872	4,937
Montana	7	15	51	59	130	176	573	771	2,033
Oregon	29	163	485	540	1,107	432	1,406	1,893	4,991
Utah	6	82	171	184	321	334	1,088	1,464	3,860
Washington	1	7	20	23	47	68	223	300	790
Wyoming	1	5	31	39	100	40	129	174	458

Source: Modified from USGS Geothermal Resources Assessment 2008.

[1] Figures are calculated on a basis of 30 years of production. F95 represents a 95% chance of at least the amount tabulated; other fractiles are presented similarly. N = the number of identified geothermal systems included in the estimate.

In 2011 the Idaho state legislature increased maximum lease lengths for geothermal leases from 10 years to 49 years, removed restrictions on the size of a lease, and removed a set 10% minimum royalty rate. Annual rental rates for geothermal leases are $1 per acre for the first through fifth years, $2 per acre for the sixth through tenth years, and $3 per acre thereafter. In FY2011 IDL had 57 geothermal resource leases on 25,035.05 leased acres. Preliminary investigation indicates substantial undiscovered geothermal resources exist in Idaho, much of which exists in regions where IDL currently holds grazing leases (Figure 9.4).

Figure 9.4 Undiscovered Geothermal Resources in the Western United States



Source: USGS Assessment of Moderate- and High-Temperature Geothermal Resources of the United States 2008.

BLM has a number of geothermal leases in Idaho; the first parcels were leased in 2007 for greater than $5.7 million. In 2011, eight parcels in Idaho were leased by the BLM, totaling over $53,000. On August 14, 2012, a parcel of 3,685.24 acres in Bonneville County will be competitively sold by auction. The minimum bid is $2 per acre. Leases are issued for a primary term of 10 years, and royalty rates for electricity

production are 1.75% for the first 10 years of production and 3.5% annually thereafter.

Montana DNRC leases state trust land for geothermal prospecting, exploration, well construction and the production of geothermal resources. The length of a geothermal lease term is 10 years. Rental and royalty charges are determined by the Montana Land Board, but are not less than $1 per acre, not less than 10% of the amount or value of energy produced, and not more than 5% of any byproduct (Montana Environmental Quality Council 2012). However, no revenue attributable to leasing for geothermal energy was reported in FY 2011 by Montana DNRC (Montana DNRC 2012).

Oregon DSL leases geothermal resource rights; rangeland may also be used for geothermal exploration and development if compatible with the grazing management plan (Oregon DSL 2011). In FY 2011, $35,588 was collected from geothermal leasing on state trust lands in Eastern Oregon. Oregon has one geothermal lease that will be entering development. The department expects surface development to occur on adjacent ownership and to not significantly impact grazing use. (L. Quakenbush, personal communication 2012).

Utah has robust potential for geothermal energy production. As of March 2011, SITLA had leased over 100,000 acres of state trust land for geothermal energy exploration and production, and the first new geothermal power plant built in Utah in 20 years was constructed on state trust land in 2009 (Utah Office of the Governor 2011). SITLA did not report revenue earned from leasing for geothermal energy resources in FY 2011. However, minimum annual rental, regardless of acreage, shall be no less than $500, or $1.00 per acre. The term of the lease is 10 years, and the initial royalty rate is 2.25% of the gross proceeds from sale of electric power for the first five years of the lease terms and 3.5% thereafter (Utah SITLA 2009b).

There are currently no geothermal leases on Washington's state trust lands and in FY 2011 no revenue was reported for the DNR-administered Geothermal fund (Washington DNR 2012 (p.34). However, DNR has two active geothermal exploration permits located north of Highway 2 (Washington State Geologic Information Portal 2012).

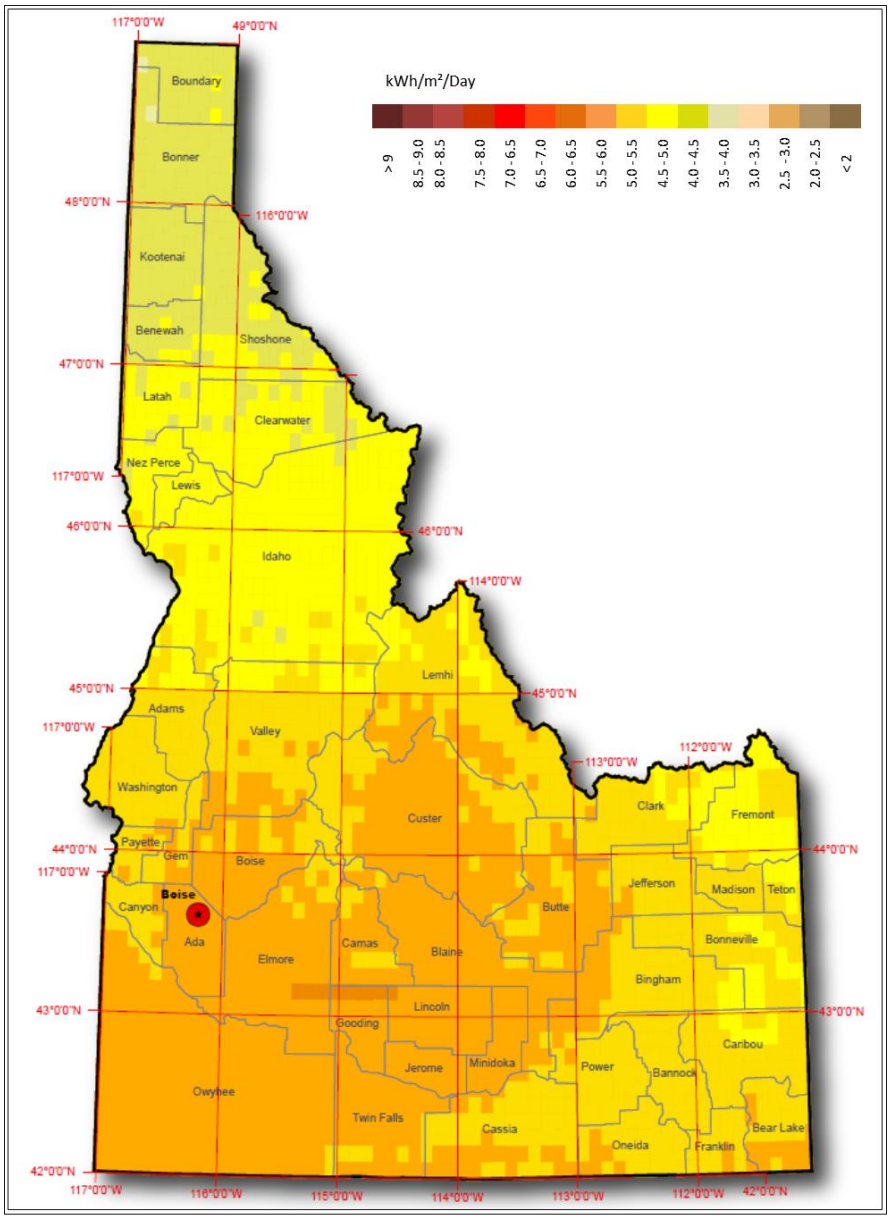
Solar

As a major landowner, IDL may be well poised to benefit from present activity in the solar energy marketplace. Recent assessment of the potential and suitability of

Idaho's trust land holdings for solar development determined that a substantial proportion of IDL lands, under one or more of the eight modeling criteria used (solar resource, parcel size, slope, identified species of concern, wilderness area, and transmission and transportation proximity) were unsuitable for solar development (Petit 2011). However, about 440,000 acres of trust lands had fit - where potential and suitability aligned; of this acreage, there is significant correlation with an underperforming asset – IDL rangelands.

Shown in Figure 9.5, the greatest potential for Concentrating Solar Power in Idaho exists in the South Central and Southwest regions. One particularly strong area runs east to west from Lincoln County, through Gooding County and into the east-central area of Elmore County where NREL reports lands with greater than 6.0 average annual kWh/m²/day Direct Normal Insolation (Perez-SUNY/NREL, 2007).

Figure 9.5 CSP Solar Power Resource Potential Idaho

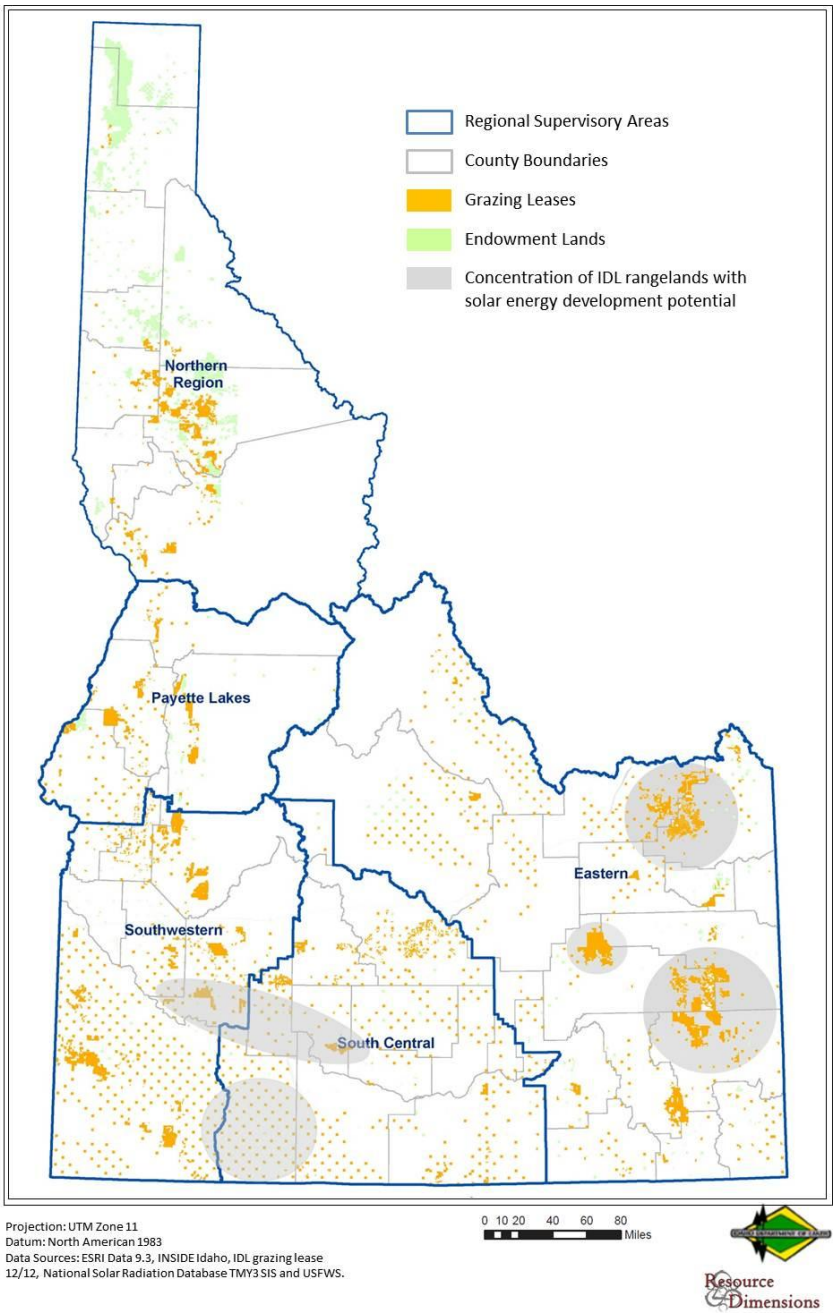


Source: NREL interactive mapping tool and data from U.S. Solar Measurement Station Locations. (2007). The direct normal solar resource estimates shown are derived from 10 km SUNY data, with modifications by NREL.

While there are some barriers to development, there are incentives to explore the potential for solar and other renewable energy technologies. Working to develop best management practices and to evaluate what types of incentives may encourage this type of development could further IDL's goals to improving asset performance for its beneficiaries.

Current constraints may affect IDL's ability to immediately profit from solar energy site leases, yet there are areas within the Eastern region, and along the Snake River of the South Central and Southwest regions (Figure 9.6) that may provide substantial competitive advantage in attracting solar energy development over other landowning agencies and private landowners. For example, the state's ability to lease several parcels at once delivers economic and time saving benefits to a developer who would otherwise need to negotiate individual agreements with private landowners or federal agencies. Additionally, developing solar power sites on federal lands land will be likely subject to demanding federal requirements that may render such development unprofitable.

Figure 9.6 IDL Rangeland Areas with Solar Energy Development Potential



As with any of the renewable energy development possibilities IDL would need to assess the extent of current constraints, in order to capitalize on the department's strengths and enhance its ability to maximize its financial returns to its beneficiaries.

Oregon has one solar lease layered over a grazing lease. If the proposed development actually moves forward, DSL plans to adjust the extent of, or potentially cancel the grazing lease altogether depending on the actual area of impact (L. Quakenbush, personal communication 2012).

Several other states, such as Arizona and New Mexico, have recognized the significant revenue opportunities that long-term leases for the development of solar and other renewable energy resources present and are similarly working to diversify their leasing strategies to capitalize on the development of green-energy markets.

Native Crop and Seed Collection Leases

Utah Admin Code r. 850-50-1300 (Range Management) specifically outlines certain rights reserved to SITLA with respect to its trust lands with grazing leases. Among those rights expressly reserved is the issuance of permits for seed harvesting. Similarly, SITLA may grant a Small Forest Product Permit, per Utah Admin Code r. 850-70-400. Neither seed harvesting nor a Small Forest Product Permit grants exclusive use of the permitted lands or resources contained thereon. Historically, seed collection and Small Forest Product permits have each generated income between $20,000 and $30,000 annually). In order to issue such permits, SITLA must provide 30-day notice to the current leaseholder with regard to the proposed seed harvesting or plan collection activities. The current grazing leaseholder may claim a loss of use due to harvesting activity, for which credit is given in the following year's assessment. However, such claims are rare; only one known claim for loss by a grazing leaseholder has ever been filed and was not substantiated (R. Torgerson, personal communication 2012).

In Idaho, IDAPA 20.03.14, Rules Governing Grazing, Farming, Conservation, Noncommercial Recreation, and Communication Site Leases, provides similar language: ***04. Seed Harvest****. To harvest seed from plants on land not under a cropland lease. The Department will coordinate harvesting activities with lessee to minimize impacts on livestock operations. If loss of use occurs from harvesting activities the rental will be adjusted in the amount of lost use.*

Similarly, Montana, Washington, and Wyoming permit native crops (e.g. mushrooms, Christmas tree, single species takes) and seed harvests on trust lands under grazing

lease though Special Permits, Temporary Use Permits, or Land Use Licenses. Typically, these leases, permits or licenses are issued for six months or less, or a single occurrence on a request basis and are not actively marketed given the relatively limited income derived to date (K. Chappell, J. Van Hatten and R. Roeder, personal communications June 2012).

Conservation Leases

The unique nature and obligations tied to the management of state trust lands, coupled with population growth, changing public priorities for resource extraction, increased real estate values and new possibilities for conservation markets may offer opportunities for IDL to expand related payments and incentive programs.

Conservation leasing in Idaho became a recognized activity in 2007. These leases cover activities including wildlife habitat management, soil conservation, water quality protection, and open space. From 20 conservation leases in FY 2011, Idaho received $118,674 in net revenue (IDL 2012).

Montana DNRC received $93,684 in gross revenue from conservation leases in FY 2011, and received an average of over $97,000 annually from FY 2007 to FY 2011. Wildlife conservation licenses sold in Montana in FY 2011 generated $838,256 in net revenue (Montana DNRC 2012). Conservation leases and licenses are distinct mechanisms, and are not in line with conservation easements or similar tools (K. Chappell, personal communication 2012).

In 1998, Wyoming's OSLI entered into a conservation easement arrangement on 19 acres in Teton County, for which it received a one-time payment of $1.26M. Unfortunately, the complicated nature of the particular conservation easement and conditions surrounding the transaction made the state wary of subsequent transactions (J. Van Hatten, personal communication 2012).

Moving outside the five states identified for comparative review for this study, the Arizona Preserve Initiative adopted in 1996, encourages the preservation of select parcels of Arizona's trust lands near urban areas for open space to benefit future generations. Arizona Preserve Initiative laws set forth a process by which trust lands can be leased for up to 50 years or sold for conservation purposes. Under the regulations established, both leases and sales must be brought to public auction. As of 2012, 33 petitions have been made for the reclassification of some 120,032 acres as suitable for conservation purposes (Arizona State Land Department, API 2003). Since the Arizona Preserve Initiative's origination, 16,343 acres have been sold and

some $393,269,200 with in contributions to the state's permanent trust fund (API 2012).

Non-Leasing Opportunities

All of the comparative states investigated in this study (i.e. those in Section 4); have used mechanisms that technically do not involve direct leasing to generate income from state trust lands. These include, impact payments, fees-in-lieu, royalties and fees associated with various forms of easements, rights-of-entry and rights-of-way.

In Wyoming, surface impact payments are principally associated with the development of energy resources and surface uses (e.g. wind energy, minerals, coal bed methane gas and surface disturbances due to other sub-surface exploration. In most instances, such use and/or development is compatible with grazing and other agricultural operations in place on state trust lands. Therefore, grazing leases have historically been layered with such uses. In most cases, surface impact payments collected have increased with the market for certain resource. For example, recent growth in the production and marketability of wind power and coal bed methane gas have increased net income from surface impact payments, which totaled nearly $2.6 million in FY 2011 (Table 9.3).

Lease layering via non-lease arrangements in Montana takes place in a few different ways. As previously discussed in this section, DNRC collects a fee of $2.00 per annual conservation license, which allows for hunting, fishing, and trapping on trust lands. Nearly $840,000 was raised in FY2011 though conservation licenses. Additionally, royalties for oil and gas, rentals and bonus payments have more recently generated substantially, if not the majority of the DNRC's income to the trust (Table 9.3).

Oregon and Washington have vast shorelines, submerged and aquatic lands. In Washington, some 2.6 million acres of aquatic lands contribute significant revenues to the state's trust ($37 million in FY2011) via through various contracts and easements.

Easements are widely used across the five comparative states. Revenues produced through easement in FY2011 in Utah totaled over $977,000, over $638,000 in Wyoming and nearly $567,000 in Montana (Table 9.3). Oregon has two types of easements, permanent and private access/utility easements. The granting of permanent easements is limited to public entities, i.e. for public roads, highways, and bridges. Private access and utility easements are generally limited to 30 years. Recently, Oregon's DSL became aware of a provision in their statutes that provides a

50-foot easement for irrigation ditches, waterlines, etc. simply by filing a plat, with no provision for payment. DSL is working to correct this loophole to assure access to this statutory revenue stream (L. Quakenbush, personal communication 2012).

Rights-of-Way (ROW) and Rights-of-Entry (ROE) are used for various purposes by the five comparative states. In FY 2011, Washington collected $788,000 in ROW fees, followed by Montana ($566,817) and Utah ($272,445). Generally, the ROW fees assessed in these three states are for access to the reserved interests to the land under the lease, excluding those grazing or agricultural uses for which the lease was granted. ROW fees include access to lands for existing or future installations by the State (e.g. power lines, tunnels, ditches, canals, telephone). ROWs are also reserved for the state, its lessees and its representatives to enter onto lands for purposes such as mining, minerals exploration and removal, timber or other forest products, and advertising signage (K. Chappell, R. Roeder, and R. Torgerson, personal communications, June and July 2012).

ROEs are more typically fees paid by other agencies or organization responsible for carrying out certain duties. For example, in Montana a ROE is generally granted through issuance of a land use license, through which assessed fees are collected. A land use license may allow agencies to occupy certain DNRC lease lands for a defined period necessary to perform certain construction or repair work (e.g. Department of Transportation). Similarly, representatives of Montana's State Historical Society, on notice in writing to DNRC, may enter onto leased lands to conduct certain work assigned to it per State Antiquities Act, 22-3-4, MCA. IDL enters into similar ROE arrangements for access to or through leased lands through agreements, contracts, and permits with various state and federal agencies. As in most cases, each arrangement is negotiated for a specified period and fees are determined by the nature of the applicant's proposed activity.

Given the nature of both ROWs and ROEs it is not expected that related fees will provide significant new revenue opportunities for IDL's Grazing Land program.

Agricultural Leases

Oregon is the only state that has actively considered the separation of and potential for layering agricultural and grazing leases. DSL has relatively few agricultural leases, which have historically included grazing on non-farmable portions. One recent conversion project was envisioned as a layered arrangement, but has been separated into two adjacent leases rather than layered.

Wyoming does not separate between agricultural and grazing leases. Leases are known as "Grazing and Agricultural" and are done on a cash basis. Although some leases used to be on a crop share basis, no such leases currently exist. More recently, there has been discussion about revisiting the potential for crop share arrangements on certain leases (J. Van Hatten, personal communication 2012).

Several states, including Idaho, Montana and Washington allow for grazing on non-farmable portions of an agricultural lease (N. Crescenti, R. Roeder, and K. Chappell, personal communications, June and July 2012). Over the past few years, Washington has concentrated efforts on bolstering its Agricultural Lands program, which generated total revenues in excess of $13M in FY2011, nearly a 12% increase over FY2010 (R. Roeder, personal communication June 2012; Washington DNR 2012).

While IDL may capture slightly greater market value by identifying and seeking greater opportunities for agricultural and grazing lease layering, no significant new revenue opportunities are expected.

9.5 Alternative Trust Land Management Models

The Idaho State Constitution mandates that state endowment lands be "held in trust" and charges the State Land Board with managing such lands to *"maximize long-term financial returns to the beneficiary institutions [and] provide protection to Idaho's natural resources".* This directive requires evolution of strategies employed by IDL, the Land Board's administrative branch. Thus, through its business model IDL must ensure the way in which it structures its resources, partnerships and leasehold relationships continues to create and capture value – in such a way that revenue generation from state endowment lands are maximized given the environmental and social factors that affect the long-term performance of these assets.

Capturing Market Lease Value

Like most commodities, the value of a grazing lease depends on a variety of factors associated with the lease (e.g., forage productivity, land capability, location, access, water resources, etc.). As discussed in earlier sections, it is widely recognized that grazing leases on state and federal public lands, differ from the average private market lease, both in duration and services provided (e.g. water improvements, fencing, buildings, etc.). Overhead and administrative costs for permittees are also considered to be more onerous when dealing with federal and state land agencies and this is reflected in the market value of grazing permits (Rimbey et al. 2007). All things being equal between private and state grazing land (forage quality, location, access, stock water, etc.), the fact remains that IDL is a government agency subject to

political, governmental, and environmental pressures that reduce the dependability and flexibility of the tenant in utilizing the forage and managing livestock as compared to private leases. Grazing fees are justifiably less than private rates; the question is how much should that discount be?

Historical findings about the value of lessor-provided services, across studies, indicate that such services on average comprise about 30% to 35% of the average lease price (Bartlett et al 2002). Similarly, the hedonic model and evaluation of Montana's private grazing leases by Duffield and Anderson (1993), found that the full market value for state grazing leases was about 70% of the average private market lease rate. The findings of the hedonic model for this study indicate 86% to 88% of the average private lease rate (Table 7.2).

The subject study provides useful information about the private lease market in Idaho, and those values ranchers place on key lease characteristics. Significantly, survey results indicate that Idaho's private market for forage leasing is not precise; that individuals use a variety of criteria when agreeing to lease terms and rates. While opportunities appear to be limited, the greatest potential for lessor-provided services typical of private leases that may enable IDL to capture a greater percent of market value through state grazing leases include:

- Provide range management services such as daily care, moving, doctoring, and watering livestock ($2.21/AUM or 14% increase in lease rate, Table 7.2). This would likely mean a net economic loss, however. Rimbey and Torell (2011) estimated it costs nearly $10/AUM for private ranchers to provide these services.
- Maintenance services including the erection and repair of fences and facilities. Rimbey and Torell (2011) estimate average 2010 improvement maintenance expenses on private leases of $3.70/AUM.
- Inclusion of irrigated lands; a 10% percent increase in the amount of irrigated land increases the lease rate by $0.22/AUM. For example, a lease on 100% irrigated pasture on average would increase the lease rate by $2.16/AUM over a native rangeland lease. Land exchanges to acquire more irrigated lands could increase pasture rental rates, but other perhaps more lucrative crop lease opportunities might then exist.
- Based on a limited number of yearling operators in the sample, inclusion of yearlings on a lease consistently brought a higher $/AUM lease price ($3.53/AUM). This was because yearling producers apparently did not discount yearlings at the assumed 0.7 AUE.

- If IDL provided more than forage to grazers, charging on a $/acre basis may capture added value. However, if only forage is provided the pricing method is inconsequential to revenue generation. As an example, New Mexico state lands are mandated to charge on a $/acre basis. Each leased parcel has a carrying capacity rating and the rate per acre varies linearly with the capacity (Torell et al. 1990). Revenue would be equivalent if computed on an AUM basis unless the parcel is understocked because of drought, convenience, or temporary circumstances.
- Charging on a weight gain basis could increase revenues in some cases but in the private forage market this method of pricing was not common (1% of study leases) and likely implemented only on the most productive and reliable leases.

While subleasing is a question of interest to IDL, it was not found to be a common practice in the private market; only 2.5% of those leases reported through the survey included subleasing provisions.

Location

The concept of land as location for grazing is important in several respects, which include not only distance from the base ranch, access to markets, and productive capacity, but also proximity to population growth centers and opportunities for non-agricultural uses (e.g. recreational access for fishing, hunting, etc.). As found with respect to regional variation in land markets and respective land values in Section 8, the study finds regional variations in lease rates, affected by factors not related to service inputs addressed above. Location attributes are closely related to quality, which include factors as precipitation and weather, type and character of vegetation, availability of stock water, and steepness of terrain. Such characteristics in turn influence ranch operations, market values, and lease rates.

Again, the subject study provides useful information about location with respect to the private lease market in Idaho. To capitalize on elements of location may require revision of the lease pricing structure, development of regional acquisition strategies for key rangelands, and/or disposal of rangelands that may be underperforming or will provide greater revenues to the trust in another use. Additionally, enhancing grazing revenues through modification of current holdings suggests thorough consideration of layered leasing arrangements. Areas for greatest potential include the Eastern and Payette Lakes regions. The Payette Lakes region was found to have lease rates $1.86/AUM higher than the Northern, South Central, and Southwest regions, and the Eastern region lease rate was $1.43 higher. Similarly, per acre

dryland market values were, on average, higher in the Eastern and Payette Lakes regions, with market highs/lows at $955/$490 and $783/$433, respectively (see Executive Summary table ES1).

Competition

Several studies have found that competitively issued leases are more likely to capture full market value. Implementing processes that encourage competition for available leases could generate additional revenue for Idaho's trust beneficiaries (Tittman and Brownell 1984). Utah and several other states have put procedures in place that promote competition for grazing leases. Annual revenue gains over standard lease rents of 15% and greater have been reported, even in the recent down economy.

Other Considerations

Several states have evolved their business models to incorporate a more inclusive multi-benefit approach that involves diversification of grazing land programs and management options to meet different environmental and social criteria, in addition to financial performance. Detailed financial and operational analysis of other states' models is outside the scope of this study; thus, a summary of one approach being taken in Wyoming is presented as an opportunity to open the dialogue as IDL considers diversification of its portfolio and asset management strategies with a goal toward developing optimum sustainable revenues for its beneficiaries.

In Wyoming, state trust lands have been historically managed consistent with the traditional trust values of long-term growth in value and optimum revenue production. Field staff time allocated to the Grazing & Agriculture Leasing Program comprised roughly 30% to 40% of total field staff time, on average over the last five years. Most of this work is attributable to inspections of expiring grazing leases, which average around 400 annually. Wyoming's total revenue received from grazing was 1.6% of total trust land revenue in FY2011 (Table 9.9).

Table 9.9 Summary Comparative Total Revenue/Acre for State Grazing Programs, FY 2011

State	Total Trust Land Acres	Grazing Lease or Permit Acres	% Total in Grazing Leases	Total Revenue Grazing	$ /Acre Grazing	Total Revenue All Programs	% Total ($) Grazing
Montana	5,100,000	4,070,000	79.8%	$6,625,329	$1.63	$108,622,148	6.1%
Oregon[1]	2,802,260	631,917	22.6%	$515,584	$0.82	$13,165,188	3.9%
Idaho	2,500,000	1,764,301	70.6%	$1,878,863	$1.06	$67,526,091	2.8%
Wyoming	3,547,408	3,490,000	98.4%	$5,000,301	$1.43	$314,455,948	1.6%
Washington	2,300,000	803,600	34.9%	$2,283,000	$2.84	$319,725,000	0.7%
Utah	3,500,000	3,200,000	91.4%	$864,777	$0.27	$121,892,602	0.7%

Source: Idaho Department of Lands, The Land Where Miracles Grow, 2011 Annual Report; Montana Department of Natural Resources and Conservation, Trust Land Management Division, 2011 Return on Assets Report; Oregon Department of State Lands, Annual Report on Land Asset Management for FY 2011 and Oregon Department of Forestry and Department of State Lands, Common Schools Forest Lands 2011 Annual Report; State of Utah, School & Institutional Trust Lands Administration, Fiscal Year 2011 - 17th Annual Report and email communication from R. Torgerson, July 2012; Washington State Department of Natural Resources, 2011 Annual Report; Wyoming Office of State Lands and Investments Annual Report. 2011. Summary of Revenues from All Sources.

[1]Oregon - ODF manages the Common School Forest Lands under a 2005 agreement with Oregon SLB and the DSL. Oregon separates acreage for waterways, commercial, stewardship lands and mineral/energy resource lands. Mineral resource acres occur in "split estates" in which DSL owns the mineral rights, not the land surface. The acreage estimate is based on the best available information as of June 30, 2011.

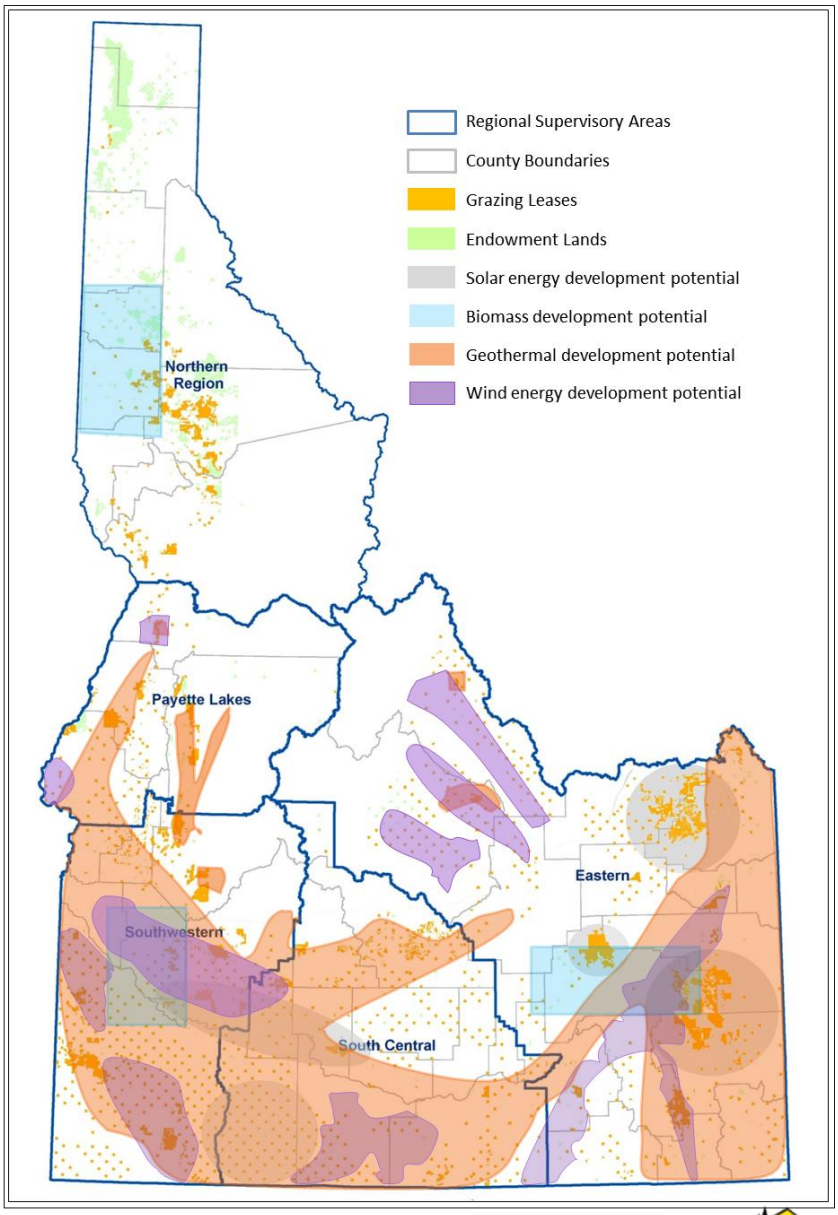
To increase the performance of its grazing program, OSLI plans advertise and lease 10% of the vacant land available for grazing annually, and/or consider other real estate transaction options that better meet Wyoming's trust land management objectives. Further, OSLI will use new technologies and training methods to increase the percentage of grazing leases inspected, thereby ensuring that proper grazing practices are being implemented for optimum, sustainable revenue production (Wyoming OSLI 2011b).

9.6 Regional Opportunities

The distribution, accessibility, and character of IDL's grazing lands may present certain temporal management challenges that combined with forage and other limitations may restrict the ability to employ some of the alternatives presented above to their highest potential. Yet, with some modification, there appear to be several opportunities that may enhance net return from lands that can support approaches leading to diversification of IDL rangeland assets as well as revenue

streams. Summarized in Figure 9.7 are those opportunities specifically aligned with various green energy developments most conducive for further evaluation, by region.

Figure 9.7 Summary Map of IDL Regions Resource Lease Layer Potential



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APPENDIX A – PERSONAL COMMUNICATIONS

Contact	Agency / Organization	Dates	Purpose
Rod Brevig	Idaho State Tax Commission	2/6/2012	Agricultural exemption on property tax
Kevin Chappell	Montana Department of Natural Resources and Conservation	2/9/2012 3/19/2012 6/20/2012	State Grazing Program comparative analysis Alternative grazing program / lease structures
Chris Clay	Idaho Department of Lands	2/28/2012 3/1/2012	IDL boundary layers for GIS integration Ada County dry grazing property database
Neil Crescenti	Idaho Department of Lands	2/1/2012	State Grazing Program comparative analysis
Janet James	Idaho State Tax Commission	2/3/2012	Agricultural exemption on property tax
Thomas Kurtz	Idaho Field Office, USDA-NASS	1/27/2012	Idaho County livestock estimates
Rick Roeder	Washington Department of Natural Resources	2/2/2012 5/18/2012 7/9/2012	State Grazing Program comparative analysis Grazing/permit structure verification; alternative program business models/lease structures
Tom Shea	Washington Department of Natural Resources	7/12/2012	Alternative leases; hydrocarbon
Ron Torgerson	Utah School and Institutional Trust Lands Administration	2/6/2012 5/18/2012 7/11/2012	State Grazing Program comparative analysis Seed lease clarification; layered lease arrangements
Jamie Van Hatten	Wyoming Office of State Lands and Investments	2/9/2012 5/7/2012 7/11/2012	State Grazing Program comparative analysis Alternative program model and lease structures
Randy Wiest	Oregon Department of State Lands	2/6/2012 5/8/2012 7/11/2012	State Grazing Program comparative analysis Alternative program model and lease structures
Lanny Quackenbush	Oregon Department of State Lands Eastern Oregon Region Manager	6/6/2012 6/20/2012	Layered lease arrangements Alternative business models
Jeremy Dixon	Custer County	4/24/2012	Verification of assessed values for dry grazing land
Harlan Lund	Northwest Farm Credit	1/11/2012 1/24/2012	Dryland sales; market valuation

Contact	Agency / Organization	Dates	Purpose
Roger Cramer	Northwest Farm Credit	1/11/2012	Dryland sales; market valuation
Brent Stanger, ARA MRICS	LeMoyne Realty & Appraisals, Inc.	1/10/2012 2/6/2012	Dryland sales; market valuation; comparative sales
Bob Morrission, ARA	Robert Morrision Appraisals LLC	2/6/2012	Dryland sales; market valuation; comparative sales
Craig Turner, ARA	Western Ag Credit	1/31/2012	Dryland sales; market valuation; comparative sales
Robert McQuade	Ada County Assessor	2/28/2012 3/1/2012	Tax assessed value dryland parcels; rangeland/agricultural exemption
Robin James Ginger Getusky	Adams County Assessor Adams County Assessor	2/28/2012 3/8/2012 3/15/2012	Tax assessed value dryland parcels; agricultural exemption
Dave Packer	Bannock County Assessor	2/28/2012 2/29/2012	Tax assessed value dryland parcels; agricultural exemption. Follow-up call
Lynn Lewis	Bear Lake County Assessor	2/28/2012 3/8/2012 3/14/2012	Tax assessed value dryland parcels; agricultural exemption. Follow-up call
Donna Spier	Benewah County Assessor	2/28/2012 3/8/2012	Tax assessed value dryland parcels; agricultural exemption. Follow-up verification of assessed values
Ron Simmons	Bingham County Assessor	2/28/2012 3/8/2012 3/14/2012	Tax assessed value dryland parcels; agricultural exemption. Follow-up call
Valdi Pace	Blaine County Assessor	2/28/2012 2/29/2012	Tax assessed value dryland parcels; agricultural exemption
Brent Adamson	Boise County Assessor	2/28/2012 3/8/2012 3/9/2012	Tax assessed value dryland parcels; agricultural exemption
Jerry Clemons	Bonner County Assessor	2/28/2012 3/8/2012 3/14/2012	Tax assessed value dryland parcels; agricultural exemption

Contact	Agency / Organization	Dates	Purpose
Blake Mueller; Dawn Leatham	Bonneville County Assessor	2/28/2012 3/12/2012 3/15/2012	Tax assessed value dryland parcels; agricultural exemption
David Ryals Terri Cushman	Boundary County Assessor	2/28/2012 3/6/2012	Tax assessed value dryland parcels; agricultural exemption
Laurie Gamett	Butte County Assessor	2/28/2012 3/8/2012 3/9/2012	Tax assessed value dryland parcels; agricultural exemption
Lynn McGuire	Camas County Assessor	2/28/2012 3/8/2012 3/9/2012	Tax assessed value dryland parcels; agricultural exemption
Gene Kuehn, Brian Stender	Canyon County Assessor	2/28/2012 3/8/2012 3/15/2012	Tax assessed value dryland parcels; agricultural exemption
Aaron Cook	Caribou County Assessor	2/28/2012 2/29/2012	Tax assessed value dryland parcels; agricultural exemption
Dwight Davis	Cassia County Assessor	2/28/2012 2/29/2012 3/1/2012 3/7/2012	Tax assessed value dryland parcels; agricultural exemption
Carrie May	Clark County Assessor	2/28/2012 3/8/2012 3/9/2012	Tax assessed value dryland parcels; agricultural exemption
Mellissa Stewart Michael Goodwin	Clearwater County Assessor	2/28/2012 3/7/2012	Tax assessed value dryland parcels; agricultural exemption
Christine James	Custer County Assessor	2/28/2012 3/5/2012	Tax assessed value dryland parcels; agricultural exemption
Ron Fisher	Elmore County Assessor	2/28/2012 2/29/2012	Tax assessed value dryland parcels; agricultural exemption

Contact	Agency / Organization	Dates	Purpose
Jace Cundick Lynn Sant	Franklin County Assessor	2/28/2012 3/8/2012 3/12/2012 3/15/2012 3/18/2012	Tax assessed value dryland parcels; agricultural exemption. Follow-up; clarification
Kathy Thompson	Fremont County Assessor	2/28/2012 3/6/2012	Tax assessed value dryland parcels; agricultural exemption
Patty Bauscher	Gooding County Assessor	2/28/2012 2/29/2012	Tax assessed value dryland parcels; agricultural exemption
James Zehner	Idaho County Assessor	2/28/2012 3/8/2012	Tax assessed value dryland parcels; agricultural exemption
Cody Taylor	Jefferson County Assessor	2/28/2012 3/6/2012	Tax assessed value dryland parcels; agricultural exemption
Mike McDowell	Kootenai County Assessor	2/28/2012 3/1/2012	Tax assessed value dryland parcels; agricultural exemption
Patrick Vaughn, Susan Ripley	Latah County Assessor	2/28/2012 3/8/2012 3/9/2012	Tax assessed value dryland parcels; agricultural exemption
Shelly Brian	Lewis County Assessor	2/28/2012 3/8/2012	Tax assessed value dryland parcels; agricultural exemption
Jenny Rosin Heather Bolerjack	Lemhi County Assessor	2/28/2012 2/29/2012 3/1/2012	Tax assessed value dryland parcels; agricultural exemption
Linda Jones	Lincoln County Assessor	2/28/2012 3/8/2012 3/13/2012	Tax assessed value dryland parcels; agricultural/rangeland exemption. Follow-up; clarification
Brent Saurey	Madison County Assessor	2/28/2012 2/29/2012	Tax assessed value dryland parcels; agricultural exemption. Follow-up; clarification

Contact	Agency / Organization	Dates	Purpose
Max Vaughn	Minidoka County Assessor	2/28/2012 3/8/2012 3/9/2012	Tax assessed value dryland parcels; agricultural exemption
Dan Anderson Brad Bovey	Nez Perce County Assessor	2/28/2012 3/8/2012 3/9/2012	Tax assessed value dryland parcels; agricultural/rangeland exemption. Follow-up; clarification
Dixie Hubbard	Oneida County Assessor	2/28/2012 3/8/2012	Tax assessed value dryland parcels; agricultural exemption
Brett Endicott	Owyhee County Assessor	2/28/2012 3/8/2012 3/14/2012	Tax assessed value dryland parcels; agricultural exemption. Follow-up; clarification
Sharon Worley	Payette County Assessor	2/28/2012 3/8/2012 3/13/2012	Tax assessed value dryland parcels; agricultural exemption
Doug Glascock	Power County Assessor	2/28/2012 3/9/2012 3/15/2012 3/16/2012	Tax assessed value dryland parcels; agricultural exemption. Follow-up; clarification
Jerry White Marilyn Hinsz	Shoshone County Assessor	2/28/2012 3/5/2012	Tax assessed value dryland parcels; agricultural exemption. Follow-up; clarification
Bonnie Beard	Teton County Assessor	2/28/2012 3/8/2012 3/9/2012	Tax assessed value dryland parcels; agricultural exemption. Follow-up; clarification
Gerry Bowden	Twin Falls County Assessor	2/28/2012 3/9/2012 3/13/2012	Tax assessed value dryland parcels; agricultural exemption. Follow-up; clarification

Contact	Agency / Organization	Dates	Purpose
June Fullmer	Valley County Assessor	2/28/2012 3/7/2012 3/8/2012	Tax assessed value dryland parcels; agricultural exemption. Follow-up; clarification
Georgia Plischke Sharene Ahlin	Washington County Assessor	2/28/2012 3/9/2012 3/13/2012 3/15/2012	Tax assessed value dryland parcels; agricultural exemption. Follow-up; clarification

APPENDIX B – GRAZING LEASE SURVEY FAQ AND SURVEY CALL PROTOCOL

Idaho Department of Lands

GRAZING MARKET RENT STUDY
ANSWERS TO FREQUENTLY ASKED QUESTIONS

Who is sponsoring the survey?

The Idaho Department of Lands (IDL).

The project is being conducted by Resource Dimensions, LLC under contract to IDL. Researchers at the University of Idaho are part of the project team and are conducting the survey process.

If more information is requested:

The Resource Dimensions team conducting the study is composed of certified land appraisers, economists specializing in agricultural resources, range lands, and the Social Science Research Unit in the College of Agricultural Sciences at the University of Idaho. Our role is to bring independent expertise to this study. The team was selected by IDL, through a competitive process, due to our experience and familiarity with grazing lands, public trust lands, resource management issues and communities across the State.

What is the purpose of the study (or survey)?

The purpose of the study is to provide the IDL and the Land Board with important information about current leasing trends and conditions. This information will be used to help IDL make future decisions on how to best manage the State's grazing lands.

Who is the person responsible for the survey?

Resource Dimensions is a private firm under contract to the Idaho Department of Lands. The project principal is Julie Ann Gustanski, President of Resource Dimensions. You are welcome to contact her at (253) 265-2054.

Who are you? / Who is conducting the interview?

I am a student researcher _____ working part-time for the Social Science Research Unit at the University of Idaho. The Social Science Research Unit is part of the Resource Dimensions study team.

Alternative for all other RD team:

My name is _____ I am an appraiser/researcher and a member of the Resource Dimensions team working on the study.

How did you get my name?

The sample has been randomly selected from over 4,000 landowners and ranchers in the state.

How can I be sure this is authentic?

(For SSRU)

I would be glad to give you the toll free-telephone number of the Social Science Research Unit at the University of Idaho in Moscow, Idaho. You are welcome to call my supervisor Barbara Foltz at (877) 542-3019. Our office hours are 8:00 am - 5:00 pm PST Monday through Friday.

(For all other team members when in the field)

I would be glad to give you the toll free-telephone number for Resource Dimensions. You are welcome to call the project principal at (877) 362-3266. Office hours are 8:00 am - 6:00 pm Pacific Standard Time (PST) Monday through Friday.

Is this information confidential?

Yes, most definitely. All responses are combined without names, addresses, or any means of identifying individual respondents.

Can I get a copy of the study results?

The information will be used internally by IDL and the Land Board. The Department will release an executive summary of the findings which should be available in the summer of 2012. When available it will be posted to their website at http://www.idl.idaho.gov

What will be done with the information that is provided?

Information provided by lessors and lessees will be used to help determine the typical lease conditions and type favored in lease study regions which includes: Eastern Idaho, South Central Idaho, Southwestern Idaho, Camas Prairie and Palouse. The IDL will consider our analysis of information gained from the study for future decisions about effective uses of state endowment agriculture property in each study region.

Are there other ways I can express my ideas or concerns to the Idaho Department of Lands?

You may contact Julie Gustanski at (253) 265-2054 or Toll Free (877) 362-3266 or by email at jgustanski@ecologicalecon.com to make additional comments on the IDL survey or to receive information on how to become more involved. Additionally, you may contact the Department of Lands project manager, Neil Crescenti at (208) 334-0278 or by email at ncrescenti@idl.idaho.gov

Final Grazing Market Rent Survey Protocol with Coding

Q: Intro1

Hello, my name is ___ and I'm calling from the Social Science Research Unit at the University of Idaho. We are conducting a study for the Department of Lands regarding grazing leases. I'm trying to reach the person who is most knowledgeable about your ranch or rangeland property? Would that happen to be you?
(HIT NEXT TO CONTINUE)

Hello, I'm trying to reach ____. This is ____ from the Social Science Research Unit at the University of Idaho.
We started this study at an earlier time. Would this be a good time to continue?

Q: Intro2

Is this phone number a cell phone or a landline number?

1. Cell phone
2. Landline

IF (ANS = 1) SKP CELLINTRO1
IF (ANS = 2) SKP INTRO3

Q: CellIntro1

Are you currently driving a car or doing anything that requires your full attention?

1. Yes
2. No

IF (ANS = 1) SKP CELLDRIVING
IF (ANS = 2) SKP CELLINTRO2

Q: CellIntro2

Some of the numbers we are calling are for cell phones. Some people have concerns about the privacy of conversations on cell phones, or have a limited number of minutes on their cell phone plans. If you would like, I would be happy to call you back at another time or on another number if that is more convenient for you. [PRESS NEXT TO CONTINUE]

Q: Intro3

This survey is about lease arrangements for private grazing leases in Idaho. This is a statewide survey which has been approved by the Institutional Review Board for the University of Idaho. This interview takes about 18 minutes on average, and includes questions about private grazing leases you may hold or lease to others. This interview is voluntary and if we come to any question you'd prefer not to answer, just let me know and I'll skip over it. I'd like to assure you that your answers will be kept strictly confidential. Do you have any questions
before we begin? [PRESS NEXT TO CONTINUE]

Q: Q1LeaseTo

Do you lease rangelands in Idaho TO someone else?

1. Yes
2. No
9. Refused

If (ans = 1) skp Q2Acreageto
If (ans >= 2) skp Q3Leasefrom

Q: Q2AcreageTo

Please tell me the number and total acreage of parcels leased in 2011 from each of the following types of rangelands. [Interviewers: Other agencies include BLM, Forest Service, etc.]

[Interviewer: You MUST click the Private lease box and enter 0 if NO PRIVATE LEASES + any other applicable box]

	Number	Acres
1. Private party/privately owned		
2. Idaho Department of Lands		
3. Other Agencies		

If (q2aPrivate > 0) skp Q7aLP1County
If (q2aPrivate = 0) skp Q3LeaseFrom

Q: Q7aLP1County

Of the private leases you just mentioned, I would now like to focus on two leases for the remaining questions.
Please select two leases that you believe may be the most representative of the forage rangeland leases you lease to another party.

Now, in what Idaho County is the first lease held?

Q: Q7bLP1Town

What is the nearest town to this lease? We will refer to this lease from now on as "Parcel 1".

Q: Q8LP1Year

In what year was the most recent lease agreement made or renewed on Parcel 1?
[9999 = refused]

Q: Q9LP1Length

What is the length of the lease, in years, on Parcel 1? [9999 = refused]

Q: Q10LP1Whom

To whom do you lease Parcel 1 lands?

1. A relative or related group
2. A non-related individual, group, corporation, or partnership
3. Other (specify)
9. Refused

Q: Q11LP1written

Is the lease arrangement for Parcel 1 written or verbal?

1. Written
2. Verbal
9. Refused

Q: Q12LP1Sub

Are there provisions in the Parcel 1 lease that would allow the tenant to sublease the property?

T: 7 15 1
1. Yes
2. No
8. Don't know (don't read)
9. Refused (don't read)

Q: Q13LP1Renew

What is the renewal arrangement for Parcel 1?

T: 7 15 1
1. For a specified number of years (specify #)
2. Automatic renewal each year unless either party terminates
8. Don't know
9. Refused

Q: Q14LP1Miles

What is the approximate distance in miles from Parcel 1 to the tenant's residence or base property?

Q: Q15LP1Lands

What percent of the lands included in Parcel 1 are in each of the following categories?

Native rangeland
Improved (seeded) rangeland
Crop aftermath
Irrigated pasture
Some other type of rangeland (specify)

Q: Q16aGrazeLP1

Did any livestock graze Parcel 1 in 2011?

1. Yes
2. No
9. Refused

If (ans = 1) skp Q16bGrazeLP1
If (ans >= 2) skp Q18LP1System

Q: Q16bGrazeLP1

What types of livestock grazed this parcel in 2011?

1. Cattle/Cow-calf
2. Cows only
3. Feeder cattle (stockers)
4. Bulls
5. Sheep
6. Goats
7. Other (specify)
9. Refused

Q: Q17LP1Times

Based upon the type of livestock you identified in the previous question, for each group and class of animal, please list the number that the tenant/manager turned out on parcel 1, the date they started grazing,
the number of animals taken off the parcel, and the date they stopped grazing.

	Started Grazing		Stopped Grazing	
	Number	Date	Number	Date
Cow-calf pairs				
Cows only				
Feeder cattle				
Bulls				
Horses				
Ewe-lamb				
Ewe only				
Rams				
Other livestock				

Q: Q18LP1system

How would you characterize the grazing system used on Parcel 1? Would you say it is...

T: 7 15 1
1. Season-long
2. Deferred
3. Rest rotation
4. Short duration
5. Other (specify)
8. Don't know
9. Refused

Q: Q19LP1Services

I'm going to read a list of items and services that are often associated with grazing leases. For each item,please tell me who provides the item for Parcel 1, or if it's not applicable to the lease.

	Landlord Provides	Tenant Provides	Both Provide	NA	Refused
Provide Building/ Replace Equipment (fence, water, etc)					
Maintain Equipment					
Control Livestock (Pasture moves, vet)					
Provide Salt					
Provide Nutritional Supplements					
Haul Water					
Provide Utilities					
Provide Liability Insurance					
Provide Noxious Weed Control					
Provide Irrigation Water					
Pay Land Taxes					
Other (specify)					

Q: Q20aLP1costshare

Is there a cost share agreement for property maintenance or operation expenses on Parcel 1?
1. Yes
2. No
9. Refused

If (ans = 1) skp Q20bLP1percent
If (ans >= 2) skp Q21LP1Access

Q: Q20bLP1percent

What is the percentage cost share that YOU pay?

Q: Q21LP1access

Did you allow or control for public recreation access or other nuisances for Parcel 1?

1. Yes

2. No
9. Refused
Q: Q22aLP1Death

Does the lease agreement for Parcel 1 specify any type of death loss guarantee or adjustment?

1. Yes
2. No
9. Refused

If (ans = 1) skp Q22bLP1Percent
If (ans >= 2) skp Q23aLP1Gain

Q: Q22bLP1Percent

What is the percent of death loss guarenteed? [Interviewer: if they provide it, it will
be a low number, on the order of 0 - 3%]

Q: Q23aLP1Gain

Does the lease agreement for Parcel 1 specify any type of gain guarentee in terms of pounds per day or
hundredweight per season?

1. Yes
2. No
9. Refused

If (ans = 1) skp Q23bLP1specify
If (ans >= 2) skp Q24LP1Water

Q: Q23bLP1specify

Please specify the pounds per gain guarenteed with this lease.
[Interviewer: Probably in terms of lb/head/season or lb/head/day and will most likely be with stocker cattle leases.]

Q: Q24LP1Water

Which of the following water sources, if any, does Parcel 1 contain?

1. River, stream, creek
2. Lake or pond
3. Spring
4. Wind-powered well
5. Motor-driven well (electric, gas, diesel)
6. Solar-powered well
7. Other (specify)
9. Refused

Q: Q25LP1Right

Do you hold a water right for the Parcel 1 property under lease?

1. Yes
2. No
9. Refused

Q: Q26LP1Carry

How did you determine the carrying capacity or total number of animals allowed for Parcel 1?

1. Historic use records on this property
2. Negotiated with tenant
3. Climatic conditions and vegetation analysis
4. Other (specify)
8. Don't know
9. Refused

Q: Q27LP1Cond

Did you require the tenant to provide information on range conditions for Parcel 1
after the grazing season?

1. Yes
2. No
9. Refused

Q: Q28LP1Charge

How do you charge for the lease on Parcel 1?

1. Per acre
2. Per head per month
3. Per head per day
4. Per AUM (animal unit month)
5. Per pound of gain
6. Per hundredweight of gain
7. A lump sum payment
8. Other method of payment (e.g. trade of commodity, trade labor) (please describe)
9. Refused

Q: Q29LP1Rate

What rate did you charge for the lease on Parcel 1 in 2011 (according to the payment used)?

RATE UNITS/DESCRIPTION

Q: Q30LP1Dollar

What was the total dollar amount received from the lease on Parcel 1 for 2011?

Q: Q31LP1Paid

Is your lease for Parcel 1 paid...

1. Before grazing
2. After grazing
3. Split payment/combination (explain)
4. Other (specify)
9. Refused

Q: Q32LP1Est

How did you establish the lease rate for Parcel 1?

1. Historic rate
2. Negotiation with tenant
3. Going rate in the area
4. Other (specify)
9. Refused

Q: Q7TP2
T:3 5 1
Did you lease a second privately held parcel to anyone else in 2011? (or, of the other leases you leased to someone else in 2011, please select a second lease that is typical of your leased parcels).

If (Ans = 1) skp Q7cLP2County
If (Ans = 2) skp Q3LeaseFrom

Q: Q7cLP2County

In what Idaho County is the second lease held?

Q: Q7dLP2Town

What is the nearest town to this lease? We will refer to this lease as Parcel 2.

Q: Q8LP2Year

In what year was the most recent lease agreement made or renewed on Parcel 2?
[9999 = refused]

Q: Q9LP2Length

What is the length of the lease, in years, on Parcel 2? [9999 = refused]

Q: Q10LP2Whom

To whom do you lease Parcel 2 lands?

1. A relative or related group
2. A non-related individual, group, corporation, or partnership
3. Other (specify)
9. Refused

Q: Q11LP2Written

Is the lease arrangement for Parcel 2 written or verbal?

1. Written
2. Verbal
9. Refused

ENTER

Q: Q12LP2Sub

Are there provisions in the Parcel 2 lease that would allow the tenant to sublease the property?

1. Yes
2. No
8. Don't know (don't read)
9. Refused (don't read)

Q: Q13LP2Renew

What is the renewal arrangement for Parcel 2?

T: 7 15 1
1. For a specified number of years (specify #)
2. Automatic renewal each year unless either party terminates
8. Don't know
9. Refused

Q: Q14LP2Miles

What is the approximate distance in miles from Parcel 2 to the tenant's residence or base property?

Q: Q15LP2Lands

What percent of the lands included in Parcel 2 would you say are in each of the following categories?

Native rangeland
Improved (seeded) rangeland
Crop aftermath
Irrigated pasture
Some other type of rangeland (specify)

Q: Q16cGrazeLP2

Did any livestock graze Parcel 2 in 2011?

1. Yes
2. No
9. Refused

If (ans = 1) skp Q16dGrazeLP2
If (ans >= 2) skp Q17LP2times

Q: Q16dGrazeLP2

What types of livestock grazed this parcel in 2011?

1. Cattle/Cow-calf
2. Cows only
3. Feeder cattle (stockers)
4. Bulls
5. Sheep
6. Goats
7. Other (specify)
9. Refused

Q: Q17LP2Times

We are now going to do the same thing for Parcel 2. For each group and class of animal on Parcel 2, please list the number that the tenant/manager turned out on parcel 2, the date they started grazing,
the number of animals taken off the parcel, and the date they stopped grazing.

	Started Grazing		Stopped Grazing	
	Number	Date	Number	Date
Cow-calf pairs				
Cows only				
Feeder cattle				
Bulls				
Horses				
Ewe-lamb				
Ewe only				
Rams				
Other livestock				

Q: Q18LP2System

How would you characterize the grazing system used on Parcel 2? Would you say it is...

1. Season-long
2. Deferred
3. Rest rotation
4. Short duration
5. Other (specify)
8. Don't know
9. Refused

Q: Q19LP2Services

We're now going to do the same thing with Parcel 2. For each item, please tell me who provides the item for Parcel 2, or if it's not applicable to the lease.

	Landlord Provides	Tenant Provides	Both	NA	Refused
Provide Building/ Replace Equipment (fence, water, etc)					
Maintain Equipment					
Control Livestock (Pasture moves, vet)					
Provide Salt					
Provide Nutritional Supplements					
Haul Water					
Provide Utilities					
Provide Liability Insurance					
Provide Noxious Weed Control					
Provide Irrigation Water					
Pay Land Taxes					
Other (specify)					

Q: Q20cLP2costshare

Is there a cost share agreement for property maintenance or operation expenses on Parcel 2?

T: 7 15 1
1. Yes
2. No
9. Refused

If (ans = 1) skp Q20dLP2percent
If (ans >= 2) skp Q21LP2access

Q: Q20dLP2percent

What is the percentage cost share that YOU pay?

Q: Q21LP2Access

Did you allow or control for public recreation access or other nuisances for Parcel 2?

T: 7 15 1
1. Yes
2. No
9. Refused

Q: Q22cLP2Death

Does the lease agreement for Parcel 2 specify any type of death loss guarantee or adjustment?

1. Yes
2. No
9. Refused

If (ans = 1) skp Q22dLP2Percent
If (ans >= 2) skp Q23cLP2Gain

Q: Q22dLP2Percent

What is the percent of death loss guaranteed? [Interviewer: if they provide it, it will be a low number, on the order of 0 - 3%]

Q: Q23cLP2Gain

Does the lease agreement for Parcel 2 specify any type of gain guarantee in terms of pounds per day or hundredweight per season?

1. Yes
2. No
9. Refused

If (ans = 1) skp Q23dLP2specify
If (ans >= 2) skp Q24LP2Water

Q: Q23dLP2specify

Please specify the pounds per gain guaranteed with this lease.
[Interviewer: Probably in terms of lb/head/season or lb/head/day and will most likely be with stocker cattle leases.]

Q: Q24LP2Water

Which of the following water sources, if any, does Parcel 2 contain?

1. River, stream, creek
2. Lake or pond
3. Spring
4. Wind-powered well
5. Motor-driven well (electric, gas, diesel)
6. Solar-powered well
7. Other (specify)
9. Refused

Q: Q25LP2Right

Do you hold a water right for the Parcel 2 property under lease?

1. Yes
2. No
9. Refused

Q: Q26LP2Carry

How did you determine the carrying capacity or total number of animals allowed for Parcel 2?

1. Historic use records on this property
2. Negotiated with tenant
3. Climatic conditions and vegetation analysis
4. Other (specify)
8. Don't know
9. Refused

Q: Q27LP2Cond

Did you require the tenant to provide information on range conditions for Parcel 2 after the grazing season?

1. Yes
2. No
9. Refused

Q: Q29LP2Charge

How do you charge for the lease on Parcel 2?

1. Per acre
2. Per head per month
3. Per head per day
4. Per AUM (animal unit month)
5. Per pound of gain
6. Per hundredweight of gain
7. A lump sum payment
8. Other method of payment (e.g. trade of commodity, trade labor) (please describe)
9. Refused

Q: Q29LP2Rate

What rate did you charge for the lease on Parcel 2 in 2011 (according to the payment used)?

RATE	UNITS/DESCRIPTION

Q: Q30LP2Dollar

What was the total dollar amount received from the lease on Parcel 2 for 2011?

Q: Q31LP2Paid

Is your lease for Parcel 2 paid...

1. Before grazing
2. After grazing
3. Split payment/combination (explain)
4. Other (specify)
9. Refused

Q: Q32LP2Est

How did you establish the lease rate for Parcel 2?

1. Historic rate
2. Negotiation with tenant
3. Going rate in the area
4. Other (specify)
9. Refused

Q: Q3LeaseFrom

Do you lease rangeland in Idaho FROM someone else?

1. Yes
2. No
9. Refused

If(ans = 1) skp Q4AcreageFrom
If (ans >= 2) skp Q5Sublease

Q: Q4AcreageFrom

Please tell me the number and total acreage of parcels leased from someone else in 2011 from each of the following types of rangeland.
[Interviewers: Other agencies include BLM, Forest Service, etc.]
[Interviewer: You must click the private lease box and enter 0 if NO PRIVATE LEASES + any other app. box]

	Number	Acres
1. Private party/privately owned		
2. Idaho Department of Lands		
3. Other Agencies		

If (q4aPrivate > 0) skp Q4aCountyP1
If (q4aPrivate = 0) skp Q5Sublease

Q: Q4aCountyP1

Of the private leases you just mentioned, I would now like to focus on two leases for the remaining questions.
Please select two leases that you believe may be the most representative of the private forage rangeland leases you lease to another party. Do not include any leases you may hold from public agencies.

Now, in what Idaho County is the first lease held?

Q: Q4bTownP1

What is the nearest town to this lease? We will refer to this lease from now on as "Parcel 1".

Q: Q33TP1Year

In what year was the most recent lease agreement made or renewed on Parcel 1?
[9999 = refused]

Q: Q34TP1Length

What is the length of the lease, in years, on Parcel 1? [9999 = refused]

Q: Q35TP1Whom

From whom do you lease Parcel 1 lands?

1. A relative or related group
2. A non-related individual, group, corporation, or partnership
3. Other (specify)
9. Refused

Q: Q36TP1Written

Is the lease arrangement for Parcel 1 written or verbal?

T: 7 15 1
1. Written
2. Verbal
9. Refused

Q: Q37TP1Renew

What is the renewal arrangement for Parcel 1?

T: 7 15 1
1. For a specified number of years (specify #)
2. Automatic renewal each year unless either party terminates
8. Don't know
9. Refused

Q: Q38TP1Miles

What is the approximate distance in miles from Parcel 1 to your home or base property (where you moved the cattle from)?

Q: Q39TP1Lands

What percent of the lands included in Parcel 1 are in each of the following categories?

Native rangeland
Improved (seeded) rangeland
Crop aftermath
Irrigated pasture
Some other type of rangeland (specify)

Q: Q40aGrazeTP1

Did any livestock graze Parcel 1 in 2011?

1. Yes
2. No
9. Refused

If (ans = 1) skp Q40bGrazeTP1
If (ans >= 2) skp Q42aTP1System

Q: Q40bGrazeTP1

What types of livestock grazed this parcel in 2011?

1. Cattle/Cow-calf
2. Cows only
3. Feeder cattle (stockers)
4. Bulls
5. Sheep
6. Goats
7. Other (specify)
9. Refused

Q: Q41TP1Times

Based upon the type of livestock you identified in the previous question, for each group and class of animal, please list the number that you turned out on parcel 1, the date they started grazing, the number of animals you took off the parcel, and the date they stopped grazing.

	Started Grazing		Stopped Grazing	
	Number	Date	Number	Date
Cow-calf pairs				
Cows only				
Feeder cattle				
Bulls				
Horses				
Ewe-lamb				
Ewe only				
Rams				
Other livestock				

Q: Q42aTP1system

How would you characterize the grazing system used on Parcel 1? Would you say it is...

T: 7 15 1
1. Season-long
2. Deferred
3. Rest rotation
4. Short duration
5. Other (specify)
8. Don't know
9. Refused

Q: Q42bTP1System

Was the grazing system negotiated by the landowner for Parcel 1?

1. Yes
2. No
9. Refused (don't know)

Q: Q43TP1Services

I'm going to read a list of items and services that are often associated with grazing leases. For each item, please tell me who provides the item for Parcel 1, or if it's not applicable to the lease.

	Landlord Provides	Tenant Provides	Both	NA	Refused
Provide Building/ Replace Equipment (fence, water, etc)					
Maintain Equipment					
Control Livestock (Pasture moves, vet)					
Provide Salt					
Provide Nutritional Supplements					
Haul Water					
Provide Utilities					
Provide Liability Insurance					
Provide Noxious Weed Control					
Provide Irrigation Water					
Pay Land Taxes					
Other (specify)					

Q: Q44aTP1costshare

Is there a cost share agreement for property maintenance or operation expenses on Parcel 1?

1. Yes
2. No
9. Refused

If (ans = 1) skp Q44bTP1percent
If (ans >= 2) skp Q44cTP1Access

Q: Q44bTP1percent

What is the percentage cost share that YOU pay?

Q: Q44cTP1Access

Did you allow or control for public recreation access or other nuisances for Parcel 1?

1. Yes
2. No
9. Refused

Q: Q45aTP1Death

Does the lease agreement for Parcel 1 specify any type of death loss guarantee or adjustment?

1. Yes
2. No
9. Refused

If (ans = 1) skp Q45bTP1Percent
If (ans >= 2) skp Q46aTP1Gain

Q: Q45bTP1percent

What is the percent of death loss guaranteed? [Interviewer: if they provide it, it will be a low number, on the order of 0 - 3%]

Q: Q46aTP1gain

Does the lease agreement for Parcel 1 specify any type of gain guarantee in terms of pounds per day or hundredweight per season?

1. Yes
2. No
9. Refused

If (ans = 1) skp Q46bTP1specify
If (ans >= 2) skp Q47TP1Exp

Q: Q46bTP1specify

Please specify the pounds per gain guaranteed with this lease. [Interviewer: Probably in terms of lb/head/season or lb/head/day and will most likely be with stocker cattle leases.]

Q: Q47TP1exp

What is the expected or average pounds gained per season calf/yearling/lamb for Parcel 1?

Q: Q48TP1carry

How did you determine the carrying capacity or total number of animals allowed for Parcel 1?

1. Historic use records on this property
2. Negotiated with landlord
3. Climatic conditions and vegetation analysis
4. Other (specify)
8. Don't know
9. Refused

Q: Q49TP1Cond

Did you provide the landlord information on range conditions for Parcel 1
after the grazing season?

1. Yes
2. No
9. Refused

Q: Q50TP1Charge

How were you charged for the lease on Parcel 1?

1. Per acre
2. Per head per month
3. Per head per day
4. Per AUM (animal unit month)
5. Per pound of gain
6. Per hundredweight of gain
7. A lump sum payment
8. Other method of payment (e.g. trade of commodity, trade labor) (please describe)
9. Refused

Q: Q51TP1Rate

What rate were you charged for the lease on Parcel 1 in 2011 (according to the payment used)?

RATE	UNITS/DESCRIPTION

Q: Q52TP1Dollar

What was the total dollar amount paid for the lease on parcel 1 for 2011?

Q: Q53TP1Paid

Is your lease for Parcel 1 paid...

1. Before grazing
2. After grazing
3. Split payment/combination (explain)
4. Other (specify)
9. Refused

Q: Q54TP1Est

How did you establish the lease rate for Parcel 1?

1. Historic rate
2. Negotiation with landlord
3. Going rate in the area
4. Other (specify)
9. Refused

Q: Q4TP2
Did you lease a second privately held parcel in 2011? (or, of the other leases you leased in 2011, please select a second lease that is typical of your leased parcels).

1. Yes
2. No

If (Ans = 1) skp Q4cCountyP2
If (Ans = 2) skp Q5Sublease

Q: Q4cCountyP2

In what Idaho County is the second lease held?

Q: Q4dTownP2

What is the nearest town to this lease? We will refer to this lease from now on as "Parcel 2".

Q: Q33TP2Year

In what year was the most recent lease agreement made or renewed on Parcel 2?
[9999 = refused]

Q: Q34TP2Length

What is the length of the lease, in years, on Parcel 2? [9999 = refused]

Q: Q35TP2Whom

From whom do you lease Parcel 2 lands?

1. A relative or related group
2. A non-related individual, group, corporation, or partnership
3. Other (specify)
9. Refused

Q: Q36TP2Written

Is the lease arrangement for Parcel 2 written or verbal?

1. Written
2. Verbal
9. Refused

Q: Q37TP2Renew

What is the renewal arrangement for Parcel 2?

1. For a specified number of years (specify #)
2. Automatic renewal each year unless either party terminates
8. Don't know
9. Refused

Q: Q38TP2Miles

What is the approximate distance in miles from Parcel 2 to your home or base property (where you moved the cattle from)?

Q: Q39TP2Lands

What percent of the lands included in Parcel 2 are in each of the following categories?

Native rangeland
Improved (seeded) rangeland
Crop aftermath
Irrigated pasture
Some other type of rangeland (specify)

Q: Q40cGrazeTP2

Did any livestock graze Parcel 2 in 2011?

1. Yes
2. No
9. Refused

If (ans = 1) skp Q40dGrazeTP2
If (ans >= 2) skp Q41TP2Times

Q: Q40dGrazeTP2

What types of livestock grazed this parcel in 2011?

1. Cattle/Cow-calf
2. Cows only
3. Feeder cattle (stockers)
4. Bulls
5. Sheep
6. Goats
7. Other (specify)
9. Refused

Q: Q41TP2Times

Based upon the type of livestock you identified in the previous question, for each group and class of animal, please list the number that you turned out on parcel 2, the date they started grazing, the number of
animals you took off the parcel, and the date they stopped grazing.

	Started Grazing		Stopped Grazing	
	Number	Date	Number	Date
Cow-calf pairs				
Cows only				
Feeder cattle				
Bulls				
Horses				
Ewe-lamb				
Ewe only				
Rams				
Other livestock				

Q: Q42cTP2System

How would you characterize the grazing system used on Parcel 2? Would you say it is...

1. Season-long
2. Deferred
3. Rest rotation
4. Short duration
5. Other (specify)
8. Don't know
9. Refused (don't read)

Q: Q42dTP2System

Was the grazing system negotiated by the landowner for Parcel 2?

1. Yes
2. No
9. Refused (don't read)

Q: Q43TP2Services

We're now going to do the same thing with Parcel 2. For each item, please tell me who provides
the item for Parcel 2, or if it's not applicable to the lease.

	Landlord Provides	Tenant Provides	Both	NA	Refused
Provide Building/ Replace Equipment (fence, water, etc)					
Maintain Equipment					
Control Livestock (Pasture moves, vet)					
Provide Salt					
Provide Nutritional Supplements					
Haul Water					
Provide Utilities					
Provide Liability Insurance					
Provide Noxious Weed Control					
Provide Irrigation Water					
Pay Land Taxes					
Other (specify)					

Q: Q44cTP2costshare

Is there a cost share agreement for property maintenance or operation expenses on Parcel 2?

1. Yes
2. No
9. Refused

If (ans = 1) skp Q44dTP2percent
If (ans >= 2) skp Q44cTP2access

Q: Q44dTP2percent

What is the percentage cost share that YOU pay?

Q: Q44cTP2Access

Did you allow or control for public recreation access or other nuisances for Parcel 2?

T: 7 15 1
1. Yes
2. No
9. Refused

Q: Q45cTP2death

Does the lease agreement for Parcel 2 specify any type of death loss guarentee or adjustment?

1. Yes
2. No
9. Refused

If (ans = 1) skp Q45dTP2Percent
If (ans >= 2) skp Q46cTP2gain

Q: Q45dTP2percent

What is the percent of death loss guaranteed? [Interviewer: if they provide it, it will be a low number, on the order of 0 - 3%]

Q: Q46cTP2gain

Does the lease agreement for Parcel 2 specify any type of gain guarantee in terms of pounds per day or hundredweight per season?

1. Yes
2. No
9. Refused

If (ans = 1) skp Q46dTP2specify
If (ans >= 2) skp Q47TP2exp

Q: Q46dTP2specify

Please specify the pounds per gain guaranteed with this lease. [Interviewer: Probably in terms of lb/head/season or lb/head/day and will most likely be with stocker cattle leases.]

Q: Q47TP2Exp

What is the expected or average pounds gained per season calf/yearling/lamb for Parcel 2?

Q: Q48TP2carry

How did you determine the carrying capacity or total number of animals allowed for Parcel 2?

1. Historic use records on this property
2. Negotiated with landlord
3. Climatic conditions and vegetation analysis
4. Other (specify)
8. Don't know
9. Refused

Q: Q49TP2Cond

Did you provide the landlord information on range conditions for Parcel 2
after the grazing season?

1. Yes
2. No
9. Refused

Q: Q50TP2Charge

How were you charged for the lease on Parcel 2?

1. Per acre
2. Per head per month
3. Per head per day
4. Per AUM (animal unit month)
5. Per pound of gain
6. Per hundredweight of gain
7. A lump sum payment
8. Other method of payment (e.g. trade of commodity, trade labor) (please describe)
9. Refused

Q: Q51TP2Rate

What rate were you charged for the lease on Parcel 2 in 2011 (according to the payment used)?

RATE UNITS/DESCRIPTION

Q: Q52TP2Dollar

What was the total dollar amount paid for the lease on parcel 2 for 2011?

Q: Q53TP2Paid

Is your lease for Parcel 2 paid...

1. Before grazing
2. After grazing
3. Split payment/combination (explain)
4. Other (specify)
9. Refused

Q: Q54TP2Est

How did you establish the lease rate for Parcel 2?

1. Historic rate
2. Negotiation with landlord
3. Going rate in the area
4. Other (specify)
9. Refused

Q: Q5Sublease

Do you take in and manage livestock to run with your livestock on your private and leased grazing lands? Or, do you sublease the leased property to someone else?

1. Yes
2. No, and respondent didn't lease to or from anyone
3. No, and respondent already completed one section
9. Refused

If (ans = 1) skp Q6Subacreage
If (ans = 2) skp ThanksIE
If (ans = 3) skp Thanks
If (ans = 9) skp Thanks

Q: Q6SubAcreage

What was the number and total acreage of parcels subleased from each of the following types of rangeland
in 2011? [Interviewers: Other agencies include BLM, Forest Service, etc.]

	Number	Acres
1. Private party/privately owned		
2. Idaho Department of Lands		
3. Other Agencieses		

Q: Q55Sub1

Did you hold a private lease and take in someone else's livestock and run them with your livestock
during 2011?

1. Yes
2. No
9. Refused

Q: Q56Sub2

Did you sublease a leased property to someone else in 2011?

1. Yes
2. No
9. Refused

Q: Q57Long

How long did you manage the livestock for someone else in 2011?

1. Year-long
2. Seasonally
9. Refused

If (ans = 2) skp Q57bdates

Q: Q57bdates

Please tell me the dates when you received the livestock and when you returned them to the owner.

Q: Q59Services

From the following list, please tell me what tasks you performed in terms of managing the livestock
for someone else.

	Manager (R) Provided	Manager (R) Did NOT Provide	Refused
Provided/Allowed access to building, corrals, etc.			
Replaced equipment (fence, etc.)			
Maintained equipment			
Provided salt			
Provided nutritional supplements			
Hauled water			
Provided utilities			
Provided liability insurance			
Provided noxious weed control			
Provided irrigation water			
Paid land taxes			
Branded/marked livestock			
Provided winter feed for livestock (specify amount)			
Transported/shipped livestock			
Marketed livestock			
Other (specify)			

Q: Thanks

Thanks for your time, but we are trying to reach individuals who have leased Idaho rangeland to or from someone else in the past year.

Q: CELLDRIVING

I need to call you back at a later time when you aren't driving. When would be a good time?

Q: Thanks

Thanks so much for your time. Do you have anything else you like to add?

APPENDIX C – GRAZING MARKET RENT SURVEY

Comment [JAG3]:
Created as separate PDF that will be inserted into final PDF file doc

APPENDIX D – LIVESTOCK INVENTORIES

Beef cow inventory by county and NASS District, 2001 - 2011.

Beef Cows	Year										
District/County	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
East	205,000	206,500	203,000	205,000	203,000	197,000	193,500	160,500	157,200	153,000	155,000
Bannock	10,900	11,000	11,400	11,000	11,100	10,400	11,200	10,600	10,300	10,100	10,200
Bear Lake	14,200	14,500	13,200	13,500	13,400	13,700	14,000	14,300	14,000	13,600	13,800
Bingham	23,500	23,500	26,700	28,000	27,000	27,500	27,500	27,000	26,000	25,000	25,500
Bonneville	14,200	15,000	16,100	17,000	15,400	11,300	11,400	18,700	18,300	17,800	18,100
Butte	9,700	9,300	7,500	6,400	6,800	7,000	6,200				
Caribou	12,400	13,000	14,700	15,500	15,200	14,800	14,100	12,400	12,100	11,800	12,000
Clark	5,300	5,300	5,600	5,900	5,700	5,700	5,900	5,800	5,700	5,500	5,600
Custer	22,500	20,500	15,800	15,500	15,700	15,700	14,600				
Franklin	7,300	7,700	7,500	7,600	7,900	7,400	7,800	7,700	7,600	7,400	7,500
Fremont	8,600	8,000	6,600	6,100	6,900	7,100	7,300	6,400	6,300	6,100	6,200
Jefferson	16,500	16,500	17,500	19,000	18,700	18,300	16,900	17,200	16,900	16,500	16,700
Lemhi	29,000	28,000	28,000	28,000	27,500	26,500	25,500	25,000	25,000	24,500	24,500
Madison	6,800	7,100	6,900	6,800	6,600	6,100	6,300				
Oneida	11,500	14,500	13,800	13,500	13,300	13,600	12,400	11,400	11,100	10,900	11,000
Power	7,500	7,300	6,300	5,700	6,500	6,700	7,400				
Teton	5,100	5,300	5,400	5,500	5,300	5,200	5,000	4,000	3,900	3,800	3,900
South Central	100,000	105,500	109,500	114,000	107,500	108,000	105,500	96,600	95,000	92,400	94,000
Blaine	9,500	9,500	10,100	10,500	9,700	10,000	11,400	7,800	7,600	7,400	7,500
Camas	2,600	2,300	1,600	1,500	1,200	900	1,100	3,800	3,700	3,600	3,700
Cassia	26,000	27,000	29,500	30,500	31,000	32,400	30,000	26,000	26,000	25,000	25,500
Gooding	16,500	17,000	15,000	15,500	16,500	16,200	13,800	10,700	10,400	10,200	10,300
Jerome	9,800	12,500	12,700	13,500	9,200	10,700	9,400	9,900	9,700	9,400	9,600
Lincoln	6,100	6,300	7,400	8,000	8,400	7,600	8,100	8,400	8,200	8,000	8,100
Minidoka	5,000	4,900	4,200	4,500	4,500	4,200	5,200	5,000	4,900	4,800	4,800
Twin Falls	24,500	26,000	29,000	30,000	27,000	26,000	26,500	25,000	24,500	24,000	24,500
Southwest	136,500	133,500	133,500	127,500	123,000	124,000	131,000	108,500	106,700	104,600	105,800
Ada	10,700	8,700	9,500	9,000	7,600	8,500	10,000	9,700	9,500	9,300	9,400
Adams	7,900	7,000	7,500	7,800	7,200	7,300	6,900	6,000	5,800	5,700	5,800
Boise	2,500	2,400	2,000	1,900	1,900	1,900	1,700				
Canyon	19,000	19,000	17,500	15,500	14,800	14,600	13,500	13,400	13,100	12,800	13,000
Elmore	13,700	14,000	14,500	14,500	13,500	14,100	21,000	22,000	22,000	21,500	21,500
Gem	13,300	12,500	12,500	12,000	11,400	11,500	11,400	10,600	10,300	10,100	10,300
Owyhee	41,500	40,500	40,500	38,500	36,500	36,500	38,000	35,000	34,500	34,000	34,500
Payette	7,800	9,400	10,200	9,700	10,300	10,000	10,400	8,800	8,600	8,400	8,500
Valley	2,600	2,500	2,800	2,100	2,300	2,100	2,100	3,000	2,900	2,800	2,800
Washington	17,500	17,500	16,500	16,500	17,500	17,500	16,000				
North	44,500	47,500	44,000	41,500	41,500	43,000	43,000	20,900	20,300	19,900	20,200
Benewah	1,700	1,800	1,500	1,400	1,100	1,100	1,100	1,200	1,200	1,200	1,200
Bonner	4,100	4,000	3,400	2,900	2,700	2,800	2,900	2,500	2,400	2,400	2,400
Boundary	2,500	3,000	2,900	2,700	3,100	2,900	3,000				
Clearwater	2,200	2,000	2,000	2,000	2,000	2,300	2,200				
Idaho	18,800	20,500	17,700	16,500	17,000	16,600	16,500	14,400	14,100	13,800	14,000
Kootenai	3,100	3,100	3,000	2,800	3,100	3,300	3,200				
Latah	4,500	5,000	5,000	5,000	4,700	5,100	5,400				
Lewis	2,100	2,100	2,100	2,100	1,600	1,500	1,400	2,700	2,600	2,500	2,600
Nez Perce	5,300	5,800	6,300	6,000	6,100	7,300	7,200				
Shoshone	200	200	100	100	100	100	100	100			
No District Designation								73,500	71,800	70,100	71,000
State Total	486,000	493,000	490,000	488,000	475,000	472,000	473,000	460,000	451,000	440,000	446,000

Sheep and lamb inventory by county and NASS District, 2001 - 2011.

Sheep and Lambs All	Year										
District/County	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
East	96,000	92,000	81,000	80,000	83,000	79,000	81,000	39,100	33,500	23,100	48,100
Bannock			2,000	2,000	1,500	1,300	1,200	1,200	1,000	1,100	1,200
Bear Lake	4,000	4,000	4,000	4,000	5,000	4,900	4,800				
Bingham	13,500	13,500	12,500	12,500	16,700	16,600	15,500	14,300	12,600		19,900
Bonneville	5,500	4,000	3,000	4,000	3,900	3,900	5,000				
Butte	10,500	9,000	7,500	7,500	7,000	7,100					1,900
Caribou	8,000	10,000	4,500	3,500	3,500	1,700	1,500				
Clark	6,500	6,500	5,000	7,500	10,100	7,900					
Custer	1,500	1,500			1,000						
Franklin	1,500	1,000	2,000			1,800	1,600				1,000
Fremont	22,500	21,000	17,000	16,500	15,500	14,600					
Jefferson	15,500	15,500	17,000	15,500	15,500	15,500	27,500	22,500	19,900	21,000	23,000
Lemhi	2,500	2,500	3,000	3,000	1,000	1,100		1,100		1,000	1,100
Oneida					1,000	1,000					
Power	2,000										
D90 Combined Counties	2,500	3,500	3,500	4,000	1,300	1,600	23,900				
South Central	118,000	109,000	115,000	115,000	120,000	117,000	115,500	59,600	25,700	26,600	44,500
Blaine	28,000	32,000	32,000	30,000	28,000	21,300					14,600
Cassia	14,000	13,000	11,000	11,000	11,000	11,900	12,900	13,600	12,000	12,400	14,000
Gooding	22,000	21,000	19,000	19,000	19,900	12,800					
Jerome	5,000						1,400	1,100	1,000	1,000	1,100
Minidoka	33,000	26,500	37,000	37,500	45,400	56,000	51,000	30,500			
Twin Falls	15,000	15,000	14,500	15,500	14,500	13,800	13,600	14,400	12,700	13,200	14,800
D80 Combined Counties	1,000	1,500	1,500	2,000	1,200	1,200	36,600				
Southwest	52,000	50,000	55,000	55,000	57,000	54,000	54,000	30,800	7,500	7,900	10,400
Ada	2,000	1,500	2,000	2,100	1,700	1,800	2,000	1,900	1,600	1,700	2,500
Adams							1,000				
Canyon	19,000	17,000	21,000	21,000	21,000	21,000					
Gem	2,500	2,500	2,900	3,200	3,300	5,500	5,500	6,300			6,500
Owyhee	8,500	8,000	10,000	10,000	10,200	4,700	4,700	5,400	4,700	5,000	
Payette	1,100	1,000			1,000	1,000	1,000	1,300	1,200	1,200	1,400
Valley						1,900	2,000				
Washington	17,200	18,100	16,000	15,500	17,600	16,600	16,000	15,900			
D70 Combined Counties	1,700	1,900	3,100	3,200	2,200	1,500	21,800				
North	9,000	9,000	9,000	10,000	10,000	10,000	9,500	3,400	3,000	3,100	3,500
Benewah						1,100	1,100				
Bonner	1,000	1,000		1,100		1,000	1,200	1,100	1,000	1,000	1,100
Idaho	3,200	3,300	3,500	3,700	3,700	2,500	2,000	2,300	2,000	2,100	2,400
Latah	2,000	2,300	2,400	2,400	2,900	3,100	3,100				
D10 Combined Counties	2,800	2,400	3,100	2,800	3,400	2,300	2,100				
No District Designation								102,100	140,300	159,300	128,500
State Total	275,000	260,000	260,000	260,000	270,000	260,000	260,000	235,000	210,000	220,000	235,000

APPENDIX E – LETTER TO COUNTY ASSESSORS

ADMINISTRATION
DIRECTOR'S OFFICE
300 N 6th Street Suite 103
PO Box 83720
Boise ID 83720-0050
Phone (208) 334-0200
Fax (208) 334-5342

IDAHO DEPARTMENT OF LANDS

TOM SCHULTZ, DIRECTOR
EQUAL OPPORTUNITY EMPLOYER

STATE BOARD OF LAND COMMISSIONERS
C. L. "Butch" Otter, Governor
Ben Ysursa, Secretary of State
Lawrence G. Wasden, Attorney General
Donna M. Jones, State Controller
Tom Luna, Sup't of Public Instruction

March 1, 2012

TO: Idaho County Assessors

SUBJECT: Request for County Grazing Lands Assessment Records

Dear Idaho County Assessors:

You may have received, or will be receiving soon, a request for information from a member of Resource Dimensions research team working under contract for the Idaho Department of Lands (IDL) to complete a market rent study for rangelands and grazing. The intent of this project is to assist IDL in management planning for the 1.4 million acres of state endowment rangeland currently held in trust.

The information that you have been requested to provide will be used in combination with information gained through a private land owner survey, also recently completed by Resource Dimensions. Together this information will assist IDL in understanding market value differences for rangeland leasing across the various regions of the State.

The Department of Lands and our contractor Resource Dimensions appreciates your cooperation and time that you spend responding to the request.We understand that you may not be able to answer all of the questions asked in the original request. However, we hope that you will provide information that you do have available. All information provided is strictly confidential and will be used soley by IDL.

If you have any questions regarding the request, please contact myself, at ncrescenti@idl.idaho.gov (208)334-0278 or Julie Ann Gustanski, priniciple investigator Resource Dimensions at jgustanski@ecologicalecon.com.

Best regards

Neil Crescenti
Grazing Lands Program Manager

APPENDIX F – MARKET SALES DATA

Note: The Excel database containing market sale data is contained in supplementary electronic files provided. The following contains key information contained in the file.

IDL Regior	County	ZIP	T. Deeded Acres	Impr. Cont.	Land Type	Range/Pasture Acres	($) Per Acre
Eastern	Bannock	83214	188.92	12	Pasture	44.92	$406.00
Eastern	Bannock	83214	200	0	Pasture	130	$800.00
Eastern	Bannock	83246	1251	204200	Pasture	1245	$500.00
Eastern	Bannock	83234	1694.09	103973	Pasture	1255.09	$300.00
Eastern	Bear Lake	83254	40	0	Pasture	40	$500.00
Eastern	Bear Lake	83254	160	0	Pasture	160	$250.00
Eastern	Bear Lake	83254	160	0	Pasture	160	$500.00
Eastern	Bear Lake	83254	361.92	-1	Pasture	361.92	$1,105.22
Eastern	Bingham	83210	147	0	Pasture (G)	67	$1,014.92
Eastern	Bingham	83277	160	0	Ntv Grz (P)	160	$118.75
Eastern	Bingham	83221	590	-630	Ntv Grz (G)	173	$460.00
Eastern	Bingham	83210	545	-375	Ntv Grz (P)	185	$200.00
Eastern	Bingham	83401	840	0	Ntv Grz (G)	840	$425.00
Eastern	Bingham	83221	1196	-524	Ntv Grz (G)	1196	$569.00
Eastern	Bingham	83247	1798	546	Ntv Grz (G)	1798	$973.00
Eastern	Bingham	83221	5389	33085	Ntv Grz (P)	840	$210.00
Eastern	Blaine	83320	149.03	159201	Ntv Grz (F)	58.53	$375.00
Eastern	Blaine	83348	320	0	Ntv Grz (F)	320	$390.63
Eastern	Bonneville	83343	160	0	Ntv Grz (G)	50	$1,850.00
Eastern	Bonneville	83402	640	-60	Ntv Grz (P)	140	$179.00
Eastern	Bonneville	83845	160	0	Ntv Grz (G)	160	$400.00
Eastern	Bonneville	83449	700	400	Ntv Grz (G)	460	$610.00
Eastern	Bonneville	83449	630	-25	Ntv Grz (G)	630	$1,180.00
Eastern	Butte	83255	1276	85800	Ranch (G)	1106	$700.00
Eastern	Caribou	83217	360	16	Pasture	48	$333.00
Eastern	Caribou	83217	160	74000	Pasture	50	$500.00
Eastern	Caribou	83241	331.82	-26	Pasture	59.82	$298.00
Eastern	Caribou	83241	472	-840	Pasture	120	$212.00
Eastern	Caribou	83276	707	-25	Pasture	120	$430.00
Eastern	Caribou	83120	159	42	Pasture	159	$3,962.00
Eastern	Caribou	83241	731	51700	Pasture	240	$300.00
Eastern	Caribou	83241	384.5	125	Pasture	247.5	$450.00
Eastern	Caribou	83241	921.24	1	Pasture	655.24	$608.63
Eastern	Clark	83423	483.05	0	Pasture	483.05	$200.00
Eastern	Clark	83423	486.2	-3	Pasture	486.2	$359.94
Eastern	Clark	83446	640	-2	Pasture	640	$410.94
Eastern	Clark	83423	720	130,100	Ntv Grz	320	$200.00
Eastern	Clark	83423	159.25	252,923	Impr/Ntv	159.25	$484.00
Eastern	Clark	83423	6306.9	200525	Pasture	5225.9	$250.00
Eastern	Clark	83423	787.9	63001	Ntv Grz (P)	787.9	$250.03

IDL Region	County	ZIP	T. Deeded Acres	Impr. Cont.	Land Type	Range/Pasture Acres	($) Per Acre
Eastern	Clark	83423	2755	0	Ntv Grz (P)	2189	$225.00
Eastern	Clark	83423	180	220,000	Ntv Grz	180	$1,000.00
Eastern	Clark	83423	15380.7	138361	Ntv Grz (P)	13477	$207.00
Eastern	Custer	83467	293.5	300	Pasture	113	$450.00
Eastern	Custer	83253	371.2	1	Pasture	371.2	$1,346.98
Eastern	Custer	83253	5571.34	307100	Pasture	3211	$500.00
Eastern	Fremont	83451	55	0	Pasture	40	$2,250.00
Eastern	Fremont	83445	310.84	0	Pasture	90.84	$1,058.14
Eastern	Jefferson	83425	1093.92	0	Pasture	1093.92	$350.00
Eastern	Jefferson	83450	1999.2	47338	Pasture	1203.7	$260.00
Eastern	Lemhi	83468	272.05	-12	Pasture	158.05	$753.00
Eastern	Madison	83436	1564.42	216649	Pasture	64	$1,000.00
Eastern	Madison	83440	857.53	604600	Pasture	130	$1,000.00
Eastern	Oneida		360.01	0	Ntv Grz	360.01	$500.00
Eastern	Oneida		200.41	0	Ntv Grz	200.41	$500.00
Eastern	Power	83211	221	168700	Pasture	100	$150.00
Eastern	Power	83271	1323.06	11288	Pasture	537.06	$200.00
Eastern	Teton	83452	757.97	0	Pasture	60	$1,610.51
Northern	Clearwater	83544	147	0	Pasture	100	$850.34
Northern	Idaho	83536	493.16	-144	Pasture	115.6	$540.00
Northern	Idaho	83251	685.3	-2	Pasture	685.3	$525.32
Northern	Idaho	83530	1800	-6	Pasture	1800	$416.67
Northern	Idaho	83530	17549	200010	Pasture	17549	$544.19
Northern	Lewis	83523	160	-38	Pasture	64.5	$400.00
Northern	Lewis	83526	95	0	Pasture	95	$842.10
Payette Lakes	Adams	83632	907	302	Range	907	$264.00
Payette Lakes	Adams	83672	854	440	Pasture (G)	854	$1,070.00
South Central	Camas	83337	2486	3	Pasture	2486	$559.13
South Central	Camas	83327	6474.77	604998	Pasture	4208.17	$677.44
South Central	Cassia	83342	936.7	161580	Pasture	179.8	$400.00
South Central	Cassia	83342	506.94	52530	Pasture	296.94	$500.00
South Central	Cassia	83346	914.3	-3	Pasture	841.2	$298.09
South Central	Cassia	83346	979.6	2	Pasture	906.5	$295.42
South Central	Cassia	83342	97	0	Pasture	97	$649.00
South Central	Cassia	83342	159.25	252923	Pasture	159.25	$484.00
South Central	Cassia	83342	180	220000	Pasture	180	$1,000.00
South Central	Cassia	83342	720	130100	Pasture	320	$200.00
South Central	Gooding	83330	391.15	61169	Pasture	113.41	$470.00
South Central	Gooding	83330	440	114001	Pasture	227.31	$425.06
South Central	Jerome	83325	297.7	0	Pasture	127.9	$390.93
South Central	Jerome	83335	208.18	-1	Pasture	133.18	$300.35

IDL Region	County	ZIP	T. Deeded Acres	Impr. Cont.	Land Type	Range/Pasture Acres	($) Per Acre
South Central	Lincoln	83324	40	0	Pasture	40	$350.00
South Central	Lincoln	83324	240	0	Pasture	63.86	$301.41
South Central	Lincoln	83349	1028.72	39230	Pasture	315.39	$450.00
South Central	Minidoka	83350	145.549	0	Pasture	145.549	$547.93
South Central	Minidoka	83350	320.2	151170	Pasture	189.69	$550.00
South Central	Minidoka	83350	262.1	-1	Pasture	262.1	$325.07
South Central	Twin Falls	83316	3466.9	600127	Pasture	73.06	$350.00
South Central	Twin Falls	83301	4000	0	Pasture	4000	$400.00
Southwest	Elmore	83633	680	-200	Pasture Dry	280	$115.00
Southwest	Elmore	83327	1096	50000	Ntv Grz (G)	917	$593.00
Southwest	Gem	83657	2219.44	64490	Pasture	2049.44	$340.00
Southwest	Owyhee	83628	40	0	Pasture Dry	40	$1,250.00
Southwest	Owyhee	83628	200	20	Pasture Dry	116	$1,000.00
Southwest	Owyhee	83302	160	-1	Pasture	160	$609.38
Southwest	Owyhee	83650	192.8	0	Pasture	192.8	$500.00
Southwest	Owyhee	83650	611.15	0	Grz/Rec (F)	611.15	$1,489.00
Southwest	Owyhee	83604	360	0	Grz/Rec (F)	360	$1,430.56
Southwest	Owyhee	83624	200	0	Grz/Rec (F)	200	$700.00
Southwest	Payette	83655	277.89	5475	Range	183	$275.00

APPENDIX G – UNIFORM STANDARDS OF PROFESSIONAL APPRAISAL PRACTICE CERTIFICATION

Uniform Standards of Professional Appraisal Practice
Consulting Appraiser Certification

I certify that, to the best of my knowledge and belief:

- the statements of fact relative to the Idaho grazing land market analysis contained in this report are true and correct.
- the reported analyses, opinions, and conclusions are impartial and unbiased professional analyses, opinions, conclusions, and recommendations.
- I have no present or prospective interest in the State of Idaho property (none of which is identified by legal described) that is the subject of this report, and have no personal interest with respect to the parties involved.
- I have performed no services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment.
- I have no bias with respect to any property that is the subject of this report or to the parties involved with this assignment.
- my engagement in this assignment was not contingent upon developing or reporting predetermined results.
- my compensation for completing this assignment is not continent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the opinions of ranges of value, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal consulting assignment.
- my analyses, opinions, and conclusions were developed and the relative sections of this report have been prepared in conformity with the *Uniform Standards of Professional Appraisal Practice.*
- I have not made a personal inspection of the property that is the subject of this report for which there is no specified legal description.
- no one provided significant real property appraisal or appraisal consulting assistance to the person signing this certification.

_____ **Date:** May 12, 2012

Joe S. Kennedy, Idaho Certified General Appraiser #149

APPENDIX H – MAP DEVELOPMENT METHODOLOGY

GIS was used to develop the map series for this study. The following provides information about the methodology used to develop those maps found in Sections 3 and 8 of the study.

Simplification of Ecoregion IV layer into broader units:

Using definitions of each habitat provided by EPA, each of the original 71 habitats included in the Ecoregion Level IV layer for Idaho was reclassified into the following nine categories: salt-desert shrubland, sagebrush grasslands, rock, riparian, Pacific bunchgrass, juniper woodlands, grassland, coniferous forest and meadow, and coniferous forest. A crosswalk for this analysis is provided in the table below.

US_L4NAME	US_L3NAME	Range_Class
Saltbush-Dominated Valleys	Northern Basin and Range	Salt-Desert Shrublands
Shadscale-Dominated Saline Basins	Central Basin and Range	Salt-Desert Shrublands
Unwooded Alkaline Foothills	Snake River Plain	Salt-Desert Shrublands
Sagebrush Steppe Valleys	Northern Basin and Range	Sagebrush Grasslands
Owyhee Uplands and Canyons	Northern Basin and Range	Sagebrush Grasslands
High Elevation Forests and Shrublands	Northern Basin and Range	Sagebrush Grasslands
Semiarid Hills and Low Mountains	Northern Basin and Range	Sagebrush Grasslands
Dissected High Lava Plateau	Northern Basin and Range	Sagebrush Grasslands
Semiarid Foothills	Wasatch and Uinta Mountains	Sagebrush Grasslands
Foothill Shrublands and Low Mountains	Wyoming Basin	Sagebrush Grasslands
Dry Gneissic-Schistose-Volcanic Hills	Middle Rockies	Sagebrush Grasslands
Dry Intermontane Sagebrush Valleys	Middle Rockies	Sagebrush Grasslands
High Glacial Drift-Filled Valleys	Idaho Batholith	Sagebrush Grasslands
Foothill Shrublands-Grasslands	Idaho Batholith	Sagebrush Grasslands
Grassy Potlatch Ridges	Northern Rockies	Sagebrush Grasslands
Sagebrush Basins and Slopes	Central Basin and Range	Sagebrush Grasslands
Magic Valley	Snake River Plain	Sagebrush Grasslands
Mountain Home Uplands	Snake River Plain	Sagebrush Grasslands
Eastern Snake River Basalt Plains	Snake River Plain	Sagebrush Grasslands
Semiarid Foothills	Snake River Plain	Sagebrush Grasslands
Dissected Plateaus and Teton Basin	Snake River Plain	Sagebrush Grasslands
Continental Zone Foothills	Blue Mountains	Sagebrush Grasslands
Melange	Blue Mountains	Sagebrush Grasslands
Alpine Zone	Middle Rockies	Rock
Lava Fields	Snake River Plain	Rock
Lower Snake and Clearwater Canyons	Columbia Plateau	Rock

US_L4NAME	US_L3NAME	Range_Class
Sub-Irrigated High Valleys	Wyoming Basin	Riparian Areas
High Elevation Valleys	Middle Rockies	Riparian Areas
Inland Maritime Foothills and Valleys	Northern Rockies	Riparian Areas
Nez Perce Prairie	Columbia Plateau	Pacific Bunchgrass
Semiarid Uplands	Northern Basin and Range	Juniper Woodlands
High Desert Wetlands	Northern Basin and Range	Grassland
Weippe Prairie	Northern Rockies	Grassland
Kootenai Valley	Northern Rockies	Grassland
Malad and Cache Valleys	Central Basin and Range	Grassland
Upper Snake River Plain	Snake River Plain	Grassland
Camas Prairie	Snake River Plain	Grassland
Treasure Valley	Snake River Plain	Grassland
Palouse Hills	Columbia Plateau	Grassland
Dissected Loess Uplands	Columbia Plateau	Grassland
Partly Forested Mountains	Northern Basin and Range	Coniferous Forest and Meadow
Wasatch Montane Zone	Wasatch and Uinta Mountains	Coniferous Forest and Meadow
Partly Forested Mountains	Middle Rockies	Coniferous Forest and Meadow
Yellowstone Plateau	Middle Rockies	Coniferous Forest and Meadow
Barren Mountains	Middle Rockies	Coniferous Forest and Meadow
Hot Dry Canyons	Idaho Batholith	Coniferous Forest and Meadow
Dry Partly Wooded Mountains	Idaho Batholith	Coniferous Forest and Meadow
Spokane Valley Outwash Plains	Northern Rockies	Coniferous Forest and Meadow
Lower Clearwater Canyons	Northern Rockies	Coniferous Forest and Meadow
Woodland and Shrub-Covered Low Mountains	Central Basin and Range	Coniferous Forest and Meadow
Subalpine-Alpine Zone	Blue Mountains	Coniferous Forest and Meadow
Wallowas/Seven Devils Mountains	Blue Mountains	Coniferous Forest and Meadow

US_L4NAME	US_L3NAME	Range_Class
Gneissic-Schistose Forested Mountains	Middle Rockies	Coniferous Forest
Western Beaverhead Mountains	Middle Rockies	Coniferous Forest
Southern Forested Mountains	Idaho Batholith	Coniferous Forest
South Clearwater Forested Mountains	Idaho Batholith	Coniferous Forest
High Idaho Batholith	Idaho Batholith	Coniferous Forest
Glaciated Bitterroot Mountains and Canyons	Idaho Batholith	Coniferous Forest
Lochsa-Selway-Clearwater Canyons	Idaho Batholith	Coniferous Forest
Lochsa Uplands	Idaho Batholith	Coniferous Forest
Selkirk Mountains	Northern Rockies	Coniferous Forest
Western Selkirk Maritime Forest	Northern Rockies	Coniferous Forest
Northern Idaho Hills and Low Relief Mountains	Northern Rockies	Coniferous Forest
Purcell-Cabinet-North Bitterroot Mountains	Northern Rockies	Coniferous Forest
St. Joe Schist-Gneiss Zone	Northern Rockies	Coniferous Forest
Coeur d Alene Metasedimentary Zone	Northern Rockies	Coniferous Forest
Clearwater Mountains and Breaks	Northern Rockies	Coniferous Forest
High Northern Rockies	Northern Rockies	Coniferous Forest
Mesic Forest Zone	Blue Mountains	Coniferous Forest
Canyons and Dissected Uplands	Blue Mountains	Coniferous Forest
Canyons and Dissected Highlands	Blue Mountains	Coniferous Forest

Average per acre values

Average per acre land value by county was classified into five tiers: $70+, $50 to $69, $49 to 35, $34 to $25, and less than $25. Average per acre assessed value was available on a limited basis for pasture or rangeland properties sold in 2010-11. Properties were identified by zip code, and grouped by the range of the per acre sale value: >$1500, $500-$1500 and <$500.

APPENDIX I – WIND RESOURCE EXCLUSIONS

Criteria for Defining Available Windy Land (numbered in the order they are applied):	
Environmental Criteria	*Data/Comments:*
2) 100% exclusion of National Park Service and Fish and Wildlife Service managed lands	USGS Federal Lands shapefile, Dec 2005
3) 100% exclusion of federal lands designated as park, wilderness, wilderness study area, national monument, national battlefield, recreation area, national conservation area, wildlife refuge, wildlife area, wild and scenic river or inventoried roadless area.	USGS Federal Lands shapefile, Dec 2005; Inventoried Roadless Areas, 2004; BLM Areas of Critical Environmental Concern (2008)
4) 100% exclusion of state and private lands equivalent to criteria 2 and 3, where GIS data is available.	State/GAP land stewardship data management status 1, from Conservation Biology Institute Protected Lands database, 2004
7) 50% exclusion of remaining USDA Forest Service (FS) lands (incl. National Grasslands) except ridgecrests	USGS Federal Lands shapefile, Dec 2005
8) 50% exclusion of remaining Dept. of Defense lands except ridgecrests	Military Lands boundary files, internal dataset (2007)
9) 50% exclusion of state forest land, where GIS data is available	State/GAP land stewardship data management status 2, from Conservation Biology Institute Protected Lands database, 2004
Land Use Criteria	
5) 100% exclusion of airfields, urban, wetland and water areas.	USGS North America Land Use Land Cover (LULC), version 2.0, 1993; ESRI airports and airfields (2006); U.S. Census Urbanized Areas (2000 and 2003)
10) 50% exclusion of non-ridgecrest forest	Ridge-crest areas defined using a terrain definition script, overlaid with USGS LULC data screened for the forest categories.
Other Criteria	
1) Exclude areas of slope > 20%	Derived from 90 m national elevation dataset.
6) 100% exclude 3 km surrounding criteria 2-5 (except water)	Merged datasets and buffer 3 km
Note - 50% exclusions are not cumulative. If an area is non-ridgecrest forest on USFS land, it is just excluded at the 50% level one time.	