

STATE BOARD OF LAND COMMISSIONERS

August 21, 2018

Regular Agenda

Subject

State Grazing Rate Methodology Review

Background

On December 5, 2017, the State Board of Land Commissioners (Land Board) held a special meeting to consider selecting a grazing rate approach and formula for State Endowment lands (Attachment 1). The two preferred alternatives being considered were based on a recommendation by the Land Board established Grazing Subcommittee (Subcommittee), with a final report and analysis presented during the November 2017, regular Land Board meeting. The two alternatives presented for Land Board consideration included a Contributory Share Approach, called the Calf-Crop Share formula with a 13% state share and a Price Index Approach called the Revised Status Quo (RSQ) formula with a base fee value of between \$2.00 and \$2.58.

During the December 2017 special meeting the Land Board voted unanimously to defer a decision on the issue until the Land Board could appropriately consider additional information. During this special meeting, the Land Board elected not to prescribe a time limit for the review.

As directed by the Land Board, the Idaho Department of Lands (Department) conducted a review during the months of March through June 2018, of existing grazing rate data, analysis methodologies, and publications previously presented. The purpose of this review was to summarize this information and provide the Land Board with a grazing rate methodology recommendation.

Department Review Findings

Members of the Grazing Subcommittee Advisory Group suggested a 13% state contributory share as an appropriate share under the Calf-Crop Share formula. Originally, Advisory Group members recommended a 12.5% state contributory share as this share associates with one-half of a standard row-crop share of 25%. The rationale for the 12.5% state share was based on the premise that it takes approximately one year to raise a calf, or 15 months from conception to weaning. Accomplished through a variety of land and feed inputs including hay and federal land allotments, only a portion of the forage requirements for beef production may come from state trust lands. In contrast, with a row-crop state share of 25% the producer may depend entirely on the state trust lands for crop production.

Using a 12.5% state share in the Calf-Crop Share formula produced State Animal Unit Month (AUM) grazing rates that tracked at or below the current Status Quo formula grazing rates. Since the Status Quo formula AUM rates already track well below Idaho Private AUM lease rates, the Advisory Group members raised the state share to 13% so that the Calf-Crop Share AUM rate would track slightly higher than the Status Quo rates.

After further review of the Calf-Crop Share formula and follow-up conversations with Advisory Group members, the Department finds no solid or defensible basis for recommending the Calf-Crop Share formula with a 13% state share contribution.

The Revised Status Quo (RSQ) formula relates and tracks closely with a percentage of the USDA-National Agricultural Statistics Services (USDA-NASS) published Idaho Private Lands Lease Rate (IDPLLR), depending on the base fee value chosen. The RSQ formula eliminates the multi-collinearity concerns associated with current grazing rate formula by eliminating the 11-Western States Forage Value Index and the Prices Paid Index.

In order to determine an appropriate base fee for the RSQ formula, the Departments review consisted of the following:

1. An analysis of the Idaho state endowment trust lands Return on Asset for the Rangeland Asset;
2. An analysis of peer-reviewed, published literature that examined potential discounts of state trust land or federal public land grazing lease rates from private lands grazing lease rates;
3. An update to the Table 2: Summary of Fee and Non-Fee Grazing Costs from the 2011 publication by Dr. Neil Rimbey and L.A. Torell, *Grazing costs: What's the current situation?* (Agricultural Economics Extension Series No. 2011-02. University of Idaho, College of Agricultural and Life Sciences) with 2017 data as published from USDA-NASS;
4. An analysis of Idaho's state trust lands grazing rates compared to other western states trust lands grazing rates.

Several lines of evidence suggest that a 30%-35% discount from the USDA-NASS published IDPLLR may be a defensible and justifiable discount to determine a state trust lands grazing rate. A grazing rate based on a 30%-35% discount would achieve the Land Board's mandate to maximize revenue for endowment beneficiaries and would account for the additional costs lessees incur in managing a state trust lands lease.

1) Return on Asset Analysis

One method in determining a defensible discount rate is to analyze published financial performance reports that evaluate Return on Asset (ROA) for rangelands and established Land Board policy for rates of return on state trust rangelands.

Based on expected net rate of returns reviewed within several financial publications and established Land Board policies the Department identified a range of between 0.5% and

6.0% net real ROA for rangelands with an average of 2.15%-3.45% net real ROA. In contrast, the Land Board's Asset Management Advisor Callan Associates recommended a 3.5% net real ROA for timberland and 4.5% net real ROA for farmland.

In the July 2017, *Statement of Investment Policy – Idaho Land Grant Endowments*, the policy positions land asset investment objectives by considering the existing base of land holdings along with management constraints, notably sales restrictions, acreage limitations, and the rent-setting and leasing processes. In consideration of this policy statement, the Department selected a conservative net real ROA of 2.0% for state trust rangelands (Attachment 2).

According to recent Department financial data analysis, there are 1,732,501 grazing acres under lease, representing a land value of \$74,084,230. Based on a 2.0% ROA, the expected net income return would be \$1,481,685. To achieve this benchmark, the Land Board would need to set a grazing rate of \$12.21 per AUM. This translates to a discount from the private lease rate of 32%.

Based on Department income statements and published annual reports, the 3-year average ROA (FY16-FY18) for the rangeland asset is 1.58% net. A prudent goal over the long-term would be to move closer to a 2.0% net ROA.

2) Published Literature

The Department reviewed several existing published rangeland and grazing economic studies that evaluate what a suitable discount may be between a private land grazing lease and a grazing lease on public or state trust lands. The Department and Dr. Dennis Becker, University of Idaho Policy Analysis Group, reviewed and compiled the most prominent peer-reviewed publications available. Collectively, these publications identified a potential range of 12% to 44% discount from the private lands lease rate, with an average suggested discount of 30% for a public or state trust land grazing lease compared to a private lands grazing lease (Attachment 3).

3) Update to Table 2: Summary of Fee and Non-Fee Grazing Costs

The 1994 publication *The Value of Public Land Forage and the Implications for Grazing Fee Policy*¹ is the only comprehensive study to date that quantifies specific costs associated with livestock grazing on private lands versus federal public lands. This study identified non-fee grazing costs (herding, fencing, etc.) in 1992 for private leases and federal public permits in Idaho, Wyoming, and New Mexico. As a follow up Dr. Rimbey, et al., brought the cost figures forward from 1992 to 2010 in the publication *Grazing Costs: What's the Current Situation?* (Rimbey & Torell, 2011).

¹ *The Value of Public Land Forage and the Implications for Grazing Fee Policy: A Summary of the Bureau of Land Management and U.S. Forest Service Incentive-based grazing fee study*, Grazing Fee Task Group; Agricultural Experiment Station Bulletin 767, New Mexico State University, College of Agriculture and Home Economics; January 1994.

To do this, the authors assigned USDA-NASS reported indices to the cost items identified during the previous research. For example, the costs of moving livestock are represented by the average of two USDA-NASS indices: "Auto and Truck Costs" and "Wage Rates". By making the comparison between 1992 cost indices to 2010 cost indices, the authors derived an index or inflation factor that was then used to extrapolate 2010 costs. Using the same method, the Department recreated the summary of non-fee grazing costs for 2017 by comparing 2010 USDA-NASS indices to corresponding 2017 indices.

The results (Attachment 4) indicate a 36% higher cost to graze on federal public land versus private land in 2010 compared to a 31% higher cost to graze on federal public land versus private land in 2017. Costs associated with grazing on federal lands may be higher or comparable to costs associated with grazing on state endowment trust lands, depending on identified factors within the study. As such, applying a 31% discount for grazing on state endowment trust lands is likely conservative.

The Department received additional costs analysis related to grazing on state trust lands from the Idaho Farm Bureau during the review time period. A survey of roughly 1% of state grazing lessees, with approximately 9% of the total state AUMs, identified a straight average non-fee cost of \$27.71/AUM. With a weighted average that covers the 23,091 total AUMs surveyed, the 2018 average non-fee cost of grazing on state trust lands is \$14.94/AUM. Though this constitutes a small subset of state grazing lessees surveyed, the 2018 weighted average non-fee costs to graze on state trust lands of \$14.94/AUM might be measured in relation to the 2017 private cattle non-fee cost of \$16.43/AUM and the 2017 federal public land non-fee cost of \$23.86/AUM identified in the previously reported grazing cost study.

4) Western State Comparison

The Department reviewed methodology used by other western states with trust lands to determine an AUM market rate for state trust grazing lands. A comparison of USDA-NASS private land lease AUM rates to state trust land AUM rates for each of the western states shows great variability, ranging from no discount in Nevada and Oregon, to a 71% discount in Wyoming. An average of the 11-western state discount rates, excluding California (California sets individual rates for their leases) shows an average of a 34% discount (Attachment 5).

In summary, multiple methods of analyzing lease rates that result in nearly the same discount rate of between 30%-35% gives Idaho a high degree of confidence that this may represent the average differences in cost between a private grazing lease and a state trust land grazing lease.

Discussion

The Revised Status Quo formula was one of two methods recommended by the Grazing Subcommittee for consideration by the Land Board. The RSQ formula, developed and recommended by Dr. Neil Rimbey, is similar to the Status Quo formula but it removes the

highly correlated variables of the 11-Western States Forage Value Index and Prices Paid Index. Similar to the Status Quo methodology, a three-step process is used to calculate the RSQ State AUM grazing rate. The first step is to compute the current (t) annual published IDPLLR rate into an index, and insert that index into the formula. The second step is to calculate the first part of the formula into a predicted, two-year future (t+2), Idaho Forage Value Index (IDFVI). The third step is to calculate the two-year future grazing AUM rate by inserting the predicted IDFVI, dividing by 100, and then multiplying a base fee value to arrive at the AUM rate.

Revised Status Quo Formula

$$\begin{aligned}
 \text{2017 Value:} & \quad \$18.00/\text{AUM IDPLLR}_t \\
 \text{IDFVI}_t = & \quad = (+18.00_t / \text{Absolute Value } \$3.39) * 100 \\
 & \quad = 531_t \\
 \text{RSQ Formula} & \quad = (13.85 + (0.9967 * \text{IDFVI}_t)) / 100 \\
 \text{Predicted, IDFVI}_{t+2} & \quad = (13.85 + (0.9967 * 531_t)) / 100 \\
 & \quad = 5.431_{t+2}
 \end{aligned}$$

Example

$$\begin{aligned}
 \text{2019 State Grazing Fee} & \quad = (5.431_{t+2}) \times (\$2.15 \text{ Base Fee}) \\
 & \quad = \$11.68/\text{AUM}
 \end{aligned}$$

Since the RSQ formula tracks directly with a percentage of the USDA-NASS published IDPLLR, one option (Option 1) would be to index the base fee value as a percentage of the IDPLLR. Attachment 6 is an exhibit of the Revised Status Quo formula data with historical and projected state AUM grazing rates, percentage ratio to the USDA-NASS published Idaho Private Lands Lease Rate, and a comparison to the current Status Quo formula.

A second option (Option 2) simply applied would be to establish a state grazing rate as a percentage of the USDA-NASS published IDPLLR (Attachment 7).

Regardless of the option selected, the Land Board could also consider phasing in either option over a 4-year period to allow the Department to track market trends and confirm that as grazing rates are increased, there is no net loss to state trust endowment beneficiaries.

Recommendation

The Department recommends adoption of Option 1 or Option 2:

Option 1	Option 2
<p>A) Land Board adopts the RSQ formula with a base fee index value of 2.15, representing 65% of the USDA-NASS published IDPLLR.</p> <p>B) Land Board adopts a 4-year phase-in of the base fee index value as follows: <u>2019</u>: RSQ index value set at 1.65; representing 50% of the 2017 USDA-NASS IDPLLR; 2019 state AUM rate set at \$8.96/AUM. <u>2020</u>: RSQ index value set at 1.81; representing 55% of the 2018 USDA-NASS IDPLLR. <u>2021</u>: RSQ index value set at 1.98; representing 60% of the 2019 USDA-NASS IDPLLR. <u>2022</u>: RSQ index value set at 2.15; representing 65% of the 2020 USDA-NASS IDPLLR.</p>	<p>A) Land Board adopts a grazing rate that represents 65% of the USDA-NASS published IDPLLR.</p> <p>B) Land Board adopts a 4-Year Phase-in as follows: <u>2019</u>: State AUM rate set at \$8.96/AUM representing 50% of the 2017 USDA-NASS IDPLLR. <u>2020</u>: State AUM rate set at 55% of the 2018 USDA-NASS IDPLLR. <u>2021</u>: State AUM rate set at 60% of the 2019 USDA-NASS IDPLLR. <u>2022</u>: State AUM rate set at 65% of the 2020 USDA-NASS IDPLLR.</p>
<p>C) Department annually tracks USDA-NASS published data and provide the Land Board with an annual update on trends using 2017 data as the baseline. Annual updates would include 2017 baseline trend data and show the following: Total # AUMs under lease Total # of acres under lease Total gross revenue AUMs, acres, and gross revenue identified under Timberland Asset AUMs, acres, and gross revenue identified under Rangeland Asset State endowment trust land AUMs and acres surrounded 100% by private land State endowment trust land AUMs and acres surrounded by federal lands State endowment trust land AUMs and acres with full management or legal access</p>	<p>C) Same as Option 1</p>

D) Department conducts a 5-year review summarizing all data during CY2023 and presents to Land Board to reconsider the established benchmark of a 35% discount from the IDPLLR and the ongoing use of RSQ formula.

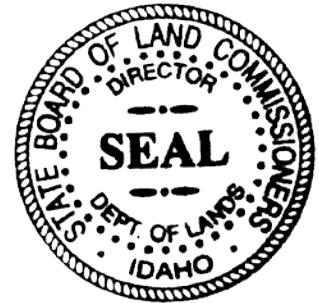
D) Department conducts a 5-year review summarizing all data during CY2023 and present to Land Board to reconsider the established benchmark of a 35% discount from the IDPLLR.

Board Action

A motion was made by Secretary of State Denney that the Board continue with the status quo and develop numbers on total costs so the Board can set the rate based on total cost rather than a formula that is a political decision. Governor Otter seconded the motion for discussion. Following discussion, Governor Otter repeated the motion that the Board will continue with the status quo to have more time to gather more information, or wait for the \$500,000 Wyoming study. The motion carried on a vote of 4-1. Attorney General Wasden cast the dissenting vote and asked that his vote be recorded in the meeting minutes.

Attachments

1. December 5, 2017 Board Memo
2. IDL Rangeland ROA Analysis
3. Grazing Rate Discount Publications
4. Comparison of Non-Fee Grazing Costs - 2010, 2017, 2018
5. 2016 Grazing Rates for 11 Western States – State vs Private
6. Revised Status Quo Formula; Graph RSQ
7. Discount IDPLLR; Graph Discount IDPLLR



STATE BOARD OF LAND COMMISSIONERS
December 5, 2017
Regular Agenda

SUBJECT

Grazing Rate Methodology

BACKGROUND

During the November 21, 2017, regular State Board of Land Commissioners (Land Board) meeting the Idaho Department of Lands (Department) presented the Grazing Subcommittee and Rate Methodology Review Update. This summation of information and analysis, conducted by the Grazing Subcommittee, Advisory Group and expert consultants, spanned a two-year process that included: 12 Subcommittee and Advisory Group meetings; development of methodology alternatives; an economic analysis and a final Land Board report presented by Dr. Dennis Becker, University of Idaho Policy Analysis Group; and a public review and comment period. The Land Board directive before the Grazing Subcommittee was to bring forward recommended alternatives for full Land Board consideration. As a result, during the November 21, 2017, regular meeting, the Grazing Subcommittee recommended two alternatives to be considered by the Land Board:

- Revised Status Quo – Price Index Approach; base fee between \$2.00 - \$2.58
- Calf-Crop Share – Contributory Share Approach; 13% state share

DISCUSSION

The two alternatives recommended by the Grazing Subcommittee at the November Land Board meeting are in alignment with the final report conclusion developed by Dr. Dennis Becker and include a Price Index approach with a range of base values and a Contributory Share approach. Attachment 1 is an exhibit that intends to establish a scaled range of values for the two alternatives brought forward by the Grazing Subcommittee and includes the Status Quo and the USDA National Agricultural Statistics Service (NASS) Idaho private lease rates as points of reference.

Public testimony was received during the November 21, 2017, regular Land Board meeting and the Board agreed to consider additional written testimony received by December 1, 2017. All additional public written testimonies received through December 1 were forwarded to Board members for review as they were received. All public comments and written testimony received between November 21 and December 1, 2017, are included within Attachment 2.

In addition to the Land Board receiving written testimony, the Land Board will provide an opportunity for short verbal testimony today, limited to three minutes per person, as per the meeting agenda that was released to the public last week.

BOARD ACTION

A motion was made by Secretary of State Denney to defer a decision on this issue until the Board can appropriately consider the additional information received. Controller Woolf seconded the motion. The motion carried on a vote of 5-0.

For the record, the Board prescribed no time limit for its review.

ATTACHMENTS

1. Comparison of Grazing Rates
2. Public Testimony received November 21 through December 1, 2017



IDL Rangeland Return On Asset Analysis

	Rangeland Asset	Acres Leased for Grazing	
Acres	1,426,519	1,732,501	
Value	\$61,000,000	\$74,084,230	
AUMs		257,950	
Acres/AUM		6.7	
Gross Income (GI) ROA	4.25%	2.25%	10-Year Inflation Rate Ave (Callan)
Real Net Income (NI) ROA	2.00%		
Expected Net Income	\$1,481,685		
Expected Net Income Per Acre	\$0.86		
6-Year Average Annual Expenses	\$1,577,413		
Average Expense Per Acre	\$0.91		
Expected Gross Income Per Acre	\$1.82		
Expected Gross Income	\$3,148,580		
Expected IDL AUM Rate	\$12.21		
2017 Pvt Lease Rate	\$18.00		
IDL % of Private Rate	68%		
Discount from Private Rate	32%		

IDL Annual Reports - Income Statement

Fiscal Year	Gross Rev	Net Rev	NI ROA	Cost%
FY13	\$1,932,652	\$679,343	0.92%	64.85%
FY14	\$2,160,442	\$775,041	1.05%	64.13%
FY15	\$2,265,606	\$811,075	1.09%	64.20%
FY16	\$2,970,033	\$1,212,708	1.64%	59.17%
FY17	\$2,976,094	\$989,671	1.34%	66.75%
FY18	\$2,943,898	\$1,316,410	1.78%	55.28%
Average (FY13-18)	\$2,541,454	\$964,041	1.30%	62.07%
3-Yr Avg (FY16-18)	\$2,963,342	\$1,172,930	1.58%	60.42%

Supporting Publications	ROA (%)
PAG Issue Brief #17, March 2016 - <i>Financial Performance of Idaho's Endowment Rangelands</i> ; University of Idaho; Dennis R. Becker, Ph.D. and Philip S. Cook	1.7 - 2.8
PAG Report #21, December 2001 - <i>Endowment Fund Reform and Idaho's State Lands: Evaluating Financial Performance of Forest & Rangeland Assets</i> ; University of Idaho; J. O'Laughlin and P.S. Cook	1.3 - 2.2
Callan Associates Report - <i>Asset Allocation and Governance Review</i> ; 2014	1.25
<i>Idaho State Trust Lands Asset Management Plan</i> ; 2011	0.5 - 5.0
<i>Citizens Committee Report</i> ; Curtis et al.; 2001	6.00

Low/High Average: **2.15 - 3.45**

Grazing Rate Discount Publications

Discount	Title	Author	Year
30%	<i>Economic Consideration for Setting Grazing Fees on New Mexico State Trust Lands</i>	Torell	1990
36-39%	Range and Pasture Forage: What's it worth? (Cited by IDL Market Rent Study)	Rimbey	1992
30-35%	Grazing fees: how much is fair? Research Report 666 (Cited by IDL Market Rent Study)	Torell	1992
30%	<i>Public Grazing in the West and Rangeland Reform '94</i> (Discount Analysis for all Western States)	LaFrance	1995
20-30%	<i>Montana Trust Land Grazing Lease Rate Valuation Analysis</i>	Bioeconomics	2011
44%	<i>Montana Grazing Rate Update and Montana Summary of the 2011 Grazing Review</i> (30% was base rate, but discount was increased due to DNRC lease conditions)	MT DNRC	2012
12-14%	U of I Research Bulletin 185 Idaho Private Rangeland Grazing – Lease Arrangements	Rimbey	2014
Average Discount Cited in Publications and Economic Studies: 30%			

Comparison of Non-Fee Grazing Costs, 2010 and 2017

Item	Corresponding NASS Indices	2010	2010	2017	2017	2017
		Public Cattle Cost	Private Cattle Cost	Index/Inflation Factor	Public Cattle Cost	Private Cattle Cost
Lost Animals	Meat Animals/Prices Received	\$2.81	\$1.62	0.70	\$1.98	\$1.14
Association Fees	Production Items	\$0.55	\$0.00	0.53	\$0.29	\$0.00
Veterinarian	Wage Rates	\$0.10	\$0.12	0.62	\$0.06	\$0.07
Moving Livestock	(Auto & Trucks) + (Wage Rates)	\$4.77	\$2.75	0.78	\$3.71	\$2.13
Herding	Wage Rates	\$4.29	\$2.92	0.62	\$2.68	\$1.83
Salt and Feed	(Auto & Trucks) + (Feed)	\$2.88	\$4.02	1.37	\$3.95	\$5.50
Travel	(Auto & Trucks) + (Fuel & Energy)	\$1.40	\$0.37	1.16	\$1.63	\$0.42
Water	Production Items	\$0.45	\$0.13	0.53	\$0.24	\$0.07
Horse Cost	Feed	\$0.56	\$0.27	0.44	\$0.25	\$0.12
Maintenance	(Wage Rates) + (Building & Fencing)	\$6.66	\$3.85	1.29	\$8.61	\$4.98
Dev. Depreciation	Production Items	\$0.51	\$0.17	0.53	\$0.27	\$0.09
Other Costs	Production Items	\$0.39	\$0.13	0.53	\$0.21	\$0.07
Total Non-Fee Costs		\$25.37	\$16.34		\$23.86	\$16.43
					Discount: 31%	

Data Sources:

Ag Prices Report - USDA NASS - January, 2011

Ag Prices Report - USDA NASS - January, 2018

Grazing Costs: What's the Current Situation?, Rimbey et al. 2011

2018 Idaho Farm Bureau Survey

State Grazing Lease Data from Current Lessees

Expenses/Cost per AUM of Grazing on State Trust Lands

Total State AUMs:	257,950	Active Leases:	1138
Percent AUMs Surveyed:	8.95%	Percent Leases Surveyed:	1.23%

#AUMs	Non-Fee Costs/AUM	2017 State Lease Fee	Total Cost	Total Non-Fee Costs/AUM
1,000	\$9.09	\$9.01	\$18.10	\$9,090.00
512	\$3.90	\$9.01	\$12.91	\$1,996.80
808	\$11.17	\$9.01	\$20.18	\$9,025.36
3,380	\$28.39	\$9.01	\$37.40	\$95,958.20
800	\$18.85	\$9.01	\$27.86	\$15,080.00
4,800	\$13.54	\$9.01	\$22.55	\$64,992.00
65	\$57.67	\$9.01	\$66.68	\$3,748.55
414	\$20.04	\$9.01	\$29.05	\$8,296.56
6,750	\$8.83	\$9.01	\$17.84	\$59,602.50
3,600	\$13.54	\$9.01	\$22.55	\$48,744.00
570	\$29.80	\$9.01	\$38.81	\$16,986.00
40	\$150.00	\$9.01	\$159.01	\$6,000.00
10	\$7.10	\$9.01	\$16.11	\$71.00
342	\$15.95	\$9.01	\$24.96	\$5,454.90
23,091	\$27.71	\$9.01	\$36.72	\$345,045.87

\$27.71

Average Non-fee Cost/AUM

\$14.94

Weighted Average Non-Fee Costs/AUM

Non-fee costs include:

- Labor
- Monitoring cattle
- Water hauling and maintenance
- Herding
- Salt
- Fencing/maintaining
- Land Management
- Vet/trucking
- Fuel
- Weeds Expenses
- Predator loss
- Fire

2016 Grazing Rates for 11 Western States – State vs Private

State	Private Lease Rate	State Lease Rate	State % of Private Rate	Discount
Nevada	\$ 10.00	\$ 11.00	110%	0%
Oregon	\$ 17.00	\$ 17.99	106%	0%
Washington (avg.)	\$ 14.00	\$ 12.80	91%	9%
Montana	\$ 24.00	\$ 19.57	82%	18%
Colorado (avg.)	\$ 17.50	\$ 13.59	78%	22%
Utah (avg.)	\$ 16.50	\$ 8.76	53%	47%
Idaho	\$ 18.00	\$ 8.09	45%	55%
New Mexico	\$ 14.00	\$ 5.99	43%	57%
Arizona	\$ 9.00	\$ 3.45	38%	62%
Wyoming	\$ 21.50	\$ 6.14	29%	71%
California	\$ 23.00	NA	CA Sets Individual Rates for Leases	

Average Discount for 11-Western States: 34%

Revised Status Quo

Source: USDA - National Agricultural Statistics Services(USDA-NASS)

Idaho Private Lands Lease Rate (IDPLLR), January Agricultural Prices publication.

IDPLLR data from general farm questionnaire 1964-1977; switched to June enumerative survey 1978-1999; shifted to January survey 1999 - present.

Rates are \$ per AUM for pasturing cattle on non-irrigated private grazing land.

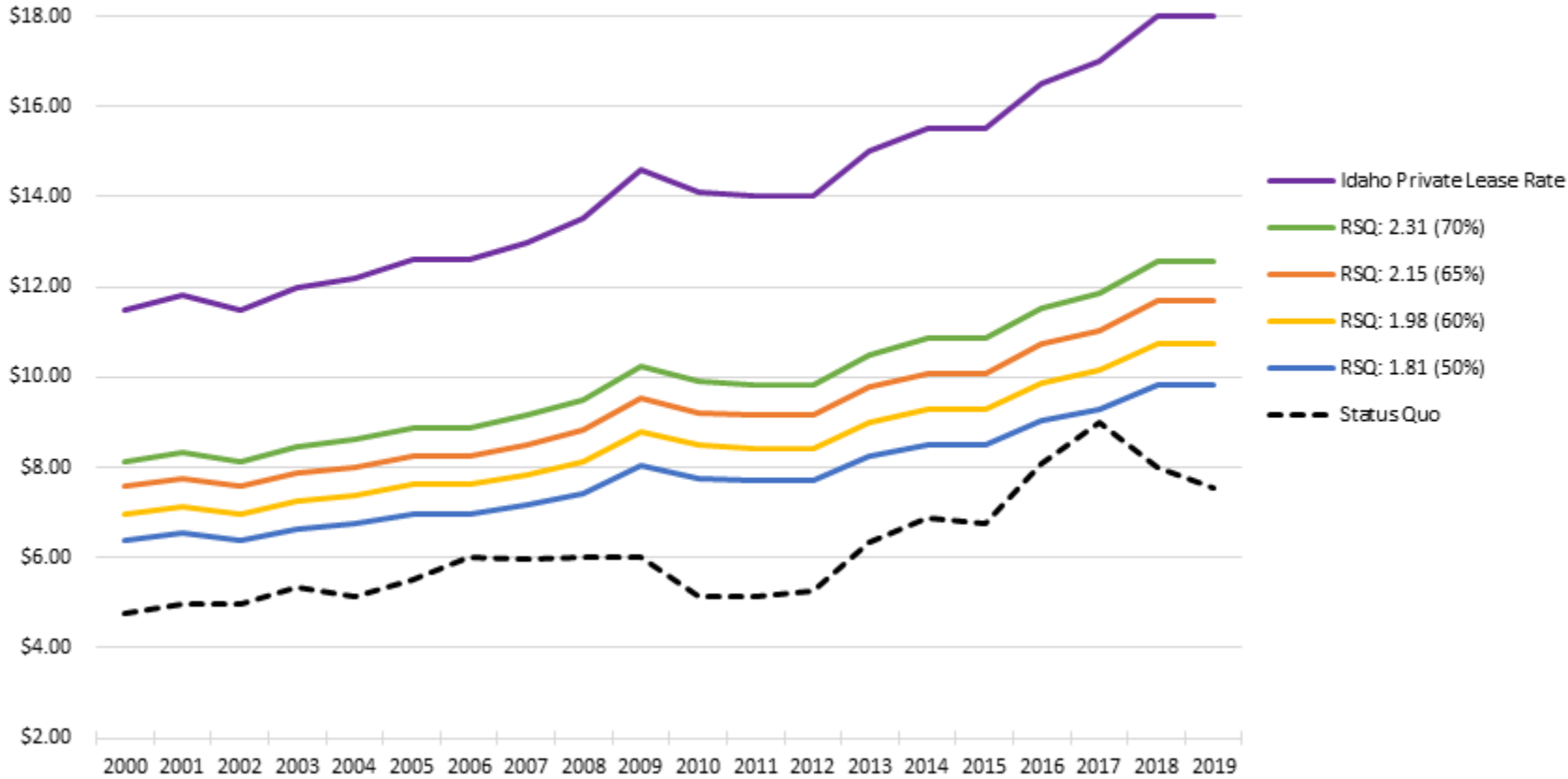
1) $IDFVI_t = (+ IDPLLR_t / \text{Absolute } \$3.39) \times 100$

2) $IDFVI_{t+2} = (13.85 + (0.9967 \times IDFVI_t)) / 100$

3) $\$/AUM = (IDFVI_{t+2}) \times (\$/x.xx \text{ Base Fee})$

Data Year	Status Quo		RSQ		RSQ		RSQ		RSQ		RSQ		RSQ		
	IDPLLR _t	IDFVI _t	Base Fee	% of IDPLLR	Base Fee	% of IDPLLR	Base Fee	% of IDPLLR	Base Fee	% of IDPLLR	Base Fee	% of IDPLLR	Base Fee	% of IDPLLR	
			\$ 1.70		\$ 1.65		\$ 1.81		\$ 1.98		\$ 2.15		\$ 2.31		
1998	\$11.50	339	\$3.520												
1999	\$11.80	348	\$3.608												
2000	\$11.50	339	3.520	\$ 4.76	41%	\$ 5.81	50%	\$ 6.37	55%	\$ 6.97	61%	\$ 7.57	66%	\$ 8.13	71%
2001	\$12.00	354	3.667	\$ 4.95	42%	\$ 5.95	50%	\$ 6.53	55%	\$ 7.14	61%	\$ 7.76	66%	\$ 8.33	71%
2002	\$12.20	360	3.725	\$ 4.96	43%	\$ 5.81	50%	\$ 6.37	55%	\$ 6.97	61%	\$ 7.57	66%	\$ 8.13	71%
2003	\$12.60	372	3.843	\$ 5.33	44%	\$ 6.05	50%	\$ 6.64	55%	\$ 7.26	60%	\$ 7.88	66%	\$ 8.47	71%
2004	\$12.60	372	3.843	\$ 5.15	42%	\$ 6.15	50%	\$ 6.74	55%	\$ 7.38	60%	\$ 8.01	66%	\$ 8.61	71%
2005	\$13.00	383	3.961	\$ 5.53	44%	\$ 6.34	50%	\$ 6.96	55%	\$ 7.61	60%	\$ 8.26	66%	\$ 8.88	70%
2006	\$13.50	398	4.105	\$ 6.02	48%	\$ 6.34	50%	\$ 6.96	55%	\$ 7.61	60%	\$ 8.26	66%	\$ 8.88	70%
2007	\$14.60	431	4.434	\$ 5.96	46%	\$ 6.54	50%	\$ 7.17	55%	\$ 7.84	60%	\$ 8.52	66%	\$ 9.15	70%
2008	\$14.10	416	4.284	\$ 6.01	45%	\$ 6.77	50%	\$ 7.43	55%	\$ 8.13	60%	\$ 8.83	65%	\$ 9.48	70%
2009	\$14.00	413	4.255	\$ 5.99	41%	\$ 7.32	50%	\$ 8.03	55%	\$ 8.78	60%	\$ 9.53	65%	\$ 10.24	70%
2010	\$14.00	413	4.255	\$ 5.12	36%	\$ 7.07	50%	\$ 7.75	55%	\$ 8.48	60%	\$ 9.21	65%	\$ 9.90	70%
2011	\$15.00	442	4.549	\$ 5.13	37%	\$ 7.02	50%	\$ 7.70	55%	\$ 8.42	60%	\$ 9.15	65%	\$ 9.83	70%
2012	\$15.50	457	4.696	\$ 5.25	38%	\$ 7.02	50%	\$ 7.70	55%	\$ 8.42	60%	\$ 9.15	65%	\$ 9.83	70%
2013	\$15.50	457	4.696	\$ 6.36	42%	\$ 7.51	50%	\$ 8.23	55%	\$ 9.01	60%	\$ 9.78	65%	\$ 10.51	70%
2014	\$16.50	487	4.990	\$ 6.89	44%	\$ 7.75	50%	\$ 8.50	55%	\$ 9.30	60%	\$ 10.10	65%	\$ 10.85	70%
2015	\$17.00	501	5.137	\$ 6.77	44%	\$ 7.75	50%	\$ 8.50	55%	\$ 9.30	60%	\$ 10.10	65%	\$ 10.85	70%
2016	\$18.00	531	5.431	\$ 8.09	49%	\$ 8.23	50%	\$ 9.03	55%	\$ 9.88	60%	\$ 10.73	65%	\$ 11.53	70%
2017	\$18.00	531	5.431	\$ 9.01	53%	\$ 8.48	50%	\$ 9.30	55%	\$ 10.17	60%	\$ 11.04	65%	\$ 11.87	70%
2018				\$ 8.03	45%	\$ 8.96	50%	\$ 9.83	55%	\$ 10.75	60%	\$ 11.68	65%	\$ 12.54	70%
2019				\$ 7.56	42%	\$ 8.96	50%	\$ 9.83	55%	\$ 10.75	60%	\$ 11.68	65%	\$ 12.54	70%
10-Year Average (2010-2019)				\$ 6.82	43%	\$ 7.49	50%	\$ 8.22	55%	\$ 8.99	60%	\$ 9.76	65%	\$ 10.49	70%
20-Year Average (2000-2019)				\$ 6.14	43%	\$ 7.09	50%	\$ 7.78	55%	\$ 8.51	60%	\$ 9.24	65%	\$ 9.93	70%
2019 \$/AUM Rate				\$ 7.56	42%	\$ 8.96	50%	\$ 9.83	55%	\$ 10.75	60%	\$ 11.68	65%	\$ 12.54	70%

Revised Status Quo Comparison



Discount IDPLLR

Source: USDA - National Agricultural Statistics Services(USDA-NASS)

Idaho Private Lands Lease Rate (IDPLLR), January Agricultural Prices publication.

IDPLLR data from general farm questionnaire 1964-1977; switched to June enumerative survey 1978-1999; shifted to January survey 1999 - present.

Rates are \$ per AUM for pasturing cattle on non-irrigated private grazing land.

Data Year	IDPLLR _t	Status Quo	Status Quo	Disc. IDPLLR	Disc. IDPLLR	Disc. IDPLLR	Disc. IDPLLR	Disc. IDPLLR	Disc. IDPLLR	Disc. IDPLLR	Disc. IDPLLR	Disc. IDPLLR	Disc. IDPLLR
		Base Fee	% of IDPLLR	State AUM Rate	% of IDPLLR	State AUM Rate	% of IDPLLR	State AUM Rate	% of IDPLLR	State AUM Rate	% of IDPLLR	State AUM Rate	% of IDPLLR
		\$ 1.70											
1998	\$11.50												
1999	\$11.80												
2000	\$11.50	\$ 4.76	41%	\$ 5.75	50%	\$ 6.33	55%	\$ 6.90	60%	\$ 7.48	65%	\$ 8.05	70%
2001	\$12.00	\$ 4.95	42%	\$ 5.90	50%	\$ 6.49	55%	\$ 7.08	60%	\$ 7.67	65%	\$ 8.26	70%
2002	\$12.20	\$ 4.96	43%	\$ 5.75	50%	\$ 6.33	55%	\$ 6.90	60%	\$ 7.48	65%	\$ 8.05	70%
2003	\$12.60	\$ 5.33	44%	\$ 6.00	50%	\$ 6.60	55%	\$ 7.20	60%	\$ 7.80	65%	\$ 8.40	70%
2004	\$12.60	\$ 5.15	42%	\$ 6.10	50%	\$ 6.71	55%	\$ 7.32	60%	\$ 7.93	65%	\$ 8.54	70%
2005	\$13.00	\$ 5.53	44%	\$ 6.30	50%	\$ 6.93	55%	\$ 7.56	60%	\$ 8.19	65%	\$ 8.82	70%
2006	\$13.50	\$ 6.02	48%	\$ 6.30	50%	\$ 6.93	55%	\$ 7.56	60%	\$ 8.19	65%	\$ 8.82	70%
2007	\$14.60	\$ 5.96	46%	\$ 6.50	50%	\$ 7.15	55%	\$ 7.80	60%	\$ 8.45	65%	\$ 9.10	70%
2008	\$14.10	\$ 6.01	45%	\$ 6.75	50%	\$ 7.43	55%	\$ 8.10	60%	\$ 8.78	65%	\$ 9.45	70%
2009	\$14.00	\$ 5.99	41%	\$ 7.30	50%	\$ 8.03	55%	\$ 8.76	60%	\$ 9.49	65%	\$ 10.22	70%
2010	\$14.00	\$ 5.12	36%	\$ 7.05	50%	\$ 7.76	55%	\$ 8.46	60%	\$ 9.17	65%	\$ 9.87	70%
2011	\$15.00	\$ 5.13	37%	\$ 7.00	50%	\$ 7.70	55%	\$ 8.40	60%	\$ 9.10	65%	\$ 9.80	70%
2012	\$15.50	\$ 5.25	38%	\$ 7.00	50%	\$ 7.70	55%	\$ 8.40	60%	\$ 9.10	65%	\$ 9.80	70%
2013	\$15.50	\$ 6.36	42%	\$ 7.50	50%	\$ 8.25	55%	\$ 9.00	60%	\$ 9.75	65%	\$ 10.50	70%
2014	\$16.50	\$ 6.89	44%	\$ 7.75	50%	\$ 8.53	55%	\$ 9.30	60%	\$ 10.08	65%	\$ 10.85	70%
2015	\$17.00	\$ 6.77	44%	\$ 7.75	50%	\$ 8.53	55%	\$ 9.30	60%	\$ 10.08	65%	\$ 10.85	70%
2016	\$18.00	\$ 8.09	49%	\$ 8.25	50%	\$ 9.08	55%	\$ 9.90	60%	\$ 10.73	65%	\$ 11.55	70%
2017	\$18.00	\$ 9.01	53%	\$ 8.50	50%	\$ 9.35	55%	\$ 10.20	60%	\$ 11.05	65%	\$ 11.90	70%
2018		\$ 8.03	45%	\$ 9.00	50%	\$ 9.90	55%	\$ 10.80	60%	\$ 11.70	65%	\$ 12.60	70%
2019		\$ 7.56	42%	\$ 9.00	50%	\$ 9.90	55%	\$ 10.80	60%	\$ 11.70	65%	\$ 12.60	70%
10-Year Average (2010-2019)		\$ 6.82	43%	\$ 7.49	50%	\$ 8.23	55%	\$ 8.98	60%	\$ 9.73	65%	\$ 10.48	70%
20-Year Average (2000-2019)		\$ 6.14	43%	\$ 7.07	50%	\$ 7.78	55%	\$ 8.49	60%	\$ 9.19	65%	\$ 9.90	70%
2019 \$/AUM Rate		\$ 7.56	42%	\$ 9.00	50%	\$ 9.90	55%	\$ 10.80	60%	\$ 11.70	65%	\$ 12.60	70%

% of Idaho Private Lease Rate (IDPLLR) Comparison

