



# QUIET RECREATION ON BLM-MANAGED LANDS: ECONOMIC CONTRIBUTION 2014

FINAL REPORT

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ECONorthwest specializes in economics, planning, and finance. Established in 1974, ECONorthwest has four decades of experience helping clients make sound decisions based on rigorous economic, planning and financial analysis.

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## DISCLAIMER

ECONorthwest was commissioned by The Pew Charitable Trusts to complete this report.

Throughout the report we have identified our sources of information and assumptions used in the analysis. Within practical limits, ECONW has made every effort to check the reasonableness of the data and assumptions and to test the sensitivity of the results of our analysis to changes in key assumptions.

We gratefully acknowledge the assistance of the many individuals who provided us with information and insight. But we emphasize that we, alone, are responsible for the report's contents. We have prepared this report based on our own knowledge and training and on information derived from government agencies, private statistical services, the reports of others, interviews of individuals, or other sources believed to be reliable. ECONorthwest has not verified the accuracy of such information, however, and makes no representation regarding its accuracy or completeness. Any statements nonfactual in nature constitute the authors' current opinions, which may change as more information becomes available.

This report was peer reviewed by other professional economists for accuracy and appropriateness in the application of analytical methods. Responsibility for its research and findings lies solely with the authors.

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*Image courtesy of David W. Shaw*

## EXECUTIVE SUMMARY

Public lands managed by the Bureau of Land Management (BLM) in the western United States and Alaska provide a wealth of recreational opportunities to visitors. These range from camping, hiking, and hunting to off-highway vehicle use (OHV), boating, and snowmobiling.

In this report we distinguish between “quiet” and “non-quiet” recreational activities. We use the term “quiet recreation” to refer to recreation that generally does not involve significant use of motorized equipment—aside from any transportation to-and-from the recreation sites.

Recreation visitors make expenditures in communities near BLM-managed lands in conjunction with day trips and overnight stays. These expenditures stimulate additional economic activity, supporting incomes and economic output in those local communities and elsewhere.

In this report, we present the results of our analysis of the overall economic contribution of quiet recreation on BLM lands in 11 western states and Alaska in 2014. Our analysis begins by identifying the amount of quiet recreation that occurred on BLM lands in 2014. We analyze the BLM recreation data in light of more detailed data on the characteristics of recreational visits to national forests so that we can utilize activity-specific spending information. Then, we rely on standards methods to estimate the spending associated with quiet recreation in communities nearby BLM lands—and the ripple effects of that spending throughout each state and across the U.S.



*Image courtesy of Tony Bynum*

Across all lands the BLM manages throughout the U.S., the BLM calculates there were over 61 million recreational visits and over 62 million visitor days in 2014. The bulk of this visitation occurred in the western U.S. and Alaska, with over 60 million visits to these BLM lands and over 62 million visitor days in 2014.

We calculate that in 2014 quiet recreation activities accounted for approximately 36 million visitor days (58 percent of all visitor days) and 38.5 million visits (63 percent of all recreation visits) to BLM lands in the western U.S. and Alaska.

We calculate that quiet recreation visitors to these BLM lands spent approximately \$1.8 billion within 50 miles of the recreation sites in 2014. These expenditures resulted in

overall contributions to the U.S. economy of approximately \$800 million in personal income, \$1.54 billion in value-added, economic output of over \$2.8 billion, and nearly 25,000 jobs.

The results represent only the spending-related economic effects of quiet recreation trips. The estimates in this study include trip spending that occurred within 50 miles of the BLM recreation sites. They do not include, for example, spending on gear or equipment that occurred prior to the trip or outside of 50 miles of the BLM sites. They also do not capture the economic value to recreational visitors or others who benefit from the range of goods and services that may be associated with or supported by quiet recreation opportunities on BLM-managed lands.



Image courtesy of Bob Wick

## INTRODUCTION

Public lands managed by the Bureau of Land Management (BLM) in the western United States and Alaska provide a wealth of recreational opportunities to visitors. These range from camping, hiking, and hunting to off-highway vehicle use (OHV), boating, and snowmobiling. The BLM reports annually on the recreation occurring on the public lands it manages. It distinguishes between land-based, water-based, and snow-and-ice-based activities.

In this report we categorize recreational activities more broadly into “quiet” and “non-quiet” activities. We use the term “quiet recreation” to refer to recreation that generally does not involve significant use

of motorized equipment—aside from any transportation to and from the recreation sites. The analysis in this report may help inform planning processes involving quiet recreation activities on BLM lands.

Recreation visitors make expenditures in communities near BLM-managed lands in conjunction with day trips and overnight stays. These expenditures stimulate additional economic activity, supporting incomes and economic output in those local communities and elsewhere.

The Pew Charitable Trusts commissioned ECONorthwest to describe the economic contribution of quiet recreation on BLM-managed lands in the western United States and Alaska. Our analysis begins by calculating the amount of quiet recreation that occurred on BLM lands in 2014. Then, we estimate the spending associated with such recreation in communities nearby—and the ripple effects of that spending throughout each state and across the U.S.

### BACKGROUND

A variety of research has focused on the economic aspects of recreation on public lands. The economic contribution (or, a related measure, the economic impact) describes only one aspect of the many economic dimensions

of a natural resource such as public land. Other approaches focus on quantifying the economic value to recreationists and others. For example, a recent economic review summarized the research on the economic values of wilderness (one type of public land providing opportunities for non-motorized recreation). It found evidence of increasing economic values of recreation trips (measured as willingness to pay) over time. It also described the “passive use” values of wilderness—or the willingness to pay for wilderness protection.<sup>1</sup>

In this analysis we focus on quantifying the local economic contribution (in the form of jobs and income) stemming from dollars spent by visitors engaged in “quiet” recreation activities on BLM lands. We rely on visitation data from the BLM and spending data from the National Visitor Use Monitoring (NVUM) program for our calculations. The BLM produces an annual estimate of the economic contribution of all recreation on BLM-managed lands using the same data sources. For example, the BLM estimated an economic contribution of \$5.476 billion from recreation in 2014.<sup>2</sup> BLM does not estimate the contribution for any of the recreational activities separately.

Other analysts have focused on quantifying the economic effects of non-motorized or “quiet” recreation across the U.S.<sup>3</sup> A study for the

<sup>1</sup> See T.P. Holmes, J.M. Bowker, J. Englin, E. Hjerpe, J.B. Loomis, S. Phillips and R. Richardson. 2015. *A Synthesis of the Economic Values of Wilderness*. Journal of Forestry. Published Online June 18.

<sup>2</sup> Bureau of Land Management. 2015. *The BLM: A Sound Investment for America 2015*. Accessed January 2016 at: [http://www.blm.gov/style/medialib/blm/wo/Communications\\_Directorate/public\\_affairs/socioeconomic.Par.81563.File.dat/socioeconomic\\_2012.pdf](http://www.blm.gov/style/medialib/blm/wo/Communications_Directorate/public_affairs/socioeconomic.Par.81563.File.dat/socioeconomic_2012.pdf).

<sup>3</sup> Quiet recreation is alternatively characterized as non-motorized, active, human powered, or wilderness recreation, with slight variations in meaning. For example, some analyses consider use the term ‘motorized outdoor recreation’ to refer primarily to off-road vehicle usage, while other studies use broader definitions and also consider downhill skiing and snowboarding to be non-quiet activities given these sports’ reliance on mechanized lifts.



Image courtesy of Tony Bynum

Outdoor Industry Association reported spending of over \$388 billion on non-motorized recreation in 2011.<sup>4</sup> The economic effects of motorized and non-motorized uses of national forests are often addressed in Environmental Impact Statements.<sup>5</sup> A study of the Wallowa-Whitman National Forest in Oregon found that non-motorized recreation generates \$2.9 million to \$5.4 million in labor income in the local region.<sup>6</sup> At the state level, researchers estimated that non-motorized trail usage in national forests in Wyoming generated \$67.9 million in economic contribution in 2013.<sup>7</sup>

We find no analyses to date that have evaluated the economic contribution of quiet or non-motorized recreation on BLM lands. In this

report, we build on existing data and methods to fill that gap. This analysis also goes a step further than previous analyses by explicitly accounting for activity-specific visitation and spending levels, geographic variation in spending, and cross-participation with non-quiet activities on BLM lands.

## OVERVIEW OF THE ANALYSIS

In this report we describe our analysis of the amount of quiet recreation on BLM lands in the western U.S. and Alaska. We also describe our estimates of the amount of spending and economic activity related to such quiet recreation in 2014.

The analysis draws from a number of data sources, relies on standard methods of analysis,<sup>8</sup> and has three primary components:

**Quiet Recreation Visitation:** We estimate the number of visits associated with “quiet recreation” activities on BLM lands in 2014.

- We group recreational activities into “quiet” and “non-quiet” based on input from The Pew Charitable Trusts.
- We combine visitation data from the BLM with data on the characteristics of recreational trips from studies of visitors to national forests to estimate the number of quiet recreation visits on BLM lands.

**Quiet Recreation Spending:** We apply data on the spending amounts associated with individual recreation visits to calculate the total expenditures from quiet recreation visits on lands managed by the BLM.

**Economic Modeling:** We use statewide and regional economic models to estimate the ripple effects of the dollars spent in local communities in conjunction with quiet recreation visits to BLM lands.

We describe each of these components in the next sections.

<sup>4</sup> Southwick Associates. 2012. *The Outdoor Recreation Economy: Technical Report on Methods and Findings*. August 31. p. 20.

<sup>5</sup> See, for example, USDA Forest Service. 2010. *Travel Management Final Environmental Impact Statement and USDA Forest Service*. 2009. *Stanislaus National Forest Motorized Travel Management Environmental Impact Statement*.

<sup>6</sup> K. Lindberg and J. Loomis. 2009. *Economic impacts of non-motorized (quiet) recreation on the Wallowa-Whitman National Forest*, Central Oregon Recreation Services.

<sup>7</sup> D.T. Taylor, A. Nagler, C.T. Bastian, and T.K. Foulke. 2013. *The Economic Impact of Non-motorized Trail Usage on National Forests in Wyoming*. Report prepared for the State of Wyoming, Department of State Parks and Cultural Resources, Department of Agricultural and Applied Economics, University of Wyoming.

<sup>8</sup> For further examples of the methods we used in this analysis, see T. Kroeger and P. Manalo. 2007. *Economic Benefits Provided by Natural Lands: Case Study of California's Mojave Desert*. Washington, D.C.: Defenders of Wildlife; and D. Reading. 2013. *The Economic Impact of the Proposed Boulder White Clouds National Monument*. Ben Johnson Associates. Boise, Idaho.

### BLM LANDS IN THE WESTERN U.S. AND ALASKA

The BLM manages 246.4 million acres of public land across the United States, with most of those lands located west of the Mississippi River and in Alaska.<sup>9</sup> Our analysis focuses on recreation on BLM lands in these 12 states: Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. Within these 12 states, BLM manages approximately 246 million acres of land.<sup>10</sup> Figure 1 shows the geographic locations of these lands.

### RECREATIONAL VISITATION ON BLM LANDS

In this section we summarize the most recent BLM visitation data for the western U.S. and Alaska. The BLM collects data on the number of recreational visits, the types of recreational activities visitors pursue, and the amount of time visitors spend on the land it manages. A “visit” is a trip of any length—an hour, a day, a week—by an individual to BLM land for recreational purposes.<sup>11</sup> A “visitor day” represents a 12-hour period.<sup>12,13</sup> A family of three visiting

<sup>9</sup> Bureau of Land Management (BLM). 2015. *Public Land Statistics 2014*, Vol. 199, BLM/OC/ST-15/005+1165, Table 1-3.

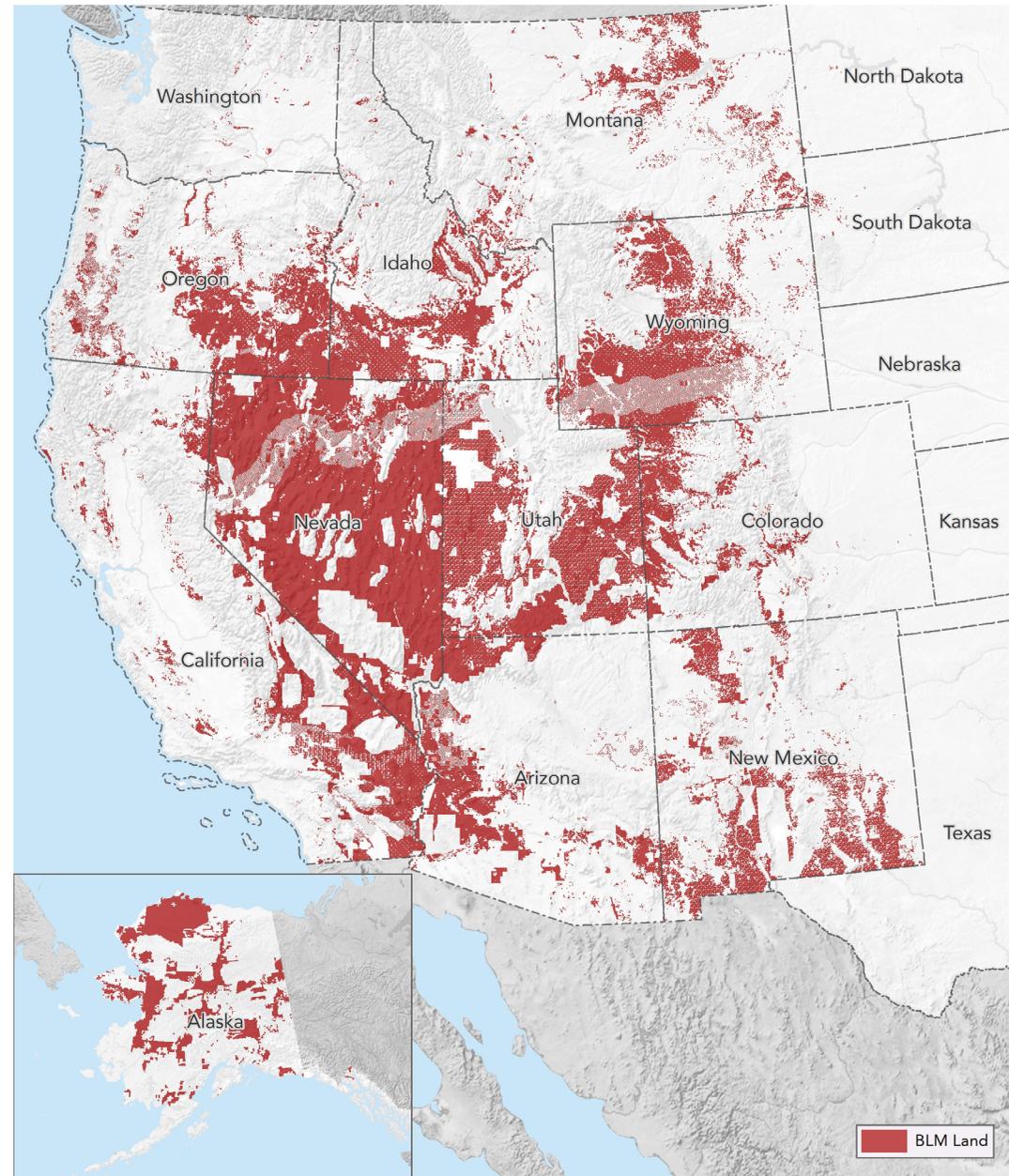
<sup>10</sup> Bureau of Land Management (BLM). 2015. *Public Land Statistics 2014*, Vol. 199, BLM/OC/ST-15/005+1165, Table 1-3.

<sup>11</sup> “A visit is the entry of any person for recreational purposes onto lands and related waters administered by the BLM, regardless of duration.” Bureau of Land Management. 2015. *Public Land Statistics 2014*, Vol. 199, BLM/OC/ST-15/005+1165, p.188.

<sup>12</sup> “A visitor day is a common unit of measure of recreation use among Federal agencies. One visitor day represents an aggregate of 12 visitor hours at a site or area.” Bureau of Land Management. 2015. *Public Land Statistics 2014*, Vol. 199, BLM/OC/ST-15/005+1165, p. 191.

<sup>13</sup> The BLM term “visitor day” is similar to the Forest Service term “recreational visitor day,” which the Forest Service defines as “a statistical reporting unit consisting of 12 visitor hours. A visitor hour is the presence of a person on an area of land and water for the purpose of engaging in one or more recreation activities during a period of time aggregating 60 minutes.” USDA Forest Service. 2011. *National Forest Recreation Use: 1924–1996*. USDA Forest Service, Washington D.C.

Figure 1. BLM-Administered Lands in the Western U.S. and Alaska



Source: ECONorthwest.

BLM lands for 4 hours would have spent one visitor day, combined.<sup>14</sup>

Across all lands the BLM manages throughout the U.S., the BLM calculates there were over 61 million recreational visits and over 62 million visitor days in 2014.<sup>15</sup> The bulk of this visitation occurred in the western U.S. and Alaska. Table 1 contains data on the total recreation visits and visitor days for each state in our analysis. Across these states, there were over 60 million visits to BLM lands and over 62 million visitor days in 2014.

The BLM also collects data on the activities visitors pursue while engaging in recreational activities on these lands. The BLM reports these data in terms of the number of visitor days per activity. Visitors often engage in multiple activities on a visit. For example, a group of three people that each hiked for four hours and picnicked for 2 hours would have spent a combined total of 1 visitor day (12 hours) hiking and one-half of a visitor day (6 hours) picnicking.

As Table 2 shows, visitors participated in a variety of activities during their visits to BLM lands in 2014. Visitors camped or picnicked for approximately 39 percent of all visitor days, engaged in non-motorized travel (walking, horse-back riding, biking, etc.) for 11 percent of visitor days, and engaged in off-highway travel for 10 percent of visitor days.

**Table 1. BLM Recreation Visitation, Western U.S. and Alaska (2014)**

State	Total Visits	Total Visitor Days
Alaska	712,827	709,840
Arizona	4,860,374	13,467,967
California	8,209,825	8,491,861
Colorado	7,535,553	8,399,143
Idaho	6,034,645	4,362,842
Montana	4,937,443	4,258,656
Nevada	7,219,759	5,188,722
New Mexico	3,384,757	2,811,286
Oregon	7,519,405	7,145,578
Utah	6,953,934	5,034,447
Washington	563,682	540,308
Wyoming	2,915,080	2,111,106
<b>Total</b>	<b>60,847,284</b>	<b>62,521,756</b>

Source: ECONorthwest, based on data from the BLM.



Image courtesy of Nicholas Callero

**Table 2. Recreational Use of BLM-Administered Public Lands, U.S. Total, 2014**

Activities	Visitor Days (thousands)	Percent of Total
<b>Land-Based Activities</b>		
Camping and Picnicking	24,364	38.9%
Non-Motorized Travel	6,987	11.2%
Off-Highway Travel	6,566	10.5%
Driving for Pleasure	2,600	4.2%
Viewing Public Land Resources	3,845	6.1%
Interpretation and Education	1,618	2.6%
Hunting	5,845	9.3%
Specialized Sports, Events, and Activities	3,880	6.2%
<b>Water-Based Activities</b>		
Boating/ Motorized	1,134	1.8%
Boating/ Row/Float/Paddle	2,605	4.2%
Fishing	2,135	3.4%
Swimming and Other Water Activities	546	0.9%
<b>Snow-and Ice-Based Activities</b>		
Snowmobile and Motorized Travel	235	0.4%
Other Winter Activities	289	0.5%
<b>Total</b>	<b>62,649</b>	<b>100</b>

Source: Bureau of Land Management. 2015. *Public Land Statistics 2014*, Vol. 198, BLM/OC/ST-14/004+1165.



Image courtesy of Wild Connections

<sup>14</sup> This method of measuring visitation is standard across federal agencies. See also National Park Service (NPS). 2013. Director's Order #82: Public Use Data Collecting and Reporting Program. Online at: <http://www.nps.gov/policy/DOrders/DO-82draft.htm>

<sup>15</sup> The U.S. totals are 61,095,000 visits and 62,649,000 visitor days. Bureau of Land Management. 2015. *Public Land Statistics 2014*, Vol. 199, BLM/OC/ST-15/005+1165, Table 4-1, p. 187.

Table 3 details the number of visitor days spent in the range of recreational activities across the western U.S. and Alaska. Camping dominates the list, at over 23 million visitor days—or over 37 percent of all visitor days. The next closest activity is big game hunting, which accounts for 4.7 million visitor days, or 7.5 percent of all visitor days.

In this report, we focus on the subset of recreational activities that we refer to as quiet recreation. Quiet recreation refers to recreational activities that do not generally involve motorized activity (motor-boating, snowmobiling, motorcycling, other off-highway-vehicle use, etc.)—other than transportation to and from the site. We rely on input from The Pew Charitable Trusts for categorizing the activities, as shown in Table 4. There are some limitations to this approach, as individual categories cover a range of activities, some with the potential for more frequent motorized use than others. As we describe later, we do exclude quiet recreational activity when the data show that motorized activity occurred in conjunction with that activity.

Based on the categories of recreation identified as quiet recreation in Table 4, we exclude the non-quiet activities from the BLM data on visitor days by activity for each state.<sup>16</sup> Table 5 shows the state-by-state totals. Arizona, Colorado, California, and Oregon have the highest number of visitor days spent in quiet recreation activities.

<sup>16</sup> BLM reports a total for “boat launching,” and we break that total into an estimate for motorized boat launching and non-motorized boat launching based on the overall balance between motorized and non-motorized boating activities recorded at each applicable BLM office.

**Table 3. Recreational Activities: Total Visitor Days in Western U.S. and Alaska (2014)**

Activities	Visitor Days	% of Total	Activities	Visitor Days	% of Total
<b>Land-Based Activities</b>			<b>Land-Based Activities (cont.)</b>		
Camping	23,227,360	37.2%	Racing - Foot	16,604	<0.1%
Hunting - Big Game	4,709,115	7.5%	Geocaching	14,179	<0.1%
Hiking/Walking/Running	3,610,071	5.8%	Trials-Motorcycle	11,919	<0.1%
OHV - Cars/Trucks/SUVs	2,723,537	4.4%	Cabin Use	11,056	<0.1%
Driving For Pleasure	2,597,174	4.2%	Model Airplane/Rocket	10,679	<0.1%
OHV - ATV	2,500,074	4.0%	Racing - Motorcycle	10,390	<0.1%
Backpacking	1,267,673	2.0%	Dog Trials	8,107	<0.1%
OHV - Motorcycle	1,185,914	1.9%	High Speed Time Trials	7,973	<0.1%
Viewing - Other	1,170,256	1.9%	Racing - Bicycle	5,391	<0.1%
Bicycling - Mountain	1,104,428	1.8%	Recreation Inquiry	2,495	<0.1%
Social Gathering/Festival/Concert	1,093,535	1.7%	Skating - Roller/Inline	1,963	<0.1%
Viewing - Scenery/Landscapes	1,031,685	1.7%	Racing - ATV	1,424	<0.1%
Nature Study	1,021,992	1.6%	Orienteering	840	<0.1%
Picnicking	931,848	1.5%	Racing - Adventure	831	<0.1%
Viewing - Wildlife	894,164	1.4%	Astronomy	815	<0.1%
Horseback Riding	811,104	1.3%	Racing - Horse Endurance	773	<0.1%
Hunting - Upland Bird	648,987	1.0%	Golf	429	<0.1%
Photography	638,978	1.0%	OHV - Ultralight	180	<0.1%
Viewing - Cultural Sites	636,462	1.0%	Sand Boarding	3	<0.1%
Rockhounding/Mineral Collection	425,001	0.7%	<b>Water-Based Activities</b>		
Climbing - Mountain/Rock	403,971	0.6%	Row/Float/Raft	2,531,402	4.0%
Hunting - Small Game	313,623	0.5%	Fishing - Freshwater	2,132,627	3.4%
Target Practice	287,050	0.5%	Power Boating	671,518	1.1%
OHV - Dunebuggy	282,989	0.5%	Swimming/Water Play	513,449	0.8%
Environmental Education	243,645	0.4%	Personal Watercraft	214,711	0.3%
Gather Non-Commercial Products	235,282	0.4%	Water Skiing	125,096	0.2%
Viewing - Interpretive Exhibit	212,605	0.3%	Boat Launching	120,019	0.2%
Staging/Comfort Stop	122,707	0.2%	Hunting - Waterfowl	85,865	0.1%
Vending/Services	106,004	0.2%	Canoe/Kayaking	65,687	0.1%
Bicycling - Road	100,605	0.2%	Hot Springs/Soaking	26,693	<0.1%
Rock Crawling-4WD	85,302	0.1%	Wind Surfing	8,007	<0.1%
Archery	83,780	0.1%	Fishing - Salt Water	1,692	<0.1%
Pack Trips	80,034	0.1%	Wake Boarding	1,205	<0.1%
Viewing - Wild Horses	70,352	0.1%	Diving/Snorkling	721	<0.1%
Spectator Sport	64,623	0.1%	Other Motor Water Sport/Event	36	<0.1%
Specialized Sport/Event (Non-Motor)	58,779	<0.1%	<b>Snow and Ice-Based Activities</b>		
Interpretive Programs	43,820	<0.1%	Snowmobiling	234,565	0.4%
Trapping	42,780	<0.1%	Skiing - Downhill	93,490	0.1%
Hunting - Other	40,936	<0.1%	Skiing - Cross Country	91,065	0.1%
Wilderness Therapeutic Program-Youth	39,544	<0.1%	Snow Play - General	50,930	<0.1%
Viewing - Wildflowers	36,417	<0.1%	Snowboarding	26,261	<0.1%
Caving	33,017	<0.1%	Dog Mushing	13,961	<0.1%
Racing - Auto Track	32,855	<0.1%	Snowshoeing	7,823	<0.1%
Hang-Gliding/Parasailing	32,240	<0.1%	Ski Joring	4,144	<0.1%
Therapeutic Programs	27,861	<0.1%	Other Winter OHV	1,430	<0.1%
Other Motor Land Sport/Event	23,843	<0.1%	Ice Skating	1,013	<0.1%
Land/Sand Sailing	20,419	<0.1%	Ice Climbing	22	<0.1%
Re-enactment Events/Tours	19,659	<0.1%			
Racing - OHV Cars/Trucks/Buggies	18,173	<0.1%	<b>Total: All Activities</b>	<b>62,521,756</b>	<b>100%</b>

Source: ECONorthwest, based on data from the BLM.  
 Note: These totals represent both quiet and non-quiet recreation.

Table 4. Quiet and Non-Quiet Recreation Activities on BLM Lands

Quiet Recreation Activities:		
Archery	Rockhounding/Mineral Collection	Skiing - Cross Country
Astronomy	Row/Float/Raft	Fishing - Freshwater
Boat Launching (Non-Motorized)	Sand Boarding	Fishing - Salt Water
Camping	Skating - Roller/Inline	Gather Non-Commercial Products
Caving	Ski Joring	Hiking/Walking/Running
Climbing - Mountain/Rock	Snow Play - General	Racing - Foot
Diving/Snorkeling	Snowshoeing	Horseback Riding
Dog Mushing	Social Gathering/Festival/Concert	Racing - Horse Endurance
Dog Trials	Specialized Sport/Event (Non-Motor)	Hunting - Big Game
Environmental Education	Spectator Sport	Hunting - Other
Geocaching	Staging/Comfort Stop	Hunting - Small Game
Golf	Swimming/Water Play	Hunting - Upland Bird
Hang-Gliding/Parasailing	Target Practice	Hunting - Waterfowl
Hot Springs/Soaking	Therapeutic Programs	Nature Study
Ice Climbing	Trapping	Canoe/Kayaking
Ice Skating	Vending/Services	Picnicking
Interpretive Programs	Viewing - Other	Cabin Use
Land/Sand Sailing	Viewing -Interpretive Exhibit	Viewing - Scenery/Landscapes
Orienteering	Wilderness Therapeutic Program-Youth	Viewing - Wildflowers
Pack Trips	Wind Surfing	Viewing - Wild Horses
Photography	Backpacking	Viewing - Wildlife
Racing - Adventure	Bicycling - Mountain	Viewing - Cultural Sites
Re-enactment Events/Tours	Bicycling - Road	
Recreation Inquiry	Racing - Bicycle	
Non-Quiet Recreational Activities:		
Boat Launching (Motorized)	Skiing - Downhill	OHV - Motorcycle
Driving For Pleasure	Other Motor Water Sport/Event	OHV - Ultralight
High Speed Time Trials	Personal Watercraft	Other Winter OHV
Model Airplane/Rocket	Power Boating	Racing - ATV
Other Motor Land Sport/Event	Wake Boarding	Racing - OHV Cars/Trucks/Buggies
Racing - Auto Track	Water Skiing	Rock Crawling-4WD
Racing - Motorcycle	OHV - ATV	Snowmobiling
Snowboarding	OHV - Cars/Trucks/SUVs	
Trials-Motorcycle	OHV - Dunebuggy	

Source: ECONorthwest, based on data from BLM and The Pew Charitable Trusts.

Table 5. BLM Recreation Visitation, Western U.S. and Alaska (2014)

State	Total Visitor Days	Total Quiet Recreation Visitor Days	% Visitor Days in Quiet Recreation
Alaska	709,840	352,456	50%
Arizona	13,467,967	8,519,796	63%
California	8,491,861	4,574,130	54%
Colorado	8,399,143	4,652,499	55%
Idaho	4,362,842	2,695,221	62%
Montana	4,258,656	2,591,097	61%
Nevada	5,188,722	2,724,866	53%
New Mexico	2,811,286	1,299,372	46%
Oregon	7,145,578	4,200,466	59%
Utah	5,034,447	2,889,873	57%
Washington	540,308	363,630	67%
Wyoming	2,111,106	1,222,167	58%
<b>Total</b>	<b>62,521,756</b>	<b>36,085,572</b>	<b>58%</b>

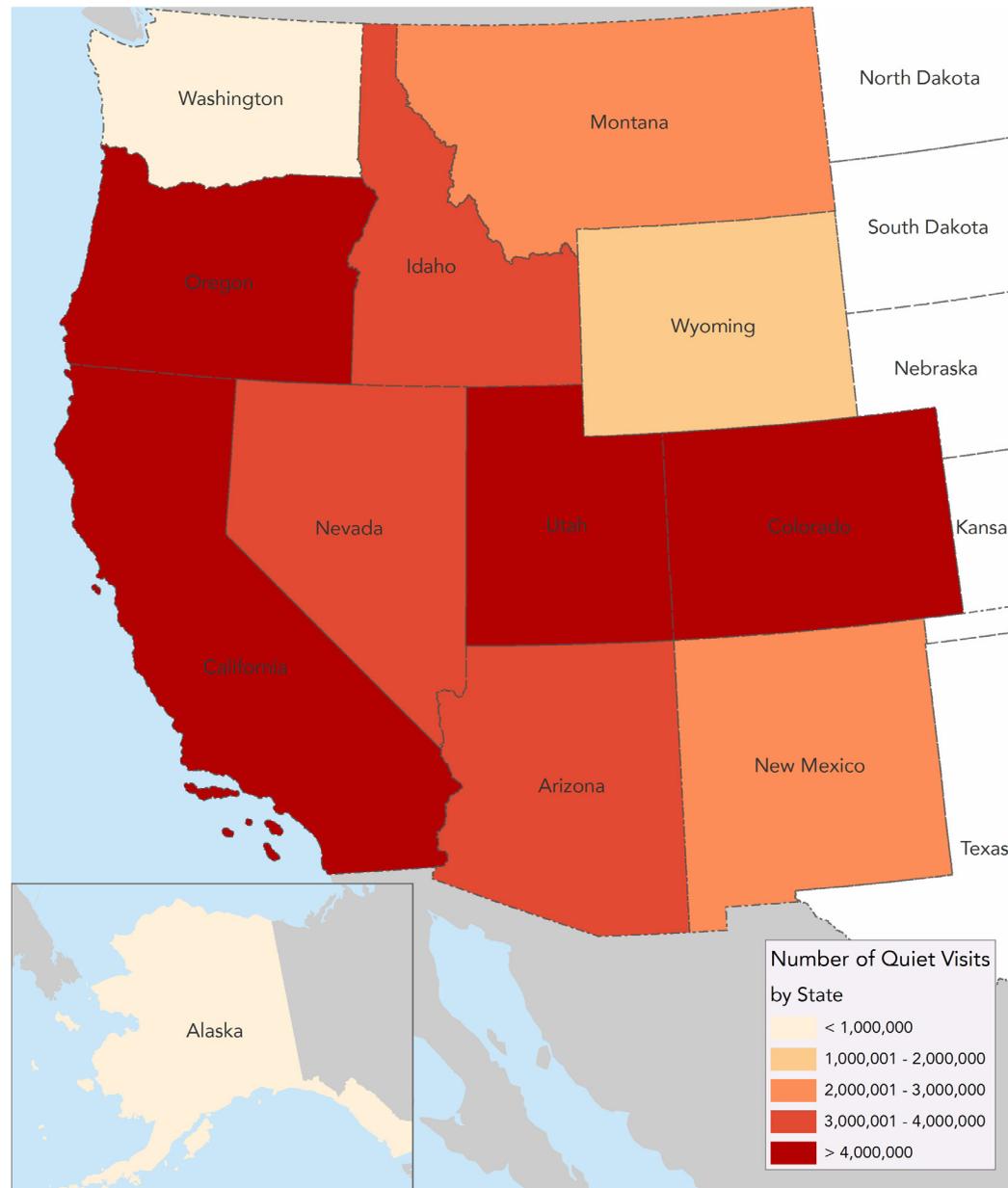
Source: ECONorthwest, based on data from the BLM.

Overall, we calculate that quiet recreation activities accounted for approximately 58 percent of all visitor days to BLM lands in the western U.S. and Alaska.

We also calculate the number of quiet recreation visits. We use the term “quiet recreation visits” to refer to trips (of any length) to BLM lands for the primary purpose of engaging in quiet recreation activities. As we describe in more detail in the next section, our calculations of the spending associated with quiet recreation rely on the number of quiet recreation *visits* as an input.<sup>17</sup>

In contrast to the data on visitor days, the BLM data on recreation visits is not sorted by activity. That is, the visit data show only the total number of visits per BLM region and per state, and they do not provide any description of the specific activities on these visits. Therefore, to estimate the number of visits associated with quiet recreation activities, we utilized data from the National Visitor Use Monitoring (NVUM) Program. The NVUM is an extensive survey effort of the U.S. Forest Service. The NVUM data provide the missing links between recreation activities and visits for visitors to National Forest lands. In keeping with other researchers from the BLM and elsewhere, we find the extensive NVUM data useful for evaluating visitation on BLM lands. Specifically, we analyze the BLM recreation data in light of more detailed NVUM data on the characteristics of recreational visits.

Figure 2. Quiet Visits to BLM Lands, Western U.S. and Alaska (2014)



Source: ECONorthwest, based on data from the BLM.

<sup>17</sup> The spending data we use are available for visits, not visitor days.

We use the NVUM data to help allocate the BLM activity data to the BLM visit data. In doing so, we are then able to utilize activity-specific spending information. For details on the specific methods we used to calculate the number of quiet recreation visits from the BLM participation and visit data, see Appendix A.

Figure 2 and Table 6 show the results of our calculations. Of the 60.8 million visits to BLM lands in the western U.S. and Alaska in 2014, we calculate that 38.5 million visits (63 percent) were quiet recreation visits. Other studies of outdoor recreation across the U.S. have also found that more than half of all outdoor recreation visits are for quiet or non-motorized recreation activities.<sup>18</sup> Our findings show that California, Oregon, and Colorado had the highest number of quiet recreation visits, at approximately 4.9 million each. Utah had approximately 4.4 million quiet visits.

### SPENDING ON QUIET RECREATION VISITS TO BLM LANDS

As visitors recreate on BLM lands, they also contribute to local economies through their local purchases. Each visit involves, on average, expenditures on food, fuel, and other goods and services. Research shows that a share of those expenditures occurs in communities

**Table 6. Quiet Visits to BLM Lands, Western U.S. and Alaska (2014)**

State	Total Visits	Total Quiet Recreation Visits	% Visits in Quiet Recreation
Alaska	712,827	540,129	76%
Arizona	4,860,374	3,494,887	72%
California	8,209,825	4,914,479	60%
Colorado	7,535,553	4,906,629	65%
Idaho	6,034,645	3,877,127	64%
Montana	4,937,443	2,941,586	60%
Nevada	7,219,759	3,909,908	54%
New Mexico	3,384,757	2,291,897	68%
Oregon	7,519,405	4,914,446	65%
Utah	6,953,934	4,414,879	63%
Washington	563,682	412,829	73%
Wyoming	2,915,080	1,879,617	64%
<b>Total</b>	<b>60,847,284</b>	<b>38,498,413</b>	<b>63%</b>

Source: ECONorthwest, based on data from the BLM.

within 50 miles of the recreation site. These expenditures support local incomes, jobs, and other economic activity.<sup>19</sup>

To estimate the money spent by people participating in quiet recreation on BLM lands, we rely again on the extensive study of recreation and spending called the National Visitor Use Monitoring Program (NVUM), which is the survey-based effort of the U.S. Forest Service. The BLM itself uses NVUM data to estimate recreation spending related to the use of BLM lands.

NVUM produces data describing the average spending for recreation trips as well as the average spending for activity-specific recreation trips. We rely on the activity-specific “spending profiles” for our analysis. They reflect that different recreational pursuits involve different types and levels of expenditures.<sup>20</sup>

NVUM prepares three principal “spending profiles” representing “low,” “average,” and “high” spending levels for each activity-specific trip. These profiles describe the amount of money that a group of visitors traveling together

<sup>18</sup> See, for example, Southwick Associates. 2012. *The Outdoor Recreation Economy: Technical Report on Methods and Findings*. August 31. (Prepared for the Outdoor Industry Association). The activities included, however, as “quiet” or “non-motorized” recreation vary somewhat from study to study.

<sup>19</sup> See, for example, E.M. White, J.M. Bowker, A.E. Askew, L.L. Langner, J.R. Arnold, and D.B. English. 2014. *Federal Outdoor Recreation Trends: Effects on Economic Opportunities*. National Center for Natural Resources Economic Research (NCRNER) Working Paper Number 1.

<sup>20</sup> E.M. White and D.J. Stynes. 2010. *Updated Spending Profiles for National Forest Recreation Visitors by Activity*. Joint Venture Agreement between the USDA Forest Service Pacific Northwest Research Station and Oregon State University. #10-JV-11261955-018. November.

spends per trip within 50 miles of the recreation area. Public lands draw visitors from both near and far. On average, visits by people living near the sites differ in many ways from visits by people living farther away. Although they may visit more frequently, local visitors tend to spend less time and money on each visit.

In addition, some recreation activities involve higher expenditures than others. Furthermore, the kinds of goods or services purchased differ across the activities. We use these activity-specific spending profiles in our analysis of the overall spending associated with quiet recreation activities on BLM lands.<sup>21</sup>

Table 7 shows the spending profile for “nature-related activities,” which is one of the twelve activity-specific spending profiles from NVUM. The spending profiles identify the total trip spending, within 50 miles of the recreation site, for a party of visitors. Each spending profile is divided into different types of recreational visitors: local and non-local visitors, visitors making day trips or visitors spending the night. The spending in each profile is split further into specific categories of goods and services (lodging, food, fuel, fees, sporting goods, souvenirs, etc.) reflecting the average pattern of expenditures reported by visitors. These profiles are all based on extensive surveys of visitors to public lands.<sup>22</sup>

**Table 7. Spending Profile for Nature-Related Activities (2007 dollars)**

	Non-Local		Local	
	Day	OVN	Day	OVN
Low	\$56	\$269	\$36	\$182
Average	\$65	\$473	\$37	\$195
High	\$90	\$826	\$42	\$247

Source: E.M. White and D.J. Stynes. 2010. *Updated Spending Profiles for National Forest Recreation Visitors by Activity*. Joint Venture Agreement between the USDA Forest Service Pacific Northwest Research Station and Oregon State University. #10-JV-11261955-018. November.

Note: all values rounded to nearest dollar  
 Non-Local day trips: nonlocal residents on day trips to the national forest  
 Non-Local OVN: nonlocal residents staying overnight  
 Local day trips: local residents on day trips to the national forest  
 Local OVN: local residents staying overnight

We use spatial analysis to identify the appropriate spending profile (low, average, high) for each of the BLM regions in our analysis. We do this by identifying the national forest closest to each BLM region. (Based on the NVUM work, each national forest is classified into one of the three spending profiles.) We use the activity-specific profile for the forest nearest to each BLM region.<sup>23</sup> We also rely on NVUM data on average party sizes to convert the number of individual visits to the number of party visits.

Finally, we adjust the portion of the NVUM spending profiles reflecting entrance fees. Rather than use the NVUM estimates, which reflect fees to access forest lands, we use data on BLM recreational fee collections.<sup>24</sup> For each state, we include fees based on the percentage of overall visits that we include in our analysis as quiet recreation visits.

Table 8 shows the results of our spending analysis for each state. It shows that, in 2014, visitors engaged in quiet recreation on BLM

<sup>21</sup> NVUM produces 12 activity-specific spending profiles. We follow the method used by other researchers to condense the list of recreational activities into the spending profiles.

<sup>22</sup> E.M. White and D.J. Stynes. 2010. *Updated Spending Profiles for National Forest Recreation Visitors by Activity*. Joint Venture Agreement between the USDA Forest Service Pacific Northwest Research Station and Oregon State University. #10-JV-11261955-018. November.

<sup>23</sup> In some instances, the nearest forest is in a neighboring state.

<sup>24</sup> We substitute the BLM fee data for the NVUM (National Forest) fee data because a higher percentage of USFS sites require fees. See, for example, U.S. Department of the Interior and U.S. Department of Agriculture. 2012. *Triennial Report to Congress: Implementation of the Federal Lands Recreation Enhancement Act*. May.

**Table 8. Total Direct Spending on Quiet Recreation Visits, within 50 miles of the Recreation Site, by State (2014)**

State	Quiet Visits	Total Expenditures
Alaska	540,129	\$41,799,797
Arizona	3,494,887	\$154,159,300
California	4,914,479	\$243,938,853
Colorado	4,906,629	\$274,546,789
Idaho	3,877,127	\$188,894,382
Montana	2,941,586	\$141,157,533
Nevada	3,909,908	\$167,768,408
New Mexico	2,291,897	\$143,112,404
Oregon	4,914,446	\$185,212,502
Utah	4,414,879	\$202,628,174
Washington	412,829	\$18,249,686
Wyoming	1,879,617	\$102,296,238
<b>Total</b>	<b>38,498,413</b>	<b>\$1,863,764,066</b>

Source: ECONorthwest.

lands in the western U.S. and Alaska spent over \$1.8 billion within 50 miles of the recreation sites. Total trip spending, particularly for non-local visitors, would likely have been higher. Colorado had the largest amount of expenditures at \$274 million, followed by California at \$243 million, Utah at \$202 million, and Idaho at \$188 million.<sup>25</sup>

The total expenditures we report here include nonlocal, local, and “non-primary purpose” visitors. The total spending by non-local visitors was \$1.276 billion. Visitors from the local area spent \$521.6 million, and we include spending of \$65.9 million from visitors for whom recreation on BLM land was not the primary purpose of their trip.<sup>26</sup>

<sup>25</sup> The states with the highest number of visits do not necessarily have the highest spending totals for a number of reasons. First, the distribution of quiet activities varies state to state. Second, some activities are associated with higher levels of spending than other activities. Third, some regions are generally associated with higher levels of recreation spending than others. Refer to our discussion of NVUM spending profiles earlier in this section for more information.

<sup>26</sup> Spending by visitors whose primary purpose was not to recreate on the BLM lands would sometimes be excluded from economic contribution analyses. In keeping with the approach of other BLM analyses, we do not exclude them completely, but we report their spending at the level of local day visitors. (Personal communication with BLM economist, 2015. See also E.M. White and D.J. Stynes. 2010. Updated Spending Profiles for National Forest Recreation Visitors by Activity. Joint Venture Agreement between the USDA Forest Service Pacific Northwest Research Station and Oregon State University. #10-JV-11261955-018. November.)

## ECONOMIC CONTRIBUTION FROM QUIET RECREATION

Depending on the purpose of an analysis, economists can use different economic measures to describe the effects of an activity such as spending associated with quiet recreation on BLM lands. One approach is to describe the contribution that an activity made to an economy. This approach consists of calculating an activity’s “economic contribution” or “economic significance,” which represents the share of an economy related to that activity at a given point in time. The economic contribution differs from what is often described as the “economic impact” of an activity. The economic impact is commonly described as the impact from “new money” brought into an economy, which is typically identified as the local expenditures by non-local visitors. In this report we focus on the first measure—the economic contribution—but we also include the data necessary to describe the subset of economic effects referred to as the economic impacts.

Economists have developed several approaches to measure the economic effects of an activity, including the technique used for this analysis, called input-output modeling. Input-output models are mathematical representations of the economy that describe how different economic sectors are linked to one another.

Input-output models work by tracing how spending associated with an activity such as recreation on public lands circulates through a local and state economy. The initial, direct spending starts a flow of spending in the region, circulating around and around, with each successive round becoming smaller because of leakages out of the local and state economy.

Special modeling techniques have been developed to estimate the empirical relationships between sectors of an economy. These techniques use a combination of national technological relationships and state- and county-level measures of economic activity. They have been packaged into the IMPLAN (for IMPact Analysis for PLANning) modeling software. ECONW used this modeling system for this analysis.

The total economic effects of recreation spending consist of direct, indirect, and induced effects. In this case, direct effects are the activities of visitors making purchases within 50 miles of BLM land in each of the 12 states. Indirect effects are the result of activity by suppliers to the directly- and indirectly-affected businesses. Induced effects are the result of purchases of goods and services by employees and proprietors in directly- and indirectly-affected businesses. Total economic effects are reported as the sum of direct, indirect, and induced effects.

These three types of economic effects (direct, indirect, and induced) can be measured in terms of labor income, value added, economic output, and jobs resulting from expenditures associated with quiet recreational activities on BLM-managed lands.

- **Labor Income**, or employee compensation, is a subset of output. This includes workers' wages and salaries, as well as other benefits such as health, disability, and life insurance, retirement payments, and non-cash compensation.
- **Value Added** consists of output minus the value of intermediate consumption; it is a measure of the contribution to GDP made by an individual producer, industry or sector.
- **Output** represents the value of goods and services produced, and is the broadest measure of economic activity.
- **Jobs** are measured in terms of full-year-equivalents (FYE). One FYE job equals work over twelve months in a given industry. For example, two jobs that last six months each count as one FYE job. FYE are not equivalent to full-time equivalents. That is, a job can be full-time or part-time, seasonal or permanent. A part-time job that lasts for a year would equal one FYE. Job effects are for one year of normal operation.

Table 9 shows the economic contribution that spending associated with quiet recreation on BLM lands (in 12 western states) made to the

**Table 9. Economic Contribution to US Economy by Quiet-Recreation Visitors to BLM Lands in 12 States (2014)**

	Direct	Indirect	Induced	Total
<b>Local Visitors</b>				
Output	\$348,040,435	\$183,517,105	\$199,065,372	\$730,622,912
Compensation	\$109,632,983	\$43,614,134	\$53,133,545	\$206,380,663
Value-Added	\$200,962,550	\$91,220,617	\$111,055,605	\$403,238,771
Jobs	3,836	1,019	1,382	6,236
<b>Non-Local Visitors</b>				
Output	\$964,103,568	\$527,206,917	\$522,648,872	\$2,013,959,357
Compensation	\$296,259,323	\$131,397,623	\$139,418,987	\$567,075,932
Value-Added	\$526,459,988	\$265,830,102	\$292,312,020	\$1,084,602,110
Jobs	11,020	3,112	3,646	17,778
<b>Non-Primary Purpose Visitors</b>				
Output	\$46,066,532	\$23,177,833	\$24,784,829	\$94,029,195
Compensation	\$14,327,829	\$5,364,686	\$6,641,693	\$26,334,209
Value-Added	\$26,222,117	\$11,442,778	\$13,884,700	\$51,549,596
Jobs	517	125	173	815
<b>Total</b>				
Output	\$1,358,210,536	\$733,901,855	\$746,499,073	\$2,838,611,464
Compensation	\$420,220,135	\$180,376,444	\$199,194,225	\$799,790,804
Value-Added	\$753,644,655	\$368,493,498	\$417,252,325	\$1,539,390,477
Jobs	15,373	4,256	5,201	24,830

Source: ECONorthwest.

U.S. economy in 2014.<sup>27</sup> Visitors' expenditures of \$1.86 billion (Table 8) in communities within 50 miles of BLM lands supported approximately \$800 million in personal income, \$1.54 billion in value-added, nearly 25,000 jobs, and economic

output of over \$2.8 billion in the U.S. economy. Because our analysis is based on spending within 50 miles of the sites, rather than total spending associated with the trips, it likely underestimates the total economic contribution.

<sup>27</sup> We are interested in both the in-state effects from quiet recreation on BLM lands within each state as well as the overall national effect. Our national totals are calculated as the sum of the effects in each of the twelve states plus the spillovers from each state. We use this approach, rather than running a single national model, because it has the advantage of using state-specific economic data for each of the twelve states.



Image courtesy of Kurt Kuznicki

Our analysis focuses on the economic activity associated with quiet recreation on BLM lands, so we include the spending from all categories of visitors. To understand the relative contribution among the different groups of visitors, we break out the results separately. Table 9 shows the direct, indirect, induced, and total effects for three different groups of visitors: local, non-local, and non-primary-purpose (those for whom recreation was not the primary purpose of their visit).

Table 10 shows the economic effects by state. For a given state, we calculate the economic effects materializing within that state from the initial expenditures associated with quiet recreation on BLM lands within that state. We calculate separately the “leakages” from each state that contribute to the rest of the U.S. economy. For example, expenditures for groceries or sporting goods purchased in Colorado on a quiet recreation trip to BLM lands in Colorado but manufactured in Ohio had economic effects in at least Colorado and Ohio. The Ohio effects are included in the “Rest of U.S.” line item.

The results in Table 10 represent the economic contributions within each of the 12 states stemming from expenditures related to quiet recreation on BLM lands within each state as well as the sum of the effects from

Table 10. Total Economic Contribution, by Type and State

State	Personal Income	Value-Added	Output	Jobs
Alaska	\$13,047,680	\$26,768,957	\$46,516,994	453
Arizona	\$52,254,621	\$98,123,159	\$161,537,710	1,586
California	\$97,234,807	\$195,256,350	\$328,824,571	2,605
Colorado	\$113,277,534	\$213,120,829	\$371,508,449	3,412
Idaho	\$56,361,157	\$106,250,329	\$199,482,311	2,368
Montana	\$41,467,631	\$76,681,176	\$164,120,009	1,797
Nevada	\$58,833,459	\$106,289,090	\$171,532,725	1,611
New Mexico	\$44,182,973	\$85,284,997	\$172,523,741	1,712
Oregon	\$69,911,677	\$120,995,097	\$213,877,186	2,322
Utah	\$71,915,709	\$139,300,609	\$269,625,505	2,529
Washington	\$6,017,332	\$12,964,920	\$22,163,770	182
Wyoming	\$27,902,444	\$59,305,920	\$112,388,133	1,074
Rest of U.S.	\$147,383,780	\$299,049,043	\$604,510,359	3,179
<b>Total</b>	<b>\$799,790,804</b>	<b>\$1,539,390,477</b>	<b>\$2,838,611,464</b>	<b>24,830</b>

Source: ECONorthwest.

Note: Totals may not sum due to rounding.

Note: Individual state totals include the in-state effects from quiet recreation on BLM lands within each state. Spillovers from one state to any other state are included in the “Rest of U.S.” line item. These spillovers include spillovers from any of the twelve states to other states (such as Ohio). The “Rest of U.S.” line item also includes spillovers from any of the twelve states into any of the other twelve states. That is, the Oregon totals include economic activity stemming from quiet recreation on BLM lands in only Oregon. Any economic activity in Oregon stemming from BLM lands in other states is included in the “Rest of U.S.” line item.

that spending that leaked into the rest of the U.S. economy. For example, the Idaho totals include only the amounts associated with the BLM lands in Idaho. Any spillovers into Idaho from BLM lands in other states are included in the “Rest of U.S.” category. This approach isolates the in-state effects of BLM lands for each individual state. Colorado leads the list of states, with approximately \$113 million in personal income, \$213 million in value-added, and \$371 million in total output. Next is California, with approximately \$97 million in personal income, \$195 million in value-added, and over \$328 million in total output.

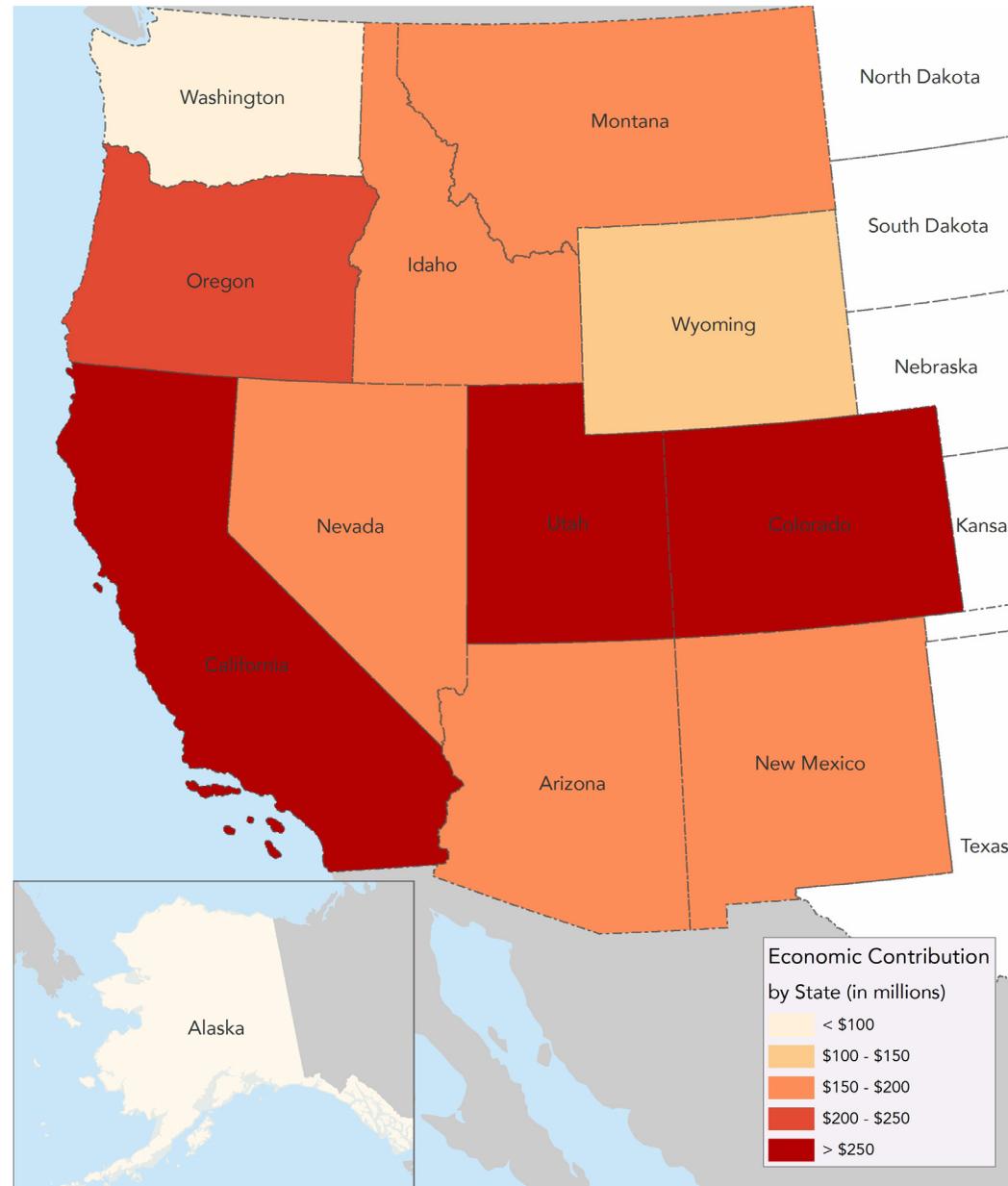
Figure 3 shows the geographic distribution of the total economic output from quiet recreation on BLM-managed lands by state. Figure 4 shows each state's economic output on a scale that also shows each state's total quiet recreation visits to BLM lands and the percent of all visits that were quiet.

**COMPARISON OF RESULTS**

Our analysis focused solely on the economic contribution from quiet recreation. Thus, these results alone do not provide the means to evaluate the economic contribution of quiet recreation relative to all recreation. The BLM, however, produces annual estimates of the total economic contribution from all recreation on BLM lands. As Table 11 shows, for 2014, the BLM estimated that recreation on BLM lands generated \$5.476 billion in total economic output.<sup>28</sup> Our estimate of the \$2.8 billion in total economic output from quiet recreation in the western U.S. represents 52 percent of the BLM national total (which includes the eastern U.S.) for all recreation. In addition, the BLM estimated that all recreation on BLM lands supported 41,664 jobs in 2014. Our estimate of the 24,830 jobs supported by quiet recreation represents 60 percent of the BLM national total. These results suggest that quiet recreation in the western U.S. and Alaska accounts for more than half of the economic contribution from recreation on all BLM lands across the U.S.

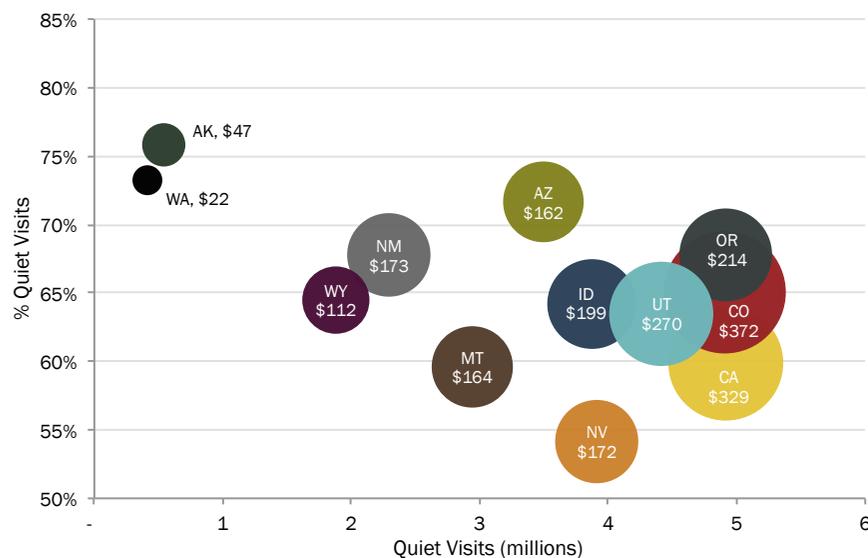
<sup>28</sup> Bureau of Land Management. 2015. *The BLM: A Sound Investment for America 2015*. Available online at [http://www.blm.gov/style/medialib/blm/wo/Communications\\_Directorate/public\\_affairs/socioeconomic.Par.81563.File.dat/SoundInvest020514.pdf](http://www.blm.gov/style/medialib/blm/wo/Communications_Directorate/public_affairs/socioeconomic.Par.81563.File.dat/SoundInvest020514.pdf)

**Figure 3. Total Economic Output from Quiet Recreation on BLM-Managed Lands, by State**



Source: ECONorthwest.

**Figure 4. Quiet Visits, Percent Quiet Visits, and Total Economic Output (in million dollars)**



Source: ECONorthwest.

Note: Circles are sized according to each state’s estimated economic output.

**Table II. Comparison of Quiet Recreation Results with BLM Total Recreation Estimates**

	Economic Contribution	Jobs
BLM Estimate (National Total)	\$5.476 billion	41,664
Quiet Recreation Analysis (12 states and spillovers)	\$2.8 billion	24,830
Quiet Recreation as % of BLM Totals	52 percent	60 percent
BLM Estimate (12 states, no spillovers)	\$3.83 billion	35,770
Quiet Recreation Analysis (12 states, no spillovers)	\$2.23 billion	21,650
Quiet Recreation as % of BLM Totals	58 percent	61 percent

Source: ECONorthwest with data from BLM.

The BLM national totals include some relatively minor economic activity stemming from BLM lands located in other states. Because of this, it is not possible to make a precise comparison between our total results and the totals for only the same regions from the BLM data. The closest comparison is for the total of the effects in the twelve states in our analysis (but excluding the spillover effects from these states into other states). For these twelve states, our results show total economic output of \$2.23 billion, which is 58 percent of the BLM total of \$3.83 billion for the same twelve states. For jobs, our twelve-state total is 21,650 jobs, which is 61 percent of the 35,770 jobs BLM estimated for those states.<sup>29</sup> These results suggest that quiet recreation accounts for roughly 58 percent of the economic output from recreation on BLM lands in the western U.S. and Alaska.

Our primary analysis of quiet recreation visitation shows that 63 percent of trips to BLM lands were for quiet recreation activities. Although we did not estimate directly the relative contribution from quiet and non-quiet recreation, the combination of visitation and output results indicate that the spending and economic contribution from individual quiet recreation trips may be lower than from non-quiet recreation trips. However, quiet recreation accounts for more total recreation activity on BLM lands, and the overall spending and the economic contribution from quiet recreation trips are higher than for non-quiet recreation trips. These trends are similar to those reported by other researchers for outdoor recreation as a whole. For example, research for the Outdoor Industry Association shows that non-motorized recreation is associated with lower per-trip spending but more trips and higher overall trip-spending than motorized recreation across the U.S.<sup>30</sup>

<sup>29</sup> Our results are less comparable to BLM’s at the individual state level because BLM’s state-level estimates are based on national spending averages rather than activity-specific spending profiles that account for differences in spending levels from location to location. These differences even out at the national level.

<sup>30</sup> The OIA study also estimated non-trip spending on equipment and accessories, which are not addressed in our analysis. Motorized recreation involved higher expenditures in these categories. After accounting for these expenditures, however, non-motorized recreation still generated higher expenditures overall. Southwick Associates. 2012. *The Outdoor Recreation Economy: Technical Report on Methods and Findings*. Prepared for the Outdoor Industry Association. August 31.

## SUMMARY

In this report, we present the results of our analysis of the overall economic contribution of quiet recreation on BLM-managed lands in 11 western states and Alaska.

Based on available recreation data from the BLM and from the extensive NVUM study of the characteristics of recreational visits to other public lands, we estimate that quiet recreation accounted for over 36 million visitor days (58 percent of all visitor days) and over 38 million visits (63 percent of all visits) to BLM lands in the western U.S. and Alaska in 2014.

Quiet recreation visits resulted in an estimated \$1.86 billion in expenditures in communities near the BLM lands in 2014. These expenditures rippled through local communities and beyond, resulting in an overall economic contribution of over \$2.8 billion in economic output, approximately \$1.54 billion in value-added, \$800 million in personal income, and nearly 25,000 jobs.

Our analysis drew from existing data sources and methods and extended those methods in a first attempt to quantify one aspect of the economic effects of quiet recreation on BLM lands.

Our analysis presents the 2014 economic effects from spending on quiet recreation trips alone. The estimates in this study include spending that occurred within 50 miles of the BLM recreation sites. They do not include, for example, spending on gear or equipment that occurred prior to the trip or outside of 50 miles



*Image courtesy of Sam Cox, BLM*

of the BLM sites. They also do not capture the overall economic value to recreational visitors or others who benefit from the range of goods and services that may be associated with or supported by quiet recreation opportunities.

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## APPENDIX A. TECHNICAL APPENDIX

In this Technical Appendix we describe the methods we use to calculate the amount of quiet recreation on BLM lands in 2014. We also describe how we apply activity-specific spending profiles to each recreation category.

### OVERVIEW

The National Visitor Use Monitoring (NVUM) program is an extensive study of recreation-related visitation and spending in national forests.<sup>31</sup> For this analysis, we use methods similar to those used by other researchers, including BLM analysts, who rely on NVUM data to estimate recreation-related spending on BLM lands. We also adapt methods and data used to evaluate national forest recreation to explicitly account for activity-specific visitation and spending levels, geographic variation in spending, and cross-participation with non-quiet activities on BLM lands.

### SPENDING PROFILES

Based on its extensive survey data, NVUM provides spending profiles for 12 different groups of recreational activities. Because trips generally involve multiple recreational activities, the NVUM profiles are organized by the “primary

purpose” of the trip. For example, the “camping” spending profile represents the average trip spending for trips with the primary purpose of camping—and it includes spending associated with any other activities that may have occurred on the trips. In addition, each profile represents the spending of a group of visitors for their trip,<sup>32</sup> and it captures only the spending within 50 miles of the recreation site.

### PRIMARY-PURPOSE TRIPS

The NVUM spending profiles identify average spending amounts for activity-specific (primary purpose) trips. To apply these spending data to BLM recreation data, we estimated the number of quiet recreation trips to BLM lands. The BLM recreation data readily lend themselves to calculating the number of quiet recreation visitor days as opposed to trips.<sup>33</sup> We do not have a means to translate visitor days into trips. Rather, we use the BLM data on participants by activity and overall number of trips. Based on these data we developed a method to estimate the number of trips, by primary activity. Our method is also based on analysis and application of additional NVUM data.

NVUM data include the number of recreational visits, the suite of activities that visitors participate in on those visits, and the main or primary activity of the visits.<sup>34</sup> From these data,

we calculate across all the NVUM sites the proportion of visitors participating in a given activity and the number who report that activity as their primary or motivating activity. We use the data from the NVUM sites to estimate the relationship between participants and primary activities at the BLM sites.

In general, areas with higher participation in a given activity also tend to show a higher proportion of visitors reporting that activity as their main activity. For example, NVUM data show a tight relationship between participation and primary purpose visits for downhill skiing. Figure A - 1 shows that areas with more visitors participating in downhill skiing also have more visitors reporting that downhill skiing was the primary purpose of their trip. The data on wildlife viewing, in contrast, indicate that it has a relatively low occurrence as the primary activity, even at sites with higher levels of participation in wildlife viewing.

Using the NVUM data, we estimated the relationship between activity participation levels and the incidence of the activity as the main trip activity for all of the recreation activities.<sup>35</sup> Using the BLM data on activity participation for each BLM region and our analysis of the NVUM primary-purpose data, we estimate the distribution of “primary purpose” activities across BLM visits.

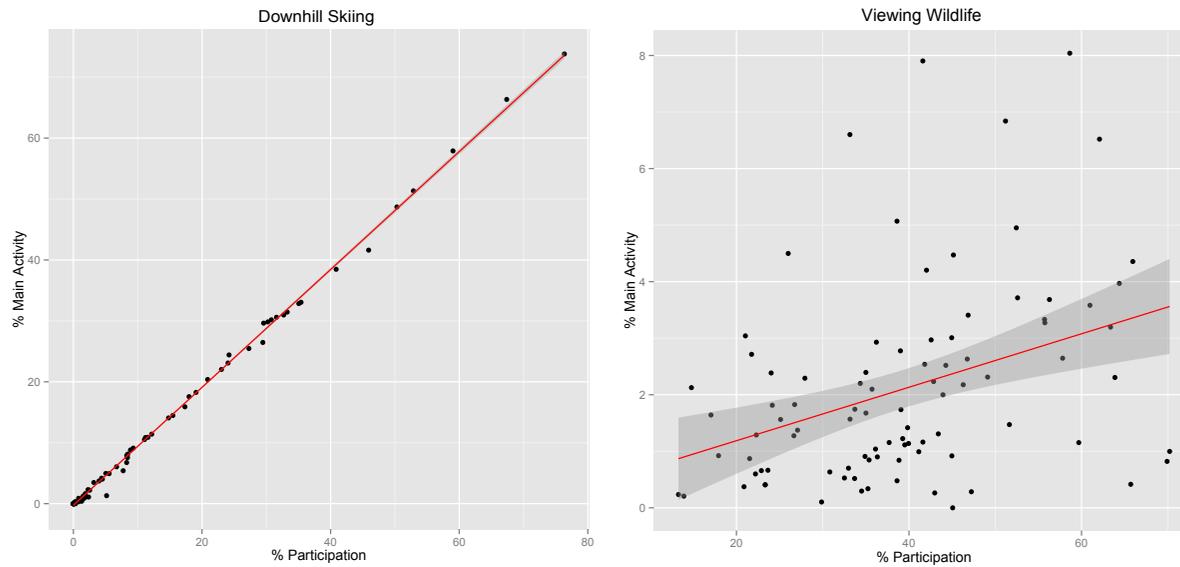
<sup>31</sup> USDA Forest Service. 2015. National Visitor Use Monitoring Version 2.1 - Round 2 (2005 – 2009) Data.

<sup>32</sup> The average group or “party” size is based on data from NVUM (E.M. White and D.J. Stynes. 2010. Updated Spending Profiles for National Forest Recreation Visitors by Activity. Joint Venture Agreement between the USDA Forest Service Pacific Northwest Research Station and Oregon State University. #10-JV-11261955-018.).

<sup>33</sup> Bureau of Land Management. 2015. FY 2014 Recreation Management Information System Data.

<sup>34</sup> We controlled for the small percentage of visitors that reported multiple primary activities by proportionally reducing participation in each primary activity to equal the total number of visitors (when the overall participation in primary activities exceeded 100 percent of visitors). This scaling process does not affect relative proportions of quiet and non-quiet activity participation.

Figure A - I. Activity Participation and Primary Activities



Source: ECONorthwest based on NVUM Round 2 (2005-2009) data  
 Notes: Each point represents a national forest that recorded visitation associated with a given activity.

**CROSS PARTICIPATION**

Using NVUM data, we also evaluate the extent to which trips with a particular quiet recreation activity as its main purpose also involve a non-quiet activity.<sup>36</sup> We exclude all quiet recreation trips that also include non-quiet activities. Table A-1 shows the percentage of trips, by quiet recreation activity, that we estimate involved a non-quiet activity. For example, based on NVUM data for a sample of forests near BLM lands, we estimate that nearly 40 percent of hunting trips involve participation in a motorized activity.

We exclude those trips from our analysis of quiet recreation. The exception is that we do not exclude trips if the only non-quiet activity is “driving for pleasure,” as that may simply reflect the transportation to and from the site.

Table A - I. Cross-Participation Between Quiet and Non-Quiet Activities

NVUM Activity	Motorized Participation
Hunting	39%
Primitive Camping	33%
Nature Study	20%
Fishing	20%
Viewing Wildlife	15%
Other activity	12%
Developed Camping	8%
Non-motorized Water	8%
Picnic	6%
Cross-country Skiing	5%
Gathering Forest Products	4%
Hiking / Walking	2%
Horseback Riding	1%
Backpacking	1%
Viewing Nature	1%
Bicycling	1%

Source: ECONorthwest, based on Pers. Comm. Eric White, USFS, 2015.

<sup>35</sup> All relationships are statistically significant at the 0.01 level.

<sup>36</sup> Lindberg, K. and J. Loomis. 2009. *Economic impacts of non-motorized (quiet) recreation on the Wallowa-Whitman National Forest*, Central Oregon Recreation Services.

**RECREATIONAL CATEGORIES**

Because there are more recreational activities than spending profiles, we rely on an approach used by other researchers to match the longer list of recreational activities to a representative spending profile. First, we match each of the BLM (RMIS) recreational activities to its closest NVUM recreational activity. Second, we match the NVUM recreational activities to the 12 NVUM spending profiles using the same groupings used by other researchers.<sup>37</sup> Table A-2 shows the crosswalks between these categories.

For two of the BLM recreational categories—camping and boat launching—we divided the categories each into two different NVUM recreational activities. For camping, we split the data into the NVUM categories of developed camping and primitive camping. Expenditure data indicate that these two activities have distinct spending patterns. We based the split on estimates of the amount of camping that occurred in special and extensive recreation management areas (BLM management designations that reflect developed/high use areas and more primitive/dispersed use areas, respectively) at each BLM office.<sup>38</sup> For boat launching (which could be associated with either motorized or non-motorized boating), we split participation in this category based on the overall balance between motorized and non-motorized boating activities recorded at each applicable BLM office.

We do not estimate spending for the non-quiet activities. For non-motorized activities in the BLM data that have no clearly applicable spending profile (e.g., archery and wind surfing), we erred on the side of underestimating the spending and we applied the 'hiking/biking' spending profile, which is the lowest spending estimate.

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<sup>37</sup> E.M. White and D.J. Stynes. 2010. *Updated Spending Profiles for National Forest Recreation Visitors by Activity*. Joint Venture Agreement between the USDA Forest Service Pacific Northwest Research Station and Oregon State University. #10-JV-11261955-018. November. p. 27.

<sup>38</sup> Bureau of Land Management. 2008. *Bay Proposed Resource Management Plan and Final Environmental Impact Statement - Appendix C Recreation Area Designations: Special Recreation Management Areas (SRMA) and Extensive Recreation Management Areas (ERMA)*.

Table A - 2. BLM/NVUM/Forest Service Spending Profile Crosswalks

BLM Activities	Corresponding NVUM Activities	Corresponding FS Activity Spending Profiles	RMIS Activities	Corresponding NVUM Activities	Corresponding FS Activity Spending Profiles
Archery	Some Other Activity	Hiking/biking	Trapping	Hunting	Hunting
Astronomy	Viewing Natural Features	Nature-related	Trials-Motorcycle	OHV Use	OHV-use
Boat Launching (Original)	-	-	Vending/Services	Some Other Activity	Hiking/biking
Boat Launching (Motorized Estimate)	Motorized Water Activities	OHV-use	Viewing - Other	Viewing Natural Features	Nature-related
Boat Launching (Non-Motorized Estimate)	Non-motorized Water	Hiking/biking	Viewing - Interpretive Exhibit	Nature Center Activities	Nature-related
Camping (Original)	-	-	Wilderness Therapeutic Program-Youth	Viewing Natural Features	Nature-related
Camping (Developed Estimate)	Developed Camping	Developed camping	Wind Surfing	Non-motorized Water	Hiking/biking
Camping (Primitive Estimate)	Primitive Camping	Prim. camping/backpacking	Backpacking	Backpacking	Prim. camping/backpacking
Caving	Some Other Activity	Hiking/biking	Bicycling - Mountain	Bicycling	Hiking/biking
Climbing - Mountain/Rock	Some Other Activity	Hiking/biking	Bicycling - Road	Bicycling	Hiking/biking
Diving/Snorkling	Non-motorized Water	Hiking/biking	Racing - Bicycle	Bicycling	Hiking/biking
Dog Mushing	Cross-country Skiing	Cross-country skiing	Skiing - Cross Country	Cross-country Skiing	Cross-country skiing
Dog Trials	Hunting	Hunting	Skiing - Downhill	Downhill Skiing	Downhill skiing
Driving For Pleasure	Driving for Pleasure	Driving	Fishing - Freshwater	Fishing	Fishing
Environmental Education	Nature Center Activities	Nature-related	Fishing - Salt Water	Fishing	Fishing
Geocaching	Hiking / Walking	Hiking/biking	Gather Non-Commercial Products	Gathering Forest Products	Nature-related
Golf	Some Other Activity	Hiking/biking	Hiking/Walking/Running	Hiking / Walking	Hiking/biking
Hang-Gliding/Parasailing	Some Other Activity	Hiking/biking	Racing - Foot	Hiking / Walking	Hiking/biking
High Speed Time Trials	OHV Use	OHV-use	Horseback Riding	Horseback Riding	Hiking/biking
Hot Springs/Soaking	Non-motorized Water	Hiking/biking	Racing - Horse Endurance	Horseback Riding	Hiking/biking
Ice Climbing	Some Other Activity	Hiking/biking	Hunting - Big Game	Hunting	Hunting
Ice Skating	Some Other Activity	Hiking/biking	Hunting - Other	Hunting	Hunting
Interpretive Programs	Nature Center Activities	Nature-related	Hunting - Small Game	Hunting	Hunting
Land/Sand Sailing	Some Other Activity	Hiking/biking	Hunting - Upland Bird	Hunting	Hunting
Model Airplane/Rocket	OHV-use	OHV-use	Hunting - Waterfowl	Hunting	Hunting
Orienteering	Hiking / Walking	Hiking/biking	Other Motor Water Sport/Event	Motorized Water Activities	OHV-use
Other Motor Land Sport/Event	OHV Use	OHV-use	Personal Watercraft	Motorized Water Activities	OHV-use
Pack Trips	Primitive Camping	Prim. camping/backpacking	Power Boating	Motorized Water Activities	OHV-use
Photography	Viewing Natural Features	Nature-related	Wake Boarding	Motorized Water Activities	OHV-use
Racing - Adventure	Hiking / Walking	Hiking/biking	Water Skiing	Motorized Water Activities	OHV-use
Racing - Auto Track	OHV Use	OHV-use	Nature Study	Nature Study	Nature-related
Racing - Motorcycle	OHV Use	OHV-use	Canoe/Kayaking	Non-motorized Water	Hiking/biking
Re-enactment Events/Tours	Visiting Historic Sites	Nature-related	OHV - ATV	OHV Use	OHV-use
Recreation Inquiry	Nature Study	Nature-related	OHV - Cars/Trucks/SUVs	OHV Use	OHV-use
Rockhounding/Mineral Collection	Gathering Forest Products	Nature-related	OHV - Dunebuggy	OHV Use	OHV-use
Row/Float/Raft	Non-motorized Water	Hiking/biking	OHV - Motorcycle	OHV Use	OHV-use
Sand Boarding	Some Other Activity	Hiking/biking	OHV - Ultralight	OHV Use	OHV-use
Skating - Roller/Inline	Some Other Activity	Hiking/biking	Other Winter OHV	Snowmobiling	Snowmobile
Ski Joring	Cross-country Skiing	Cross-country skiing	Racing - ATV	OHV Use	OHV-use
Snow Play - General	Hiking / Walking	Hiking/biking	Racing - OHV Cars/Trucks/Buggies	OHV Use	OHV-use
Snowboarding	Downhill Skiing	Downhill skiing	Rock Crawling-4WD	OHV Use	OHV-use
Snowshoeing	Cross-country Skiing	Cross-country skiing	Picnicking	Picnicking	Hiking/biking
Social Gathering/Festival/Concert	Nature Center Activities	Nature-related	Cabin Use	Developed Camping	Developed camping
Specialized Sport/Event (Non-Motor)	Some Other Activity	Hiking/biking	Snowmobiling	Snowmobiling	Snowmobile
Spectator Sport	Nature Center Activities	Nature-related	Viewing - Scenery/Landscapes	Viewing Natural Features	Nature-related
Staging/Comfort Stop	Driving for Pleasure	Driving	Viewing - Wildflowers	Viewing Natural Features	Nature-related
Swimming/Water Play	Non-motorized Water	Hiking/biking	Viewing - Wild Horses	Viewing Wildlife	Nature-related
Target Practice	Some Other Activity	Hiking/biking	Viewing - Wildlife	Viewing Wildlife	Nature-related
Therapeutic Programs	Viewing Natural Features	Nature-related	Viewing - Cultural Sites	Visiting Historic Sites	Nature-related

Source: ECONorthwest based on information from the BLM and Forest Service.

## APPENDIX B. STATE-LEVEL ECONOMIC CONTRIBUTION DETAIL

Table B - 1. Economic Contribution, State-Level Detail (2014)

	Direct	Indirect	Induced	Total
<b>Alaska</b>				
Output	\$30,742,449	\$9,199,897	\$6,574,648	\$46,516,994
Personal Income	\$8,898,193	\$2,306,784	\$1,842,703	\$13,047,680
Value-Added	\$17,390,970	\$5,322,783	\$4,055,204	\$26,768,957
Jobs	348	55	50	453
<b>Arizona</b>				
Output	\$95,138,588	\$27,291,702	\$39,107,421	\$161,537,710
Personal Income	\$32,491,917	\$8,257,070	\$11,505,633	\$52,254,621
Value-Added	\$58,378,807	\$15,917,017	\$23,827,336	\$98,123,159
Jobs	1,071	211	304	1,586
<b>California</b>				
Output	\$191,874,744	\$62,552,388	\$74,397,439	\$328,824,571
Personal Income	\$57,654,925	\$17,817,337	\$21,762,545	\$97,234,807
Value-Added	\$113,548,858	\$36,371,127	\$45,336,365	\$195,256,350
Jobs	1,759	351	495	2,605
<b>Colorado</b>				
Output	\$208,982,865	\$76,587,941	\$85,937,643	\$371,508,449
Personal Income	\$66,661,019	\$21,933,301	\$24,683,214	\$113,277,534
Value-Added	\$118,643,268	\$43,625,658	\$50,851,904	\$213,120,829
Jobs	2,277	493	642	3,412
<b>Idaho</b>				
Output	\$121,941,067	\$37,911,078	\$39,630,166	\$199,482,311
Personal Income	\$36,423,506	\$9,771,879	\$10,165,771	\$56,361,157
Value-Added	\$64,762,794	\$19,305,956	\$22,181,579	\$106,250,329
Jobs	1,680	331	357	2,368
<b>Montana</b>				
Output	\$102,528,257	\$33,771,019	\$27,820,733	\$164,120,009
Personal Income	\$27,281,226	\$7,199,009	\$6,987,396	\$41,467,631
Value-Added	\$46,618,610	\$15,030,759	\$15,031,807	\$76,681,176
Jobs	1,302	249	246	1,797
<b>Nevada</b>				
Output	\$111,119,507	\$25,922,507	\$34,490,711	\$171,532,725
Personal Income	\$41,266,495	\$7,788,799	\$9,778,165	\$58,833,459
Value-Added	\$69,836,251	\$14,892,478	\$21,560,361	\$106,289,090
Jobs	1,158	194	259	1,611
<b>New Mexico</b>				
Output	\$103,818,883	\$39,203,799	\$29,501,060	\$172,523,741
Personal Income	\$27,888,826	\$8,640,487	\$7,653,661	\$44,182,973
Value-Added	\$49,448,139	\$19,131,010	\$16,705,849	\$85,284,997
Jobs	1,221	251	240	1,712
<b>Oregon</b>				
Output	\$121,580,698	\$41,921,236	\$50,375,252	\$213,877,186
Personal Income	\$42,483,789	\$12,517,601	\$14,910,287	\$69,911,677
Value-Added	\$68,270,111	\$23,389,445	\$29,335,542	\$120,995,097
Jobs	1,574	326	422	2,322
<b>Utah</b>				
Output	\$154,721,070	\$58,064,531	\$56,839,903	\$269,625,505
Personal Income	\$42,891,300	\$14,239,832	\$14,784,577	\$71,915,709
Value-Added	\$79,204,810	\$28,822,225	\$31,273,575	\$139,300,609
Jobs	1,680	396	453	2,529
<b>Washington</b>				
Output	\$14,000,982	\$3,797,498	\$4,365,289	\$22,163,770
Personal Income	\$3,787,022	\$1,014,063	\$1,216,247	\$6,017,332
Value-Added	\$8,238,214	\$2,077,362	\$2,649,344	\$12,964,920
Jobs	129	22	30	182
<b>Wyoming</b>				
Output	\$73,744,793	\$22,973,554	\$15,669,786	\$112,388,133
Personal Income	\$19,552,139	\$4,646,042	\$3,704,263	\$27,902,444
Value-Added	\$37,841,937	\$12,331,131	\$9,132,852	\$59,305,920
Jobs	812	138	124	1,074
<b>Total</b>				
Output	\$1,358,210,536	\$733,901,855	\$746,499,073	\$2,838,611,464
Personal Income	\$420,220,135	\$180,376,444	\$199,194,225	\$799,790,804
Value-Added	\$753,644,655	\$368,493,498	\$417,252,325	\$1,539,390,477
Jobs	15,373	4256	5201	24,830

Note: Total is higher than the sum of the 12 states because it includes the effects of interstate economic activity stemming from expenditures in each of the 12 states.

