Economic Outcomes from the U.S. Forest Service Eastside Strategy

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Executive summary

The USDA Forest Service (Forest Service) has implemented several initiatives to increase the pace and scale of forest restoration on national forests east of the Cascade Mountains in Oregon and Washington. Collectively, these initiatives fall under the Eastside Restoration Strategy of the Pacific Northwest Region of the Forest Service. The early initiatives of the Eastside Strategy, beginning in late 2012/early 2013, focused primarily on eastern Oregon, with specific emphasis on the Blue Mountains region of northeastern Oregon through the creation of the Blue Mountains planning team and implementation of the Malheur 10-year stewardship contract. The Blue Mountains planning team is focused on developing new ways of doing business to complete National Environmental Policy Act planning over larger areas and with shorter timeframes. The 10-year stewardship contract is aimed at increasing restoration treatment on the Malheur National Forest and supporting improved economic conditions in Grant and Harney counties.

The Eastside Strategy complements, and partners with, Oregon's Federal Forest Health (FFH) Program. The FFH program seeks to increase the pace, scale, and quality of federal forest restoration by supporting collaborative capacity and developing new business models for state and federal partnership in managing federal forests. Activities in the first two years of the FFH Program (2013 – 2015) were focused on the Blue Mountains Region of northeastern Oregon. A companion report to this working paper describes the social and economic outcomes from the FFH Program.[1] The Oregon legislature again funded the FFH Program for the 2015-2017 State biennium.

In this working paper, we describe results from social and economic monitoring of the Forest Service's Eastside Strategy. We focus on eastern Oregon as a whole, the Blue Mountains region, and individual eastern Oregon national forests. We follow the social and economic monitoring plan,[2] which was developed in consultation with eastern Oregon forest collaborative members, regional nongovernmental organizations, Forest Service field and Pacific Northwest Regional Office personnel, and liaisons from State of Oregon natural resource agencies. In this monitoring effort, we address a set of 7 questions that contribute to understanding the

social and economic conditions in eastern Oregon counties, the economic outcomes from restoration on federal forests, how federal forest restoration activities influence business health, and the capacity of forest collaborative groups to contribute to accelerated restoration.

Key sources of information for this monitoring effort included federal databases on timber sales and restoration service contracting, economic models, and interviews with business owners, managers, and collaborative group members. We compared most monitoring results found for year 2014 to a baseline period which lasted from 2009 to 2013 for timber-related monitoring metrics and 2004 to 2013 for service-contract related monitoring metrics

Key results from this analysis include:

- Timber sale volumes from all eastern Oregon national forests combined increased 5 percent in 2014, over the baseline average from 2009 to 2013, to a total of 222 million board feet. Forest Service spending on restoration service contracts across all national forests combined increased to $18.5 million in 2014, a 1 percent increase from baseline average annual spending over the last decade. Despite those relatively flat changes, the 2014 values for timber sale volume and investment in service contracts for all eastern Oregon national forests combined were decidedly higher than what was seen in the previous 5 to 10 years.

- The majority (75 percent) of timber volume sold from eastern Oregon national forests in 2014 was purchased by eastern Oregon companies although local purchase rates were lower than in the prior several years (86 percent).

- Eastern Oregon businesses were awarded 41 percent of the value of service contracts offered on all eastern Oregon national forests combined in 2014. That share of contract value awarded to eastern Oregon businesses was the 4th lowest share of the prior decade and below the prior decade average of 46 percent.

- Federal forest restoration projects supported jobs within eastern Oregon. However the magnitude of jobs supported and patterns of change between the baseline comparison periods and year 2014 differed for areas within eastern Oregon and generally followed where the Forest Service had made targeted investments in restoration over the last several years.

    - Eastern Oregon as a whole: The forest restoration projects awarded in 2014 support will support 1,805 jobs. About half of those jobs are in the woods doing restoration work or in mills processing harvested timber. The remaining jobs are those supporting restoration work or selling goods and services to restoration workers, commonly referred to as the multiplier effect. Annual employment in eastern Oregon supported by forest restoration in 2014 was about 7 percent less than the annual average for 2009 to 2013. That decline traces to a reduced share of timber purchased by eastern Oregon buyers in 2014, a lower share of restoration service contract value awarded to eastern Oregon businesses in 2014, and a reduced share of the work awarded to eastern Oregon businesses being for technical services.

    - Blue Mountains region: Forest restoration projects on Blue Mountains national forests awarded in 2014 will support about 860 jobs in the Blue Mountains region. A little more than half of those jobs are either doing restoration work in the woods or processing harvested timber. The jobs supported by federal forest restoration in the Blue Mountains region in 2014 was 37 percent higher than the average number of jobs supported annually between 2009 and 2013.

    - Individual national forests: The numbers of jobs supported in local national forest communities by forest restoration projects varies widely. Over the five years prior to 2014, forest restoration on the Fremont-Winema, Deschutes, and Malheur national forests supported the greatest numbers of local national forest jobs (between 218 and 478 jobs

per year per forest). In 2014, the Deschutes, Umatilla, and Malheur national forests experienced an increase in the numbers of jobs supported by federal forest restoration, compared to the prior five years. For the first two, that increase happened because of a gain in jobs associated with timber harvest and milling activity that overcame a decline in jobs associated with service contracting. The Fremont-Winema and Ochoco national forests, each experienced an increase in jobs supported by timber harvesting and milling in 2014 that was negated by a decline in jobs supported by service contract work. Finally, the Wallowa-Whitman National Forest experienced a decline in 2014 in jobs associated with both timber harvest and milling and service contracting.

- Increases in economic outcomes and business health from forest restoration followed where the Forest Service has been making the greatest investments. The Blue Mountains region as a whole and the Malheur National Forest experienced positive changes in 2014 relative to patterns during the baseline comparison periods. Elsewhere within eastern Oregon, the outcomes in 2014 were more commonly flat to slightly declining compared to baseline conditions.

Implications for accelerated restoration:

- The types of restoration work contracted in eastern Oregon can influence whether businesses located in eastern Oregon are likely to be awarded restoration service contracts. The majority of labor-intensive work on eastern Oregon national forests is done by contractors located in southern Oregon or the Willamette Valley. Nevertheless, the vast majority of restoration service contract work in eastern Oregon is done by Oregon businesses. The ability of eastern Oregon contractors to access, and compete within, the Forest Service contracting system also influences the share of funding awarded to eastern Oregon contractors.

- To the extent that contributing to local national forest economies is a goal of federal forest restoration, the use of local benefit as a selection criterion in stewardship contracts, can influence the likelihood that restoration service contracts are awarded to businesses located in the communities immediately surrounding national forests. The Malheur 10-year stewardship contract provides a good example of how adoption of a local benefit criterion can influence who gets long-term stewardship contracts.

- The amount of timber sold and value of service contracts has had moderate variability from year to year for eastern Oregon as a whole and many individual national forests. Year to year variability in federal restoration activities in eastern Oregon can influence the likelihood of varying social and economic outcomes from year to year and make it difficult for businesses to make plans for investment and long-range strategy.

- Economic modeling and statements of business owners indicate that federal investments in accelerated restoration can improve business outlook and area employment.

- Regular communication between the Forest Service and businesses awarded long-term stewardship contracts, and adaptation as necessary, enhance partnerships and likely improves project outcomes. Communication can help ensure consistent understanding about needs and expectations of both parties. Adaptation may be needed in cases where actual conditions faced by the Forest Service or the contractor differ from what was anticipated.

The Eastside Restoration Strategy

The USDA Forest Service (Forest Service) has developed the Eastside Restoration Strategy[3] to accelerate federal forest restoration in eastern Oregon and Washington. This effort by the Pacific Northwest Region of the Forest Service, along with the State of Oregon's Federal Forest Health (FFH) Program, aims to increase the pace, scale, and quality of forest restoration on national forests. The ecological goal of forest restoration treatments, as part of the Eastside strategy, is to move national forests toward conditions that are intended to be more resilient to wildfire. At the same time, the Eastside Strategy hopes to contribute to improved social and economic conditions in rural communities by providing timber to local mills and restoration work to local businesses. This working paper focuses on the social and economic goals of the Eastside Strategy and is an assessment of how Forest Service restoration efforts have affected the economies and businesses of eastern Oregon, and the forest collaborative groups operating in eastern Oregon, in the recent past and in the first years of the Eastside Restoration Strategy.

The two facets of the Eastside Strategy that have received the most attention are the establishment of the Blue Mountains Interdisciplinary Planning Team and the Malheur National Forest 10-year stewardship contract, beginning in late 2012 and early 2013. The Blue Mountains planning team is funded by the Pacific Northwest Regional Office and is charged with using new efficiencies and a new way of doing business to complete National Environmental Policy Act (NEPA) planning for forest restoration over large landscape areas of the Blue Mountains. The first effort of the Blue Mountains team was NEPA analysis and documentation for the 100,000 acre Lower Joseph Creek Project on the Wallowa-Whitman National Forest. The team is currently working on NEPA analysis for the Blue Mountains Resiliency Project, a very large environmental analysis to include restoration activities on three of the national forests in the Blue Mountains of Oregon.

The Malheur 10-year stewardship contract was established in response to concern in late 2012 over the announced impending closure of the last operating sawmill in John Day, Oregon. The Regional Forester for the Pacific Northwest Region and the leadership of the Malheur National Forest agreed to establish a new, long-term plan for accelerating restoration on the national forest that would significantly increase the volume of timber harvested

and the amount of funding for restoration work on the Malheur National Forest. The timber harvesting and service contract work in support of the plan was packaged into a 10-year stewardship contract, which was awarded on a competitive basis to a local business in late 2013. In addition to those two efforts, the Pacific Northwest Regional Office also contributed to the Eastside Strategy through activities like increasing the number of employees on eastern Oregon national forests, prioritizing work that focused on accelerating the pace or scale of restoration, and testing efficiencies in harvest unit marking layout.

Implementing the Eastside Strategy and Oregon's FFH Program depends in part on the work of the eight forest collaborative groups operating in eastern Oregon. Collaboratives are comprised of diverse stakeholder individuals and groups who work together to develop shared vision and agreement on management of national forests. Through the Eastside Strategy, the Forest Service empowers its personnel to provide information to collaborative groups, participate in collaborative meetings, provide field tours of restoration projects, and receive input on projects from collaborative groups. Through the FFH Program, the State of Oregon also empowers state employees to attend collaborative group meetings and provide information. In addition, Oregon provides direct financial support to collaborative groups through a state grant program administered by the Oregon Watershed Enhancement Board.[4] The Eastside Strategy challenges collaborative groups to work through individual projects faster and to take on projects that have greater complexity.

Stakeholders, managers, and policy-makers are interested in how the efforts to accelerate restoration, and the Eastside Strategy specifically, are achieving desired social and economic outcomes. This working paper is an examination of social and economic conditions within the context of the Eastside Restoration Strategy. It complements a previous social and economic monitoring report specifically focused on Oregon's FFH Program.[5]

Economic monitoring of the Eastside Strategy

We reviewed a number of multi-party social and economic monitoring plans used in monitoring of other collaborative natural resource management projects[6] to develop an initial selection of socioeconomic monitoring questions and indicators for Eastside Restoration. From that initial set of questions, we undertook several iterative cycles of review and modification with eastern Oregon forest collaborative members, regional non-governmental organizations, Forest Service field and Regional Office personnel, and liaisons from State of Oregon natural resource agencies. The final seven monitoring questions addressed in this report were provided to the review groups and published in the final monitoring plan,[7] which also includes detailed methods to answer each question. The selected monitoring questions focus almost exclusively on economic monitoring; future monitoring should also consider more directly the social outcomes from accelerated restoration. The seven monitoring questions are:

1. What are the demographic and economic conditions and context in the eastern Oregon counties in which Eastside Restoration is occurring?
2. How much restoration work and timber sales are local and regional businesses capturing?
3. What are the employment effects, in the communities around national forests, from restoration contracting and timber sales?
4. What are the personal income effects, in the communities around national forests, from restoration contracting and timber sales?
5. What is the economic activity resulting, in the communities around national forests, from restoration contracting and timber sales?
6. What are the effects of Eastside Restoration on restoration contracting business health?
7. What is the capacity of collaborative groups to undertake accelerated restoration?

Question 7, related to collaborative capacity, is addressed in the FFH Program monitoring report[8] and those findings are not repeated in this working paper. Interested readers are encouraged to refer to that prior report.

The Forest Service's Eastside Restoration Strategy operates at several geographic levels. Some efforts are focused across all of eastern Oregon while others are focused on a collection of forests (e.g., the Blue Mountains Interdisciplinary Planning Team) or on individual forests (e.g., the Malheur 10-year stewardship contract). Our socioeconomic monitoring focuses on this same set of nested geographies: all of eastern Oregon, the Blue Mountains region, and individual national forests. For many questions, we provide monitoring results for all three of those geographies.

Forest restoration projects can include activities that focus on forest management to reduce stand densities as well as efforts, such as aspen restoration or culvert replacement, to improve broader ecosystem and watershed health. Restoration projects may be accomplished through a mix of timber sales, contracts for services performed by private businesses, work agreements with non-governmental organizations, and work performed by in-house Forest Service crews. In this report, we focus on social and economic outcomes from timber sales and service contracts (including those using stewardship authorities) with private businesses. The economic activity associated with federal employment in support of restoration and the work of non-governmental organizations is significant and in addition to the outcomes reported here.

The data sources and descriptions of economic models used to answer the monitoring questions are described in depth in the monitoring plan. Briefly, we relied on two key federal government databases to characterize timber sales and service contracts in support of restoration in eastern Oregon: the Timber Information Management System (TIMS) and the Federal Procurement Data System (FPDS). We used established Forest Service protocols, information from the economic impact model IMPLAN,[9] and the Forest Restoration and Utiliza-

tion Calculator[10] to estimate the economic outcomes from forest restoration. Economic impact analyses were done usign multi-county models constructed for each analyses area. In many cases, contracts or timber sales may be awarded in one year, but the work actually performed in subsequent years. This is especially true for timber sales, where the purchaser frequently has three years or more to harvest purchased timber. In this report, we count all the estimated jobs, income, and business output associated with a contract or timber sale in the year the contract or timber sale was awarded. The year to year changes in the economic outcomes from forest restoration may be smoother than what we depict in the results presented here. Because our focus in this report primarily is on trends over several years, with less focus on differences between individual years, this accounting issue is not expected to significantly influence our findings. Future analyses might also consider using harvest records (if available at an appropriate level of detail) or State of Oregon employment records to augment the approach taken here.

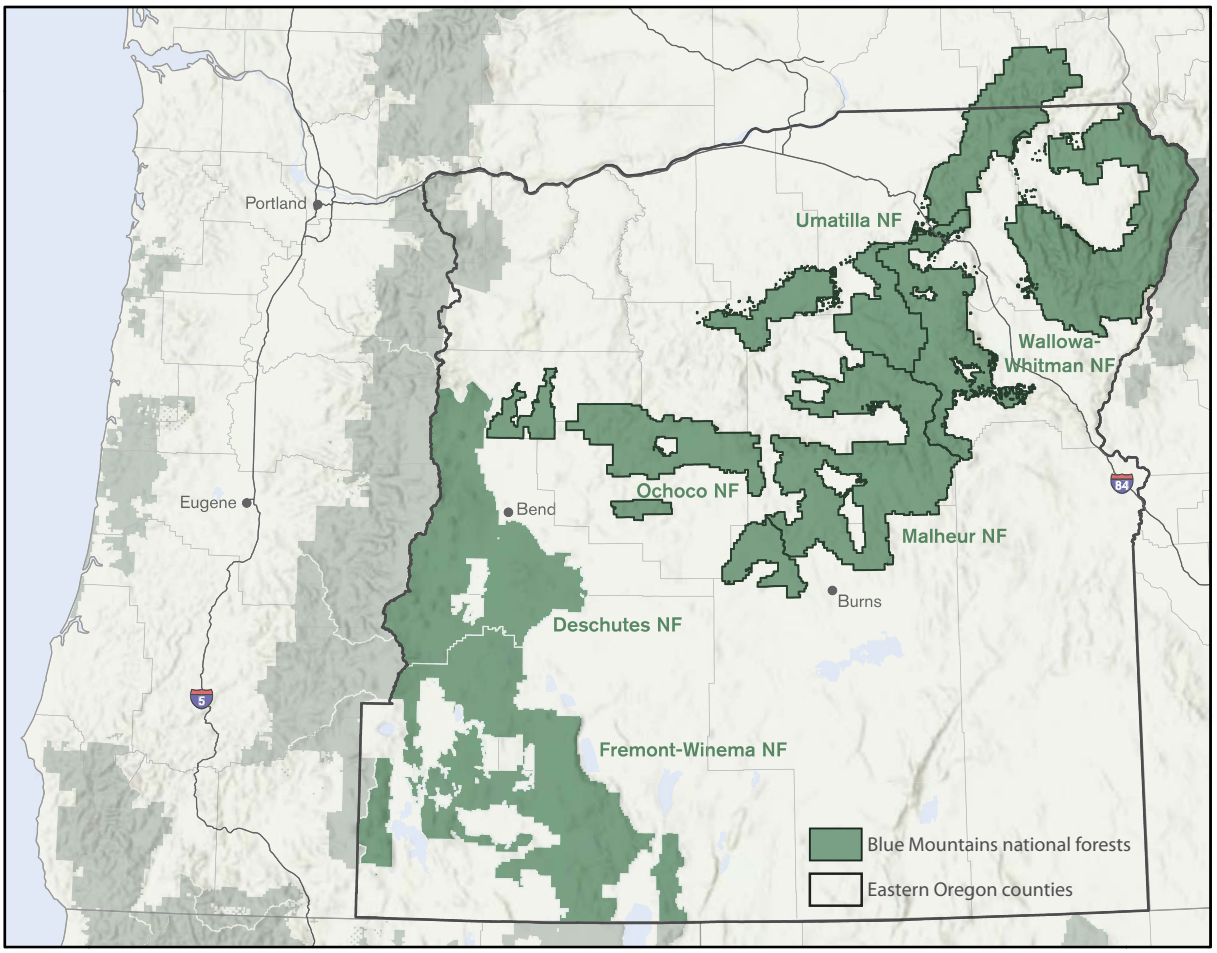
We can best understand the social and economic outcomes of accelerated restoration by placing those outcomes within context of the recent past. For most monitoring questions, we compared conditions in 2014 to those during a baseline comparison period. For analyses related to timber sales, we used 2009 to 2013 as the baseline. For analyses related to service contracts, the baseline comparison period was from 2004 to 2013. We were forced to use a shorter baseline period for timber sales because

at the time of this analysis we only had access to timber sale data from those years. The baseline period for service contracts include the year 2010, when there was a dramatic increase in spending because of funds in the American Recovery and Reinvestment Act (ARRA). In reporting the results, we try to highlight how ARRA influenced spending and generally exclude the ARRA year as an outlier when computing baseline averages.

Organization of this report

The remainder of this working paper is divided into sections addressing each of the social and economic monitoring questions listed above. Within most sections, results are described first for all of eastern Oregon and then for smaller geographies, such as the Blue Mountains region or for individual national forests (see Figure 1, below).

Figure 1 Eastern Oregon national forests and analysis areas for social and economic monitoring



What are the socioeconomic conditions and context in eastern Oregon counties?

Broad scale social and economic conditions are determined by a wide range of factors, many which trace to broader societal patterns and economic conditions that go beyond the local area or nearby region. It is unreasonable to expect that accelerated restoration efforts would single-handedly change these broad-scale conditions. However, understanding the social and economic conditions of eastern Oregon provides useful context for considering the social and economic outcomes from the Eastside Restoration Strategy.

The counties in eastern Oregon have diverse social and economic characteristics and have conditions that differ from statewide patterns in a variety of ways (see Table 1, below). Some counties are doing better than statewide patterns in two or more indicators, such as low unemployment and low poverty rate in Hood River County or low unemployment and growing school enrollment in Wasco County. However, several eastern Oregon counties (e.g., Harney, Grant, and Morrow) fall below statewide averages in every indicator considered.

Employment patterns in eastern Oregon are similar to patterns of employment elsewhere in the rural West. State, local, and federal employment is more common in eastern Oregon than it is across Oregon as a whole, which is influenced by employment patterns in the metropolitan areas in western Oregon

Table 1 Social and economic characteristics of eastern Oregon counties compared to statewide patterns

Geography	Unemployment rate (August 2014)	Percent of population in poverty (2007–11)	Percent of students eligible for free and reduced lunch (2013/14)	School enrollment change from previous year (2012/13 to 2013/14)	Median age (2007–11)
Oregon	7.2%	14.8%	53.7%	0.6%	38
Baker	8.6%	20.0%	47.91%	2.8%	48
Crook	10.2%	15.8%	57.0%	6.2%	45
Deschutes	8.1%	11.4%	46.8%	1.2%	40
Gilliam	6.3%	9.9%	56.8%	-0.7%	49
Grant	11.2%	15.8%	57.7%	0.0%	49
Harney	10.5%	20.5%	59.6%	-1.1%	46
Hood River	5.1%	10.0%	58.7%	0.0%	38
Jefferson	9.5%	20.2%	81.0%	1.1%	40
Klamath	9.9%	18.1%	68.6%	0.1%	42
Lake	9.5%	18.7%	51.8%	1.1%	47
Malheur	8.8%	22.6%	71.9%	0.8%	36
Morrow	7.8%	16.4%	71.2%	-1.8%	37
Sherman	6.4%	18.6%	57.7%	-2.0%	46
Umatilla	7.6%	14.8%	65.5%	0.1%	36
Union	7.4%	16.6%	56.1%	0.8%	40
Wallowa	9.0%	15.9%	36.8%	4.3%	50
Wasco	6.3%	19.4%	66.1%	1.9%	41
Wheeler	7.1%	12.6%	35.4%	2.9%	57

(Sources: Oregon Department of Human Services, Oregon Department of Education, and Oregon Rural Explorer)

(see Table 2). With the exception of only Deschutes and Hood River counties, workforces in eastern Oregon counties are more dependent on government employment than the statewide average pattern. In Grant, Harney, Lake, and Sherman counties, more than 40% of jobs are with the government. This monitoring report does not consider how government employment affects local economic well-being. The effects of government employment on local economies are over and above the economic outcomes detailed in this report.

The share of the workforce with jobs in the forestry and logging and wood products manufacturing sectors varies across eastern Oregon counties (see Table 2, below). Those counties with higher-than-statewide-average employment in the wood products manufacturing sector, e.g., Baker, Grant, Hood River, Klamath, Lake, Morrow, Wallowa, Wasco, are counties where a mill or processing facility remains in operation. Fewer counties have higher than the statewide-average of jobs in forestry and logging, with Grant, Wheeler, and Wallowa counties having the highest. Animal and crop production is a key employer in many eastern Oregon counties, especially in Baker, Hood River, Morrow, and Wasco counties. The financial and professional services sector is an important employer statewide, but typically much less so in eastern Oregon. Conversely, employment in retail trade and leisure and hospitality can be very important in many eastern Oregon counties. In Deschutes, Hood River, and Malheur counties, more than 30% of jobs are in those two sectors.

Table 2 Top employment sectors in in eastern Oregon and statewide, 2013

Geography	State and local government	Federal government	Forestry and logging	Wood product manufacturing	Animal production	Crop production	Financial and professional services	Retail trade	Leisure and hospitality
Oregon	14%	2%	1%	1%	< 1%	2%	17%	11%	10%
Baker	18%	4%	<1%	<10%	<15%	<15%	9%	14%	12%
Crook	16%	5%	1%	10%	1%	1%	7%	9%	9%
Deschutes	12%	1%	0%	1%	0%	<1%	16%	15%	16%
Gilliam	29%	1%	0%	0%	<2%	<2%	20%	6%	6%
Grant	30%	11%	<10%	<6%	<10%	<10%	8%	10%	7%
Harney	34%	11%	<1%	0%	4%	3%	6%	12%	10%
Hood River	9%	1%	<3%	<3%	<3%	18%	9%	16%	16%
Jefferson	37%	2%	<2%	<1%	<2%	5%	4%	8%	9%
Klamath	18%	4%	1%	5%	1%	3%	12%	13%	11%
Lake	32%	10%	<2%	9%	6%	6%	4%	9%	7%
Malheur	24%	2%	2%	7%	<2%	5%	5%	15%	16%
Morrow	16%	1%	<1%	<28%	7%	11%	6%	4%	3%
Sherman	25%	17%	<2%	0%	0%	<2%	2%	7%	16%
Umatilla	22%	2%	<1%	1%	1%	5%	9%	11%	8%
Union	20%	2%	1%	5%	<0.3%	2%	8%	15%	9%
Wallowa	23%	4%	4%	<4%	2%	2%	10%	11%	9%
Wasco	15%	2%	<1%	<6%	<1%	16%	7%	14%	10%
Wheeler	35%	2%	<6%	0%	10%	<6%	0%	12%	6%

(Source: State of Oregon Employment Department)

How much restoration work and timber sales are local and regional businesses capturing?

Across all of eastern Oregon, federal land agencies manage about 72 percent of forestlands. In western Oregon, where private forests are much more common, federal land agencies manage 52 percent of forestlands. In addition to providing a variety of ecosystem services, national forests serve as a source of leisure and enjoyment, work, and timber for sawmills. Forest Service employees, private businesses, nongovernmental organizations, and volunteers all participate in restoration on eastern Oregon national forests. In most of eastern Oregon, management on federal forests is the primary source of potential work and timber supply for private sector forestry workers and wood processing facilities. The amount of service contracts and timber sales awarded in a given year for restoration projects, and any patterns over time, provide insight into the magnitude of restoration work on federal forestland for the private sector, how it is changing, and how local businesses are affected.

Many stakeholders are interested in how local businesses fare in competing for restoration service contracts and timber sales—it was identified as a metric for this monitoring and is commonly identified metric in other social and economic monitoring efforts. That interest stems both from a desire to support the sustainability and growth of local businesses as well as a belief that local economic outcomes from restoration are greater when local businesses do the work.[11] In many cases, stakeholders and policy-makers support a restoration project with the expectation that the project will support local economic activity and improve the well-being and outlook of the local economy. Local capture is a key indicator in understanding how much restoration work is awarded to local businesses. Local capture is calculated in this working paper as the percentage of offered service contract value or timber volume that is awarded to businesses in the local area or region.

Eastern Oregon

Service contracts

Between 2004 and 2013, national forests in eastern Oregon awarded about $17.3 million per year ($2014) in service contracts to businesses for restoration work (see Figure 2, page 13). That average excludes the ARRA year of 2010, when $52.7 million ($2014) was awarded in service contracts. The amount awarded each year in service contracts has been fairly stable; typically ranging between $13.5 million and $20.1 million ($2014). Between 2004 and 2014, and excluding the 2010 ARRA year, 2013 was the second highest year of spending ($2014) for restoration service contracts ($20.1 million); 2014 was the fourth highest year of spending for restoration service contracts ($18.5 million). The $18.5 million awarded in service contracts in 2014 was also greater than the long term average for eastern Oregon.

Between 2004 and 2013, national forests in eastern Oregon awarded a total of more than $208 million ($2014) in service contracts for restoration work on national forests (see Table 3, page 13). More than 2,600 individual service contracts were awarded for restoration on eastern Oregon national forests between 2004 and 2013; often, those contracts were modified to include additional work and more funds (which is captured in our figures).

Nearly half of the service contract value during the 2004 to 2013 period, and the majority of the service contracts themselves, were for equipment-intensive work, such as machine thinning, grapple piling, road decommissioning, or other work where the primary expense was heavy equipment. Material-intensive work, including activities such as culvert replacement and road maintenance, accounted for about 25 percent of the funds awarded in service contracts. Technical work and labor-intensive work were the next most common types of restoration

Figure 2 Restoration contracts awarded to contractors from eastern Oregon and elsewhere, 2004–2014
(Source: Federal Procurement Data System records)

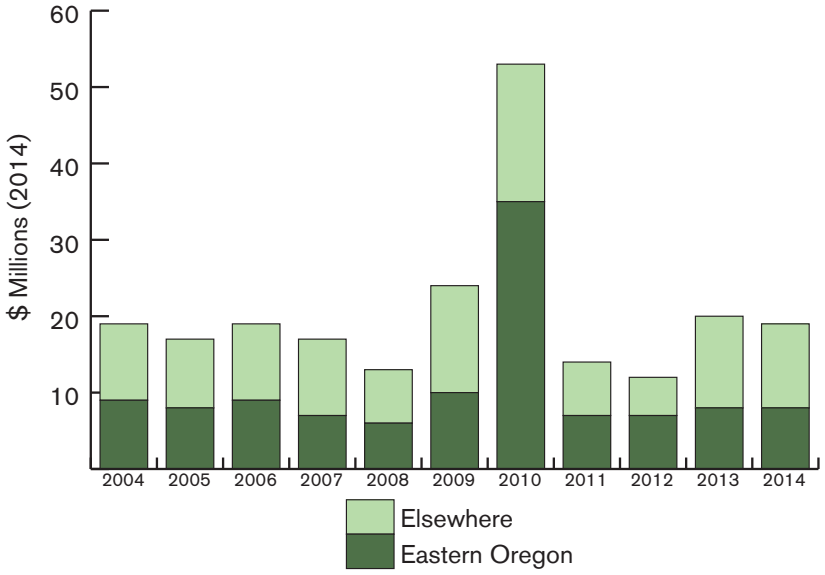


Table 3 Local capture by eastern Oregon contractors and worktype for service contracts 2004–2013

Worktype	Total contracts	Contracts with local contractors	Total contract value ($2014)	Contract value with local contractors ($2014)	Local capture (based on value)
Equipment	1,047	473	100,835,289	48,010,024	48%
Labor	461	137	28,503,543	6,329,143	23%
Material	426	352	52,287,683	35,116,526	68%
Professional	36	12	1,411,592	528,442	38%
Technical	670	351	25,311,807	15,870,516	63%
Grand total	2,640	1,325	208,349,914	105,854,652	51%

(Source: Federal Procurement Data System records)

* Note: table includes 2010 influenced by high spending from ARRA and a high rate of local capture

service contract work. Technical restoration work includes activities such as cultural and biological surveys, invasive weed treatment, stand exams, and timber marking. Labor-intensive work includes activities like hand thinning of small trees, hand piling stems and branches, prescribed burning, and tree planting.

Eastern Oregon businesses were awarded a little more than half of the value of service contracts during the baseline period (see Table 3, page 13). Most of the funds awarded to businesses outside of eastern Oregon went to businesses located in southern and western Oregon. Eastern Oregon businesses were most successful at competing for material-intensive, technical, and equipment-intensive work; they were least successful at obtaining service contracts for labor-intensive and professional work. In recent years, companies in southern Oregon and the Willamette Valley have been highly successful at competing and fulfilling contracts for labor-intensive work, so it is not surprising to find low rates of local capture for that worktype. Professional contracts are frequently for scientific studies, laboratory testing, or engineering and design and are often awarded to companies located in western Oregon or elsewhere in the Pacific Northwest.

In 2014, contractors in eastern Oregon were awarded 43 percent of the value of service contracts for restoration on eastern Oregon national forests (see Table 4, below). That is below the local capture average of 46 percent during the baseline years (excluding the ARRA year when local capture was 65 percent). One likely contributing factor to this decline, was that labor intensive work (which has the lowest rates of local capture) comprised a larger share of total contract value in 2014 (16 percent) compared to what it was during the baseline years (13 percent). However, in 2014, eastern Oregon contractors did not receive a majority of contract value for any type of restoration work (let alone labor-intensive work) and compared to patterns during the baseline years, contractors had much lower rates of capture for material-intensive and technical projects—historically their two highest local capture worktypes. That pattern may indicate that eastern Oregon restoration business capacity was insufficient to respond to the increased amount of restoration work offered or that local businesses had trouble accessing or competing in the Forest Service contracting system. There is some evidence for the latter based on a study of restoration contracting on the Fremont-Winema National Forest.[12]

Local contractors secured $8 million in service contracting funds in 2014, despite a reduction in local capture rates. Because the total investment in service contracts was higher in 2014 relative to the baseline, the amount of funding secured by eastern Oregon contractors in 2014 was slightly higher than the average annual funds secured during the baseline period ($7.9 million), excluding the ARRA year. In 2014, relative to the baseline period, the service contract funding captured by eastern Oregon businesses was more frequently for equipment-intensive work and less frequently for technical work (see table 3, page 13, and table 4, below).

Table 4 Local capture by eastern Oregon contractors and worktype for service contracts in 2014

Worktype	Total contracts	Contracts with local contractors	Total contract value ($2014)	Contract value with local contractors ($2014)	Local capture (based on value)
Equipment	82	34	11,960,535	5,864,820	49%
Labor	36	11	3,059,571	894,283	29%
Material	21	16	1,841,104	775,178	42%
Professional	1	0	22,279	0	0%
Technical	113	38	1,572,313	435,011	28%
Grand total	253	99	18,455,802	7,969,292	43%

(Source: Federal Procurement Data System records)

Timber sales

The average annual timber sale volume from eastern Oregon national forests during the 2009 to 2013 timber baseline period was about 211 million board feet per year (see Figure 3, below). In 2014, eastern Oregon national forests sold 222 million board feet of timber. That volume is 5 percent more than the annual average during the baseline and 29 percent more than was sold in 2013. The share of sold volume advertised as sawtimber has increased fairly steadily from year to year: from 66 percent in 2009 to 90 percent in 2014.

In total during the baseline period (2009 to 2013), national forests in eastern Oregon sold more than 1 billion board feet of timber. About 75 percent of that timber was advertised as sawtimber; the remaining was a mixture of non-sawtimber typically used for products such posts and poles, chips, or commercially-produced firewood. During the baseline period, purchasers located in eastern Oregon were competitively awarded most of the timber volume sold (about 182 million board feet per year) from eastern Oregon national forests (see Table 5, below). In particular, eastern Oregon buyers were able to purchase nearly all of the sawtimber sold.

Figure 3 Timber volume sold by advertised sawtimber and non-sawtimber volume, 2009–2014
(Source: Timber Information Management System records)

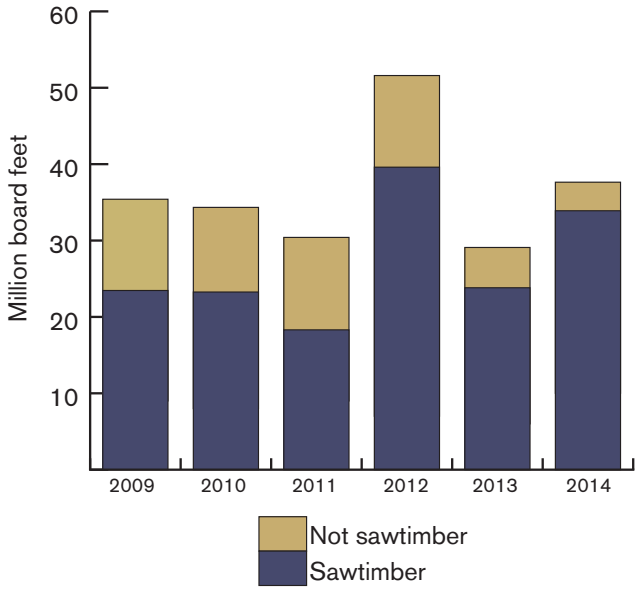


Table 5 Volume of timber sold from all eastern Oregon national forests and percent of volume purchased by eastern Oregon buyers, 2009–2013 and 2014

	2009–2013		2014	
	Average annual volume sold (mmbf)	Percent purchased by eastern Oregon buyers	Volume sold (mmbf)	Percent purchased by eastern Oregon buyers
Sawtimber	149.8	90%	200.1	79%
Not sawtimber	61.7	78%	22.0	65%
Total	211.4	86%	222.1	75%

(Source: Timber Information Management System records)

In 2014, buyers located in eastern Oregon purchased about ¾ of the timber (166 million board feet), and sawtimber, sold from eastern Oregon national forests. Although the total amount of timber sold in 2014 from eastern Oregon national forests was more than the baseline average, less total volume was purchased by eastern Oregon buyers in 2014 compared to patterns in the baseline period. Timber purchasers from outside the area hailed from southern and western Oregon, Washington, and Idaho. About 17 percent of the volume purchased by non-eastern-Oregon buyers in 2014 was purchased by out-of-state buyers purchasing timber on the Ochoco, Malheur, and Umatilla national forests.

National forest communities

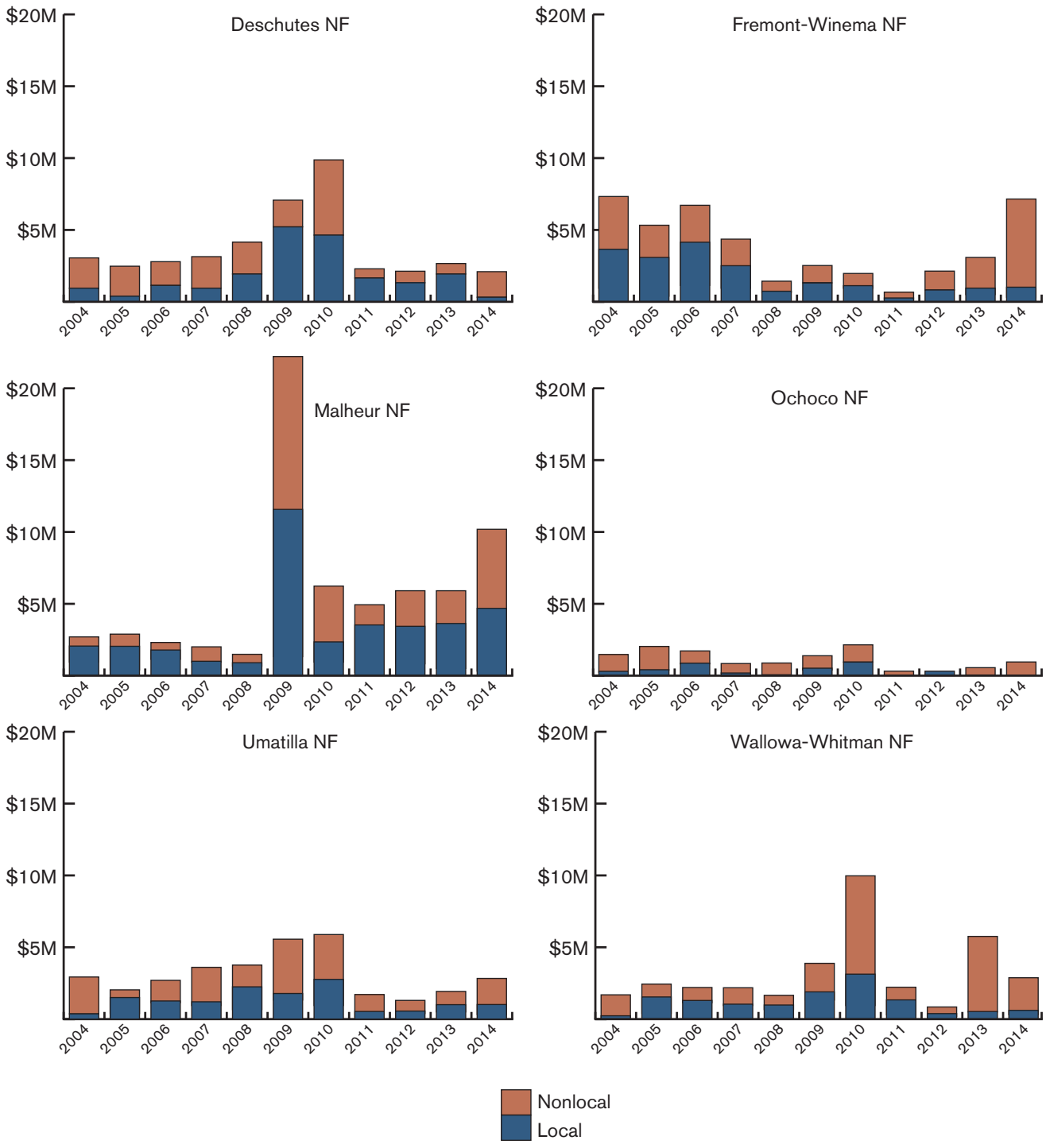
Service contracts

The eastern Oregon national forests differ in the amounts of money they have awarded in restoration service contracts and the patterns of awards over time (see Figure 4, page 17). The Malheur National Forest had the greatest total amount awarded in service contracts during the baseline period (2004–2013), but had a fair amount of variation from year to year. The Malheur National Forest experienced a marked increase in the amount of funds awarded in restoration service contracts beginning around 2010 and continuing through 2014. This increase reflects additional spending associated with ARRA investments, the establishment of the Southern Blues Collaborative Forest Landscape Restoration (CFLR) Project, and the beginning of the Malheur 10-year stewardship contract. Although the Deschutes National Forest awarded a lesser total value of service contracts than the Malheur, the Deschutes had more stability in value of contracts offered from year to year. The Ochoco National Forest also had consistency in the value of contracts offered from year to year. The Ochoco National Forest is smaller than the other eastern forests and, as such, has restoration service contract values that are less than other national forests. The Fremont-Winema and Wallowa-Whitman national forests had the greatest year-to-year variability in the amount awarded via service contracts. Because the Forest Service is a key provider of potential work, that variability can make it difficult for local businesses to plan for business investments and hiring from year to year.

There is clear variation from year to year in the share of service contract funding on an individual national forest that is awarded to local businesses (see Figure 4, page 17 and Appendix tables 11, 13, and 14, pages 39, 40, and 41). The Malheur, Fremont-Winema, and Deschutes national forests showed the greatest consistency in the amount of locally-awarded funding. However, in 2014—with the exception of the Malheur and Umatilla national forests—all national forests in eastern Oregon awarded unusually small shares of service contract values to local businesses (see Appendix table 13, page 40 and table 14, page 41). Year to year variations in local capture likely trace to changes in the worktypes of restoration projects in a given year, the capacity of the local workforce to do that work, and the ability of local businesses to compete in the contracting process for those projects. In years, when restoration projects are more focused on labor-intensive work, it is likely that lower shares of those contracts will be awarded to local businesses, all else being equal.

Figure 4 Restoration service contract values from eastern Oregon national forests awarded to local and non-local businesses, 2004–2014 ($2014)

(Source: Federal Procurement Data System records)



Timber sales

The Deschutes, Malheur, and Ochoco national forests have had the greatest consistencies in timber volume sold from year to year (see Figure 5, below). As with fluctuating service contract values, fluctuations in timber volume sold can make it difficult for private businesses to plan for future year infrastructure investments and staffing. During the baseline years, the Deschutes and Malheur national forests sold a little more than 40 million board feet of timber each year. The Ochoco National Forest consistently sold about 11 million board feet of timber each year.

During the baseline period (2009–2013), the Fremont-Winema and the Malheur national forests sold the greatest total volumes of timber of the eastern Oregon national forests (see Table 6, page 19). For the Fremont-Winema National Forest, about 90 percent of that volume was advertised as sawtimber; on the Malheur National Forest, about 70 percent was advertised as sawtimber. With the exception of the Ochoco and Umatilla national forests, most timber volume sold from eastern Oregon national forests during the baseline period was purchased by a buyer in the counties immediately surrounding the national forest. On all national forests except the Ochoco, a local buyer purchased the vast majority of advertised sawlog volume. In many cases, logs purchased by a local buyer are also processed in a local facility. However, locally-purchased logs may leave the local area if a local facility cannot process the log size or species or the material is desirable for a higher-valued wood product produced outside the local area.

The Deschutes, Malheur, and Ochoco national forests each sold more timber volume in 2014 than their annual average during the baseline (see Table 6, page 19). The remaining forests all experienced declines from their prior annual averages during the baseline. Of all national forests in eastern Oregon, only the Wallowa-Whitman National Forest saw a marked increase, relative to the baseline, in the share of timber sold that was purchased by local buyers—for all others the rates of local pur-

Figure 5 Timber volume sold by national forests in eastern Oregon, 2009–2014

(Source: Timber Information Management System records)

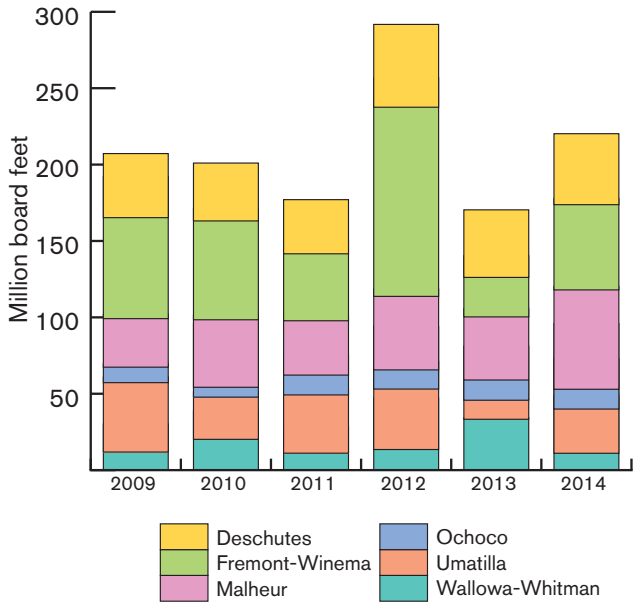


Table 6 Volume of timber sold from individual eastern Oregon national forests and percent of volume purchased by a buyer from the local forest area, 2009–2013 and 2014

		2009–2013		2014	
	Contracts	**Average annual volume sold (mmbf)**	**Percent purchased by local buyers, Average (max/min)**	**Volume sold (mmbf)**	**Percent purchased by local buyers**
Deschutes	Sawtimber	27.4	98% (100%/93%)	41.5	79%
	Non-sawtimber	15.7	89% (100%/84%)	5.3	95%
	Total	43.0	95% (100%/90%)	46.8	81%
Fremont-Winema	Sawtimber	59.8	80% (95%/62%)	56.2	69%
	Non-sawtimber	5.9	69% (92%/18%)	0.1	100%
	Total	65.7	79% (90%/61%)	56.3	69%
Malheur	Sawtimber	28.2	92% (100%/79%)	60.3	94%
	Non-sawtimber	12.1	95% (100%/89%)	5.3	91%
	Total	40.3	93% (100%/83%)	65.6	94%
Ochoco	Sawtimber	10.1	22% (68%/0%)	11.3	24%
	Non-sawtimber	1.1	41% (96%/0%)	1.8	22%
	Total	11.2	24% (64%/0%)	13.1	24%
Umatilla	Sawtimber	10.5	71% (99%/30%)	21.7	56%
	Non-sawtimber	22.4	45% (68%/32%)	7.5	14%
	Total	32.9	53% (80%/38%)	29.2	45%
Wallowa-Whitman	Sawtimber	13.8	71% (90%/50%)	9.2	100%
	Non-sawtimber	4.5	79% (90%/68%)	2.0	100%
	Total	18.3	73% (85%/58%)	11.1	100%

(Source: Federal Procurement Data System records)

chase remained mostly unchanged or declined. As a result, in many cases, the amount of timber purchased by local businesses was flat or declined. In 2014, only the Malheur and Ochoco national forests had more total timber volume purchased by local buyers in that year than occurred on average during the baseline years for those forests. However, the Deschutes, Malheur, Ochoco, and Umatilla national forests each had more sawtimber volume purchased by local buyers in 2014 than occurred on average during the baseline years for those forests.

What are the employment and income effects, in the communities around national forests, from restoration contracting and timber sales?

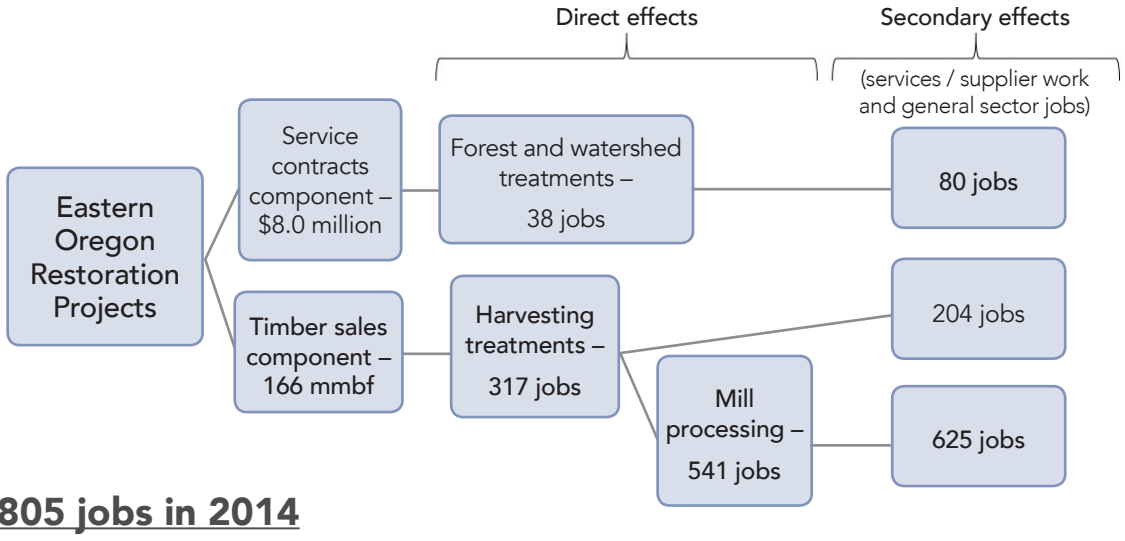
Eastern Oregon

Employment from restoration projects

Restoration projects typically include a mix of treatments that can include a variety of upland and aquatic activities. Upland restoration activities often involve either a timber sale or service contract. In the case of the former, a business is paying the Forest Service for timber that will be processed into a wood product. In the case of the latter, the Forest Service is paying a business to perform a service. Aquatic restoration activities often involve a service contract between the Forest Service and a private business. A stewardship contract or agreement blends the two mechanisms into one. In this case, one contractor is awarded both the "timber sale" work and the "service contract" work. In some cases, revenue from the sale of timber is used to offset the costs of service work performed under the contract or agreement.[13] For the results presented here, the timber components of stewardship contracts are tallied and incorporated into jobs and economic impact derivative of volume sold and services component is tallied with the effects derivative of service contracts. No attempt was made to analyze stewardship contracts as a separate group.

In 2014, national forests in eastern Oregon entered into $8 million worth of service contracts and sold 166 million board feet of timber to eastern Oregon businesses. Counting only the service contracts and timber sales to eastern Oregon businesses, and assuming a majority of timber purchased by eastern Oregon businesses is also processed in eastern Oregon (see Appendix Table 12, page 39), restoration activities on eastern Oregon national forests in 2014 would directly support 896 full and part-time jobs in eastern Oregon (typically referred to as the direct effects) (see Figure 6, below). Of those jobs, 355 would be in the woods and associated either with timber harvesting or forest and watershed treatments. The remaining jobs would be in mills or other wood products manufacturing facilities processing harvested timber. Jobs may be full or part-time and are reported on an annualized basis (i.e., each reported job lasts one year).

Figure 6 Annual jobs supported in eastern Oregon from restoration projects on eastern Oregon national forests, fiscal year 2014

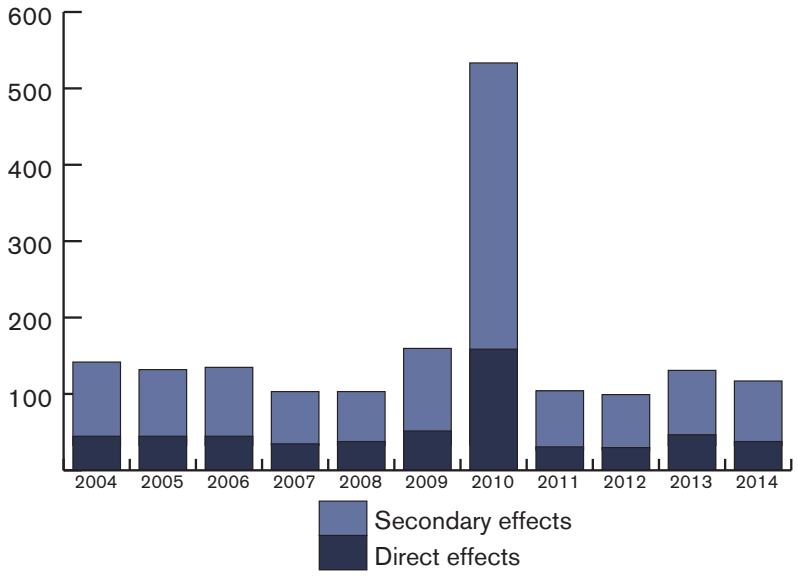


Doing work in the woods and processing timber requires a variety of supplies and services from other businesses, including things like fuel, materials, financial services, and retail goods. Additionally, employees of restoration businesses spend part of their paychecks in local communities to buy household goods and services, such as groceries, housing, healthcare, retail goods, and entertainment. The economic activity associated with purchasing of services and supplies and the spending of paycheck income is often collectively referred to as secondary economic effects. Secondary economic effects of national forest restoration in eastern Oregon would support an additional 909 full and part-time jobs in eastern Oregon. Those jobs include a mixture of people working for suppliers and service providers of forest companies and timber mills and those employed in general sectors of the economy who provide goods and services to forestry and mill workers. Counting direct and secondary effects jobs, more than 1,800 full and part-time jobs would be supported by restoration in eastern Oregon in 2014.

Service contracts

Between 2004 and 2013, service contracts with eastern Oregon businesses for work on eastern Oregon national forests supported about 124 jobs per year (see Figure 7, below). That average excludes the ARRA year of 2010 when there was a spike in employment in response to additional federal spending for restoration. The number of jobs that would be supported in eastern Oregon by year 2014 service contacting (117) was slightly lower than that in the prior decade (124). This reduction occurred despite an increase in total spending on service contracts in 2014 relative to the baseline (see above section). In this particular case, this decline traces to the worktype of projects that were awarded to eastern Oregon businesses in 2014. A much smaller share of technical restoration work was done by eastern Oregon contractors in 2014 (most of the funding for those projects was awarded to contractors located outside eastern Oregon in 2014). That worktype supports a relatively high number of jobs per dollar of project cost compared to other worktypes and that difference (along with lower rates of local capture overall) was an important factor in the reduction in jobs in 2014, relative to past patterns.

Figure 7 Direct and secondary jobs in eastern Oregon associated with service contracts for national forest restoration in eastern Oregon, 2004–2014



Timber harvests

Over the past five years, the number of jobs in eastern Oregon associated with harvesting and processing timber sold from eastern Oregon national forests has varied from year to year (see Figure 8, page 23). As stated earlier, we have counted jobs in the year the timber is sold and the year to year variation in job flow may be smoother than shown because buyers are often distributing harvested over years. On average, during the baseline period (2009 to 2013), about 1,700 jobs in eastern Oregon were supported by harvesting and processing national forest timber sold to eastern Oregon businesses each year. The number of jobs supported ranged from about 1,300 in 2011 to about 2,300 in 2012. The spike in employment in 2012 traces to the large amount of timber volume sold from eastern Oregon national forests in that year. In 2014, the number of jobs that would be supported in all of eastern Oregon from harvesting and mill processing was slightly less than the baseline average, but greater than recent low points in 2011 and 2013. The amount of timber volume purchased by eastern Oregon businesses was lower in 2014 than it had been in the baseline years. Tracking this metric in future years will provide additional information to determine the trend in employment across several years.

Income from restoration projects

Workers performing forest restoration work in the woods or working in wood processing facilities would earn about $47 million from restoration projects awarded in 2014 (see Figure 9, page 23). The majority of those earnings would go to employees processing timber (where the greatest number of jobs was estimated). Income for those providing supplies and services to companies doing the restoration work and selling goods and services to employees would be $36 million. Although there are more employees supported by the secondary effects, the income figure is less than the direct effects because workers employed in the secondary-effects sectors typically make less than those directly doing the restoration work or processing timber.

Figure 8 Direct and secondary jobs in eastern Oregon associated with harvesting and milling of timber sold by national forests in eastern Oregon, 2009–2014

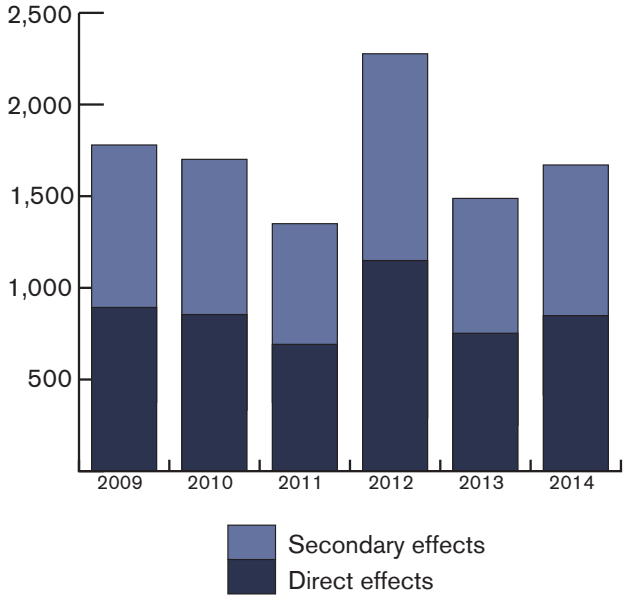
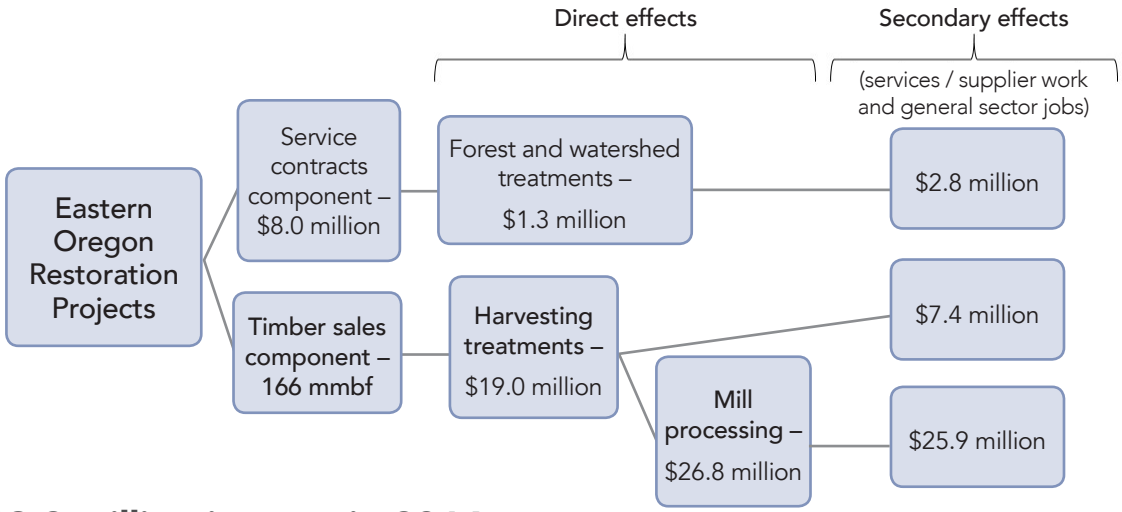


Figure 9 Annual income supported in eastern Oregon from restoration projects on eastern Oregon national forests, fiscal year 2014 ($2014)



$83.2 million income in 2014

Service contracts

Average annual income in eastern Oregon associated with service contracts for restoration work averaged about $4.2 million per year, excluding the ARRA year of 2010 (see Figure 10, below). Direct effect income accounted for about 34 percent of total income per year, on average. Income from the restoration work contracted in 2014 in eastern Oregon would be about 3 percent less than the average income during the baseline years, excluding the ARRA outlier year. That decline traces to fewer total jobs from service contracting with eastern Oregon businesses in 2014.

Timber harvests

Between 2009 and 2013, average annual income in eastern Oregon (including direct and secondary effects) from activities related to timber harvesting and wood processing was approximately $81 million per year (see Figure 11, page 25). As with employment, the lowest point during the baseline period was in 2011 when total income dipped below $63 million. Like the pattern found above for employment from timber harvests, annual income supported by 2014 timber sales in eastern Oregon is about $2.5 million less than the baseline average, but several million dollars per year higher than the low years in 2011 and 2013.

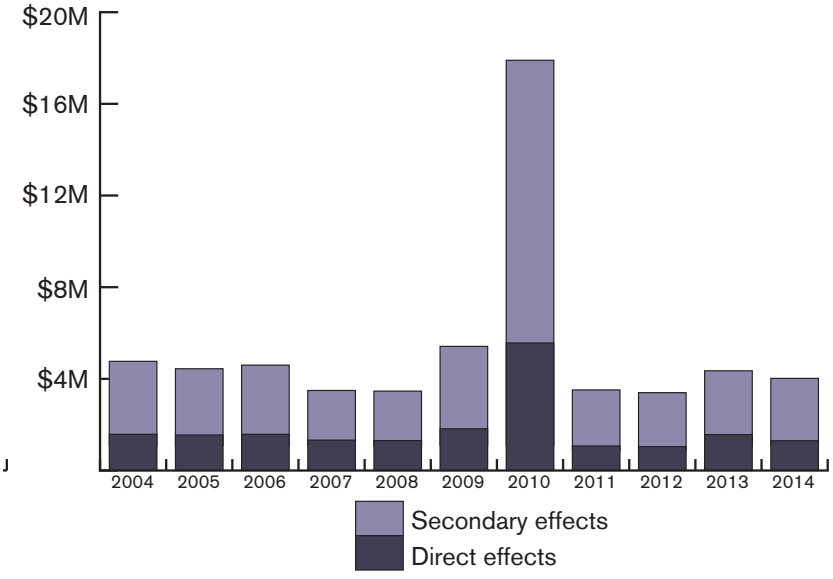
Blue Mountains region

Federal forest restoration and social and economic conditions in the Blue Mountains region of Oregon have received much attention from policy makers and federal and state land managers. The Blue Mountains NEPA team and the Malheur 10-year stewardship contract are both focused on that region. Further, many of the initial activities of Oregon's FFH Program from 2013-2015 were aimed at accelerating restoration on Blue Mountains national forests.[14] Given the interest in the Blue Mountains region, we report economic outcomes specific for that region of Oregon.

Employment from restoration projects

In 2014, the Blue Mountains national forests (Ochoco, Malheur, Umatilla, and Wallowa-Whitman) entered into $6.3 million worth of service contracts and sold 89 million board feet of timber to Blue

Figure 10 **Direct and secondary income in eastern Oregon associated with service contracts for national forest restoration in eastern Oregon, 2004 – 2014 ($2014)**



Mountains businesses. The Blue Mountains national forests awarded an additional $4.3 million in service contracts and sold an additional 30 million board feet of timber to business located outside the Blue Mountains region. Most of those contracts and timber sales were awarded to business located elsewhere in eastern Oregon.

Restoration work on the four Blue Mountains national forests by Blue Mountains region businesses awarded in 2014 would support about 860 jobs in the Blue Mountains region (see Figure 12, below). About 54 percent of those jobs are doing the restoration work in the woods or processing harvested timber in Blue Mountains mills; the remaining jobs are in other sectors of the economy.

Figure 11 **Direct and secondary income in eastern Oregon associated with harvesting and milling of timber sold by national forests in eastern Oregon, 2009–2014**

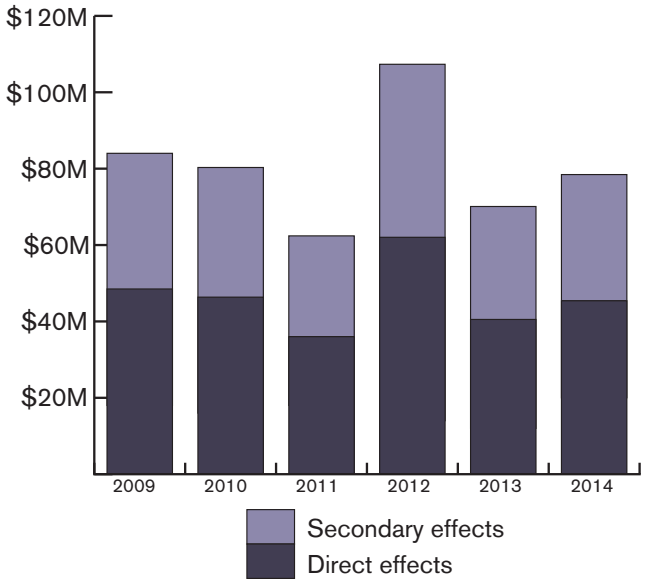
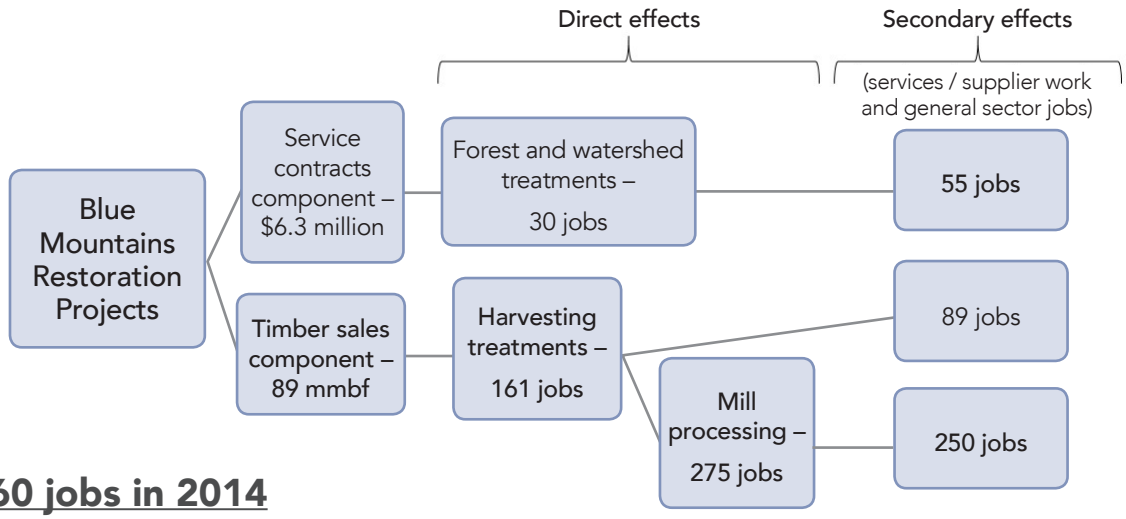


Figure 12 **Annual jobs supported in the Blue Mountains counties from restoration projects on the Blue Mountains national forests, fiscal year 2014**



Service contracts

Excluding the ARRA year of 2010, an average of about 76 jobs were supported each year between 2004 and 2013 from restoration service contract work on Blue Mountains national forests done by Blue Mountains region companies (see Figure 13, below). About 40 percent of those jobs were directly involved in doing the restoration work; the remaining jobs were in other sectors of the economy. Excluding the dramatic increase in jobs supported in the ARRA year of 2010, annual employment was fairly stable during the baseline years. Relative to the baseline, in 2014, the number of jobs supported within the Blue Mountains region by service contracts increased by 12 percent. Year 2014 continues a two-year increase in employment associated with service contracts in the Blue Mountains region.

Timber purchases

There was a 41 percent increase in 2014, compared to the 2009 to 2013 period, in jobs supported in the Blue Mountains region from harvest and milling of Blue Mountains national forests timber sold to Blue Mountains region businesses (see Figure 14, page 27). During the baseline years between 467 and 612 jobs were supported annually in the Blue Mountains region from timber harvest and mill processing.

Income from restoration projects

In 2014, restoration projects on Blue Mountains national forests would support $40.7 million in total income within the Blue Mountains region (see Figure 15, page 27). Slightly more than half of that income would go to those doing the restoration work or processing harvested timber in Blue Mountains mills. The remainder would go to those in other sectors of the economy that serve restoration businesses and their workers.

Figure 13 **Direct and secondary jobs in the Blue Mountains region associated with service contracts for national forest restoration on Blue Mountains national forests, 2004–2014**

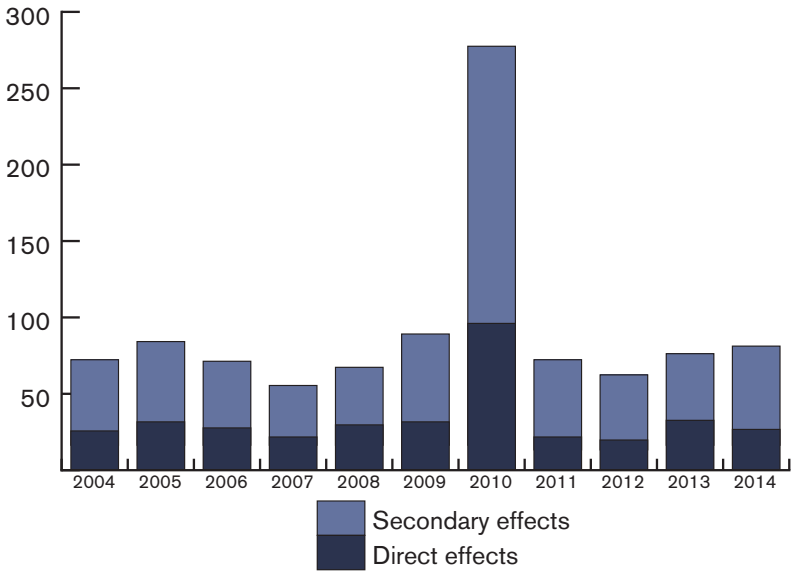


Figure 14 **Direct and secondary jobs in the Blue Mountains region associated with harvesting and milling of timber sold by Blue Mountains national forests, 2009–2014**

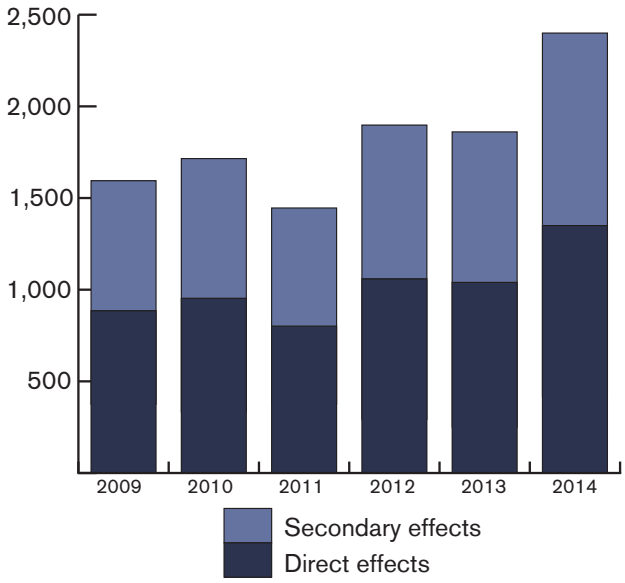
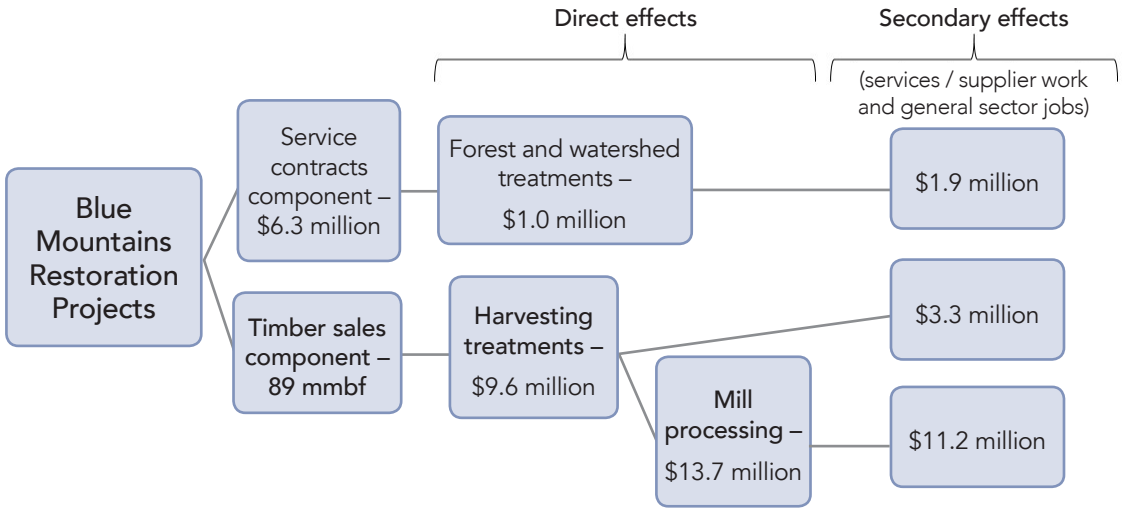


Figure 15 **Annual income supported in the Blue Mountains counties from restoration projects on the Blue Mountains national forests, fiscal year 2014 ($2014)**



$84.7 million in income in 2014

Service contracts

Average annual income during the baseline years, excluding 2010, from service contracts for restoration work on Blue Mountains national forests was $2.4 million (see Figure 16, page 29). About 38 percent of that income went to those doing the work and the remainder went to other sectors of the economy within the Blue Mountains region that provided services and supplies to restoration businesses or restoration workers. The increase in 2014, over the baseline, was about 16 percent. Income grew at a faster pace than the number of jobs (see prior section), suggesting there was a shift to higher paying types of work, such as equipment-intensive or material-intensive work, in 2014. The 2014 annual income continues a year-to-year increase from a low in 2012.

Timber harvests

The amount of total income in the Blue Mountains region associated with harvesting and milling timber that would be supported by 2014 timber sales was 27 percent greater than income supported during the baseline years (in real dollars) (see Figure 17, page 29). About 64 percent of income would go to those directly involved in harvesting or processing timber; the remainder went to other sectors of the economy.

Figure 16 **Direct and secondary income in the Blue Mountains region associated with service contracts for national forest restoration on Blue Mountains national forests, 2004–2014 ($2014)**

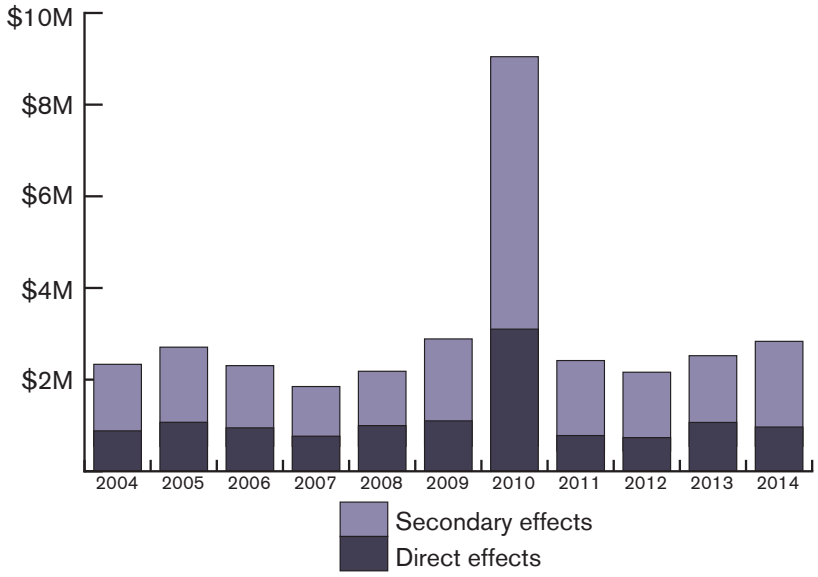
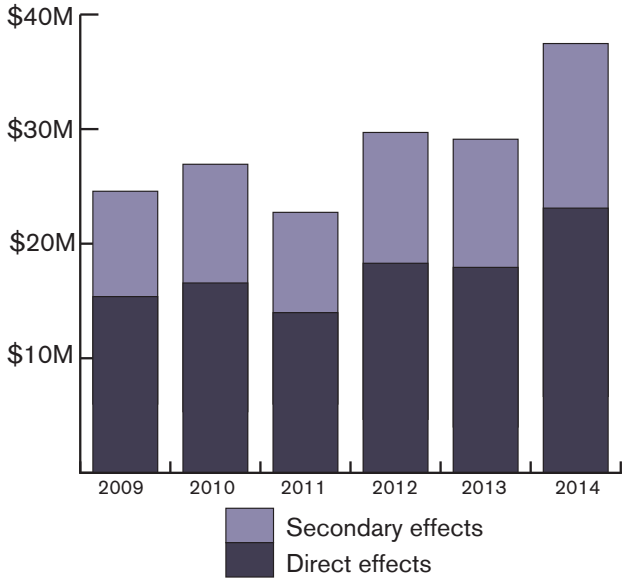


Figure 17 **Direct and secondary income in the Blue Mountains region associated with harvesting and milling of timber sold by Blue Mountains national forests, 2009–2014 ($2014)**



National forest communities

There are longstanding social and economic connections between national forests and the communities settled around those public lands. For those living and working in the towns and counties located around individual national forests, the amount of restoration work on the local national forest is typically of more interest than what is happening across the broader region. For each eastern Oregon national forest, we identified what counties were "local" to that national forest based on existing Forest Service protocols and our local knowledge from working with forest stakeholders in eastern Oregon (see Appendix Table 11, page 39). For most national forests, the local-area counties are those that "touch" the national forest.

Employment and income from restoration projects

The numbers of jobs supported in local communities by national forest management activities are determined in large part by the volumes of timber and magnitudes of service contracts offered by national forests, how much of both are awarded to businesses around national forests, and the sizes of the local economies. Differing economic outcomes between specific national forest communities primarily result because of differences in those three factors.

During the baseline years, for service contracts, the Fremont-Winema and Malheur national forests supported the greatest numbers of jobs and most income. Both of those national forests have large land areas, offered large service contract values relative to other national forests, and had contractors in the local area who were successful at competing for restoration service contract work. For timber harvests, the Fremont-Winema and Deschutes national forests had the greatest numbers of jobs and amounts of income supported in their local communities: 424 and 314 jobs per year, respectively (see Table 7, page 31). Those national forests had relatively high economic outcomes because of the amounts of timber offered for sale and the presence of forestry businesses and processing facilities in nearby communities.

For service contracts, only the Malheur National Forest saw an increase in local jobs and income supported by restoration from the baseline period to year 2014. The increase on the Malheur National Forest reflects, in part, spending under the Mal-

Table 7 Average annual jobs and income ($millions, 2014) in counties around eastern Oregon national forests supported by restoration activities on those national forests

		Timber harvesting and milling		Service contracts	
National forest		**Baseline**	**2014**	**Baseline**	**2014**
Deschutes	Wages generated	$13.7	$14.6	$0.7	$0.2
	Jobs supported	314	334	21	4
Fremont-Winema	Wages generated	$19.2	$15.1	$1.1	$0.3
	Jobs supported	424	335	34	9
Malheur	Wages generated	$9.0	$16.6	$0.9	$1.9
	Jobs supported	188	347	30	58
Ochoco	Wages generated	$0.9	$1.1	$0.1	$0.0
	Jobs supported	21	24	4	1
Umatilla	Wages generated	$4.8	$5.1	$0.6	$0.4
	Jobs supported	94	102	18	13
Wallowa-Whitman	Wages generated	$4.5	$4.0	$0.4	$0.2
	Jobs supported	95	85	15	8

* Note: Baseline averages for service contracts exclude years 2009 and 2010, which were influenced by high ARRA spending.

heur 10-year stewardship contract and the Southern Blues CFLR Project. The year-to-year decline for the other eastern Oregon national forests mirrors the pattern of employment decline related to federal forest and watershed restoration treatments found for all of eastern Oregon combined. The Deschutes and Fremont-Winema national forests saw the steepest declines in employment and income from service contracts between the baseline period and year 2014, tracing primarily to steep declines in 2014 in the share of contract value that was awarded to local contractors.

In 2014, all national forests in eastern Oregon, except the Fremont-Winema and Wallowa-Whitman, saw an increase in jobs and income supported in local communities from timber harvest and milling activities. In 2014, the Malheur and Deschutes national forests supported the greatest numbers of jobs associated with timber harvest and milling. The large expansions in jobs and income supported on the Malheur national forest reflect increases in timber volume sold through federal investments in the Malheur 10-year stewardship contract and the establishment of the Southern Blues CFLR Project.

What is the economic activity resulting, in the communities around national forests, from restoration contracting and timber sales?

Businesses doing restoration work generate business sales (or output) as they buy goods and services from other businesses and sell products to consumers and other businesses. Business output is reported most commonly in the context of the national gross domestic product or GDP.

Eastern Oregon

Business output in eastern Oregon resulting from service contracts for restoration work on eastern Oregon national forests averaged a little less than $17 million per year during the baseline period, excluding the ARRA year of 2010 (see Table 8, below). Business output supported by service contracts for restoration offered in 2014 would be slightly higher than during the baseline. This increase in 2014 differs from the pattern of a slight decline in employment and income from service contracts in 2014, compared to the baseline. In 2014, in eastern Oregon, about 73 percent of the value of service contracts awarded to eastern Oregon contractors was for equipment-intensive work; in the baseline period equipment-intensive work accounted for 45 percent of the contract value awarded to eastern Oregon contractors. That type of work typically supports fewer employees than other types of work, but higher levels of secondary economic output from other businesses as equipment has to be serviced and parts supplied by other businesses in the region. Additionally, the workers doing equipment-intensive service contract work (even though they are fewer in number) tend to have relatively higher wages, which supports more secondary economic activity as those workers purchase household goods and services.

During the baseline years, timber harvest and milling activities associated with eastern Oregon national forest timber harvest generated an average of $305 million in business output per year in eastern Oregon (see Table 8, below). As was found for the jobs and income, total output supported by timber sales in 2014 declined slightly from the baseline average. For context, the average annual output from timber sales and harvesting during the baseline period represents about 1 percent of total annual output from all business activities in the eastern Oregon economy.

Table 8 Business output in eastern Oregon from restoration activities on eastern Oregon national forests during the baseline period and in 2014, $millions, ($2014)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Timber harvest and milling											
Direct						173.0	165.4	128.5	221.7	145.0	162.9
Secondary						144.5	138.1	107.4	184.1	120.1	134.0
Total						317.6	303.6	235.9	405.8	265.1	296.8
Service contracts											
Direct	9.0	8.4	8.8	6.6	6.4	10.4	34.6	6.9	6.7	8.0	8.0
Secondary	10.2	9.4	9.9	7.3	6.9	11.8	40.0	8.0	7.8	9.0	9.2
Total	19.3	17.9	18.7	13.9	13.3	22.1	74.6	14.8	14.6	17.0	17.2

Blue Mountains region

Restoration projects awarded in 2014 in the Blue Mountains region to Blue Mountains businesses would support $135 million in business output (see Table 9, below). About 2/3 of that output is associated with businesses directly doing the restoration work or processing timber harvested in the course of restoration work. The remainder is associated with other sectors of the economy providing goods and services to restoration businesses and restoration workers. Business output increased in 2014 compared to baseline periods: 41 percent for timber harvesting and processing and 31 percent for restoration service contracts.

National forest communities

Changes in business output in national forest communities from restoration activities follows a pattern similar to that found for jobs and income. The Fremont-Winema, Deschutes, and Malheur national forests supported the greatest levels of business output from forest restoration projects during the baseline periods (see Table 10, page 34). The Malheur, Deschutes, and Umatilla national forests each experienced an increase in the value of business output supported by restoration projects in 2014, compared to the baseline. In the case of the Deschutes and Umatilla national forests, that gain occurred because the increase in business output from timber harvesting and milling activities offset the decline in business output from restoration service contract work. Of all eastern Oregon national forests, only the Malheur National Forest experienced an increase in business output from both the timber sale and service contract aspects of restoration projects.

Table 9 Business output in the Blue Mountains region from restoration activities on Blue Mountains national forests during the baseline period and in 2014, $millions, ($2014)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Timber harvest and milling											
Direct						54.9	59.1	49.8	65.4	64.1	82.9
Secondary						26.7	28.7	24.3	31.6	30.9	39.6
Total						81.5	87.8	74.1	96.9	95.0	122.5
Service contracts											
Direct	4.8	5.5	4.7	3.8	4.3	5.9	19.4	5.2	4.7	5.1	6.3
Secondary	4.7	5.4	4.5	3.6	4.0	5.9	19.9	5.4	4.9	4.9	6.5
Total	9.5	10.9	9.1	7.3	8.3	11.8	39.3	10.6	9.6	10.1	12.7

Table 10 Average business output from restoration activities on eastern Oregon national forests during the baseline period and in 2014, $millions, ($2014)

National forest			Baseline	2014
Deschutes	Timber harvest and milling	Direct	$28.2	$30.0
		Secondary	$23.2	$24.5
		Total	**$51.4**	**$54.5**
	Service contracts	Direct	$1.2	$0.3
		Secondary	$1.5	$0.3
		Total	**$2.6**	**$0.6**
Fremont-Winema	Timber harvest and milling	Direct	$42.6	$33.6
		Secondary	$28.2	$22.3
		Total	**$70.9**	**$55.9**
	Service contracts	Direct	$1.9	$0.6
		Secondary	$2.3	$0.8
		Total	**$4.2**	**$1.4**
Malheur	Timber harvest and milling	Direct	$20.6	$37.8
		Secondary	$11.7	$21.0
		Total	**$32.3**	**$58.8**
	Service contracts	Direct	$2.5	$4.6
		Secondary	$2.1	$4.1
		Total	**$4.6**	**$8.7**
Ochoco	Timber harvest and milling	Direct	$2.0	$1.8
		Secondary	$2.3	$2.1
		Total	**$4.3**	**$4.0**
	Service contracts	Direct	$0.2	$0.0
		Secondary	$0.3	$0.1
		Total	**$0.5**	**$0.1**
Umatilla	Timber harvest and milling	Direct	$10.1	$10.9
		Secondary	$7.4	$7.9
		Total	**$17.5**	**$18.8**
	Service contracts	Direct	$1.1	$0.8
		Secondary	$1.0	$0.8
		Total	**$2.1**	**$1.7**
Wallowa-Whitman	Timber harvest and milling	Direct	$9.7	$8.6
		Secondary	$7.0	$6.2
		Total	**$16.7**	**$14.8**
	Service contracts	Direct	$0.9	$0.5
		Secondary	$0.8	$0.4
		Total	**$1.7**	**$0.9**

What are the effects of Eastside Restoration on restoration contracting business health?

Under the Eastside Strategy monitoring plan, the Malheur 10-year stewardship contract was to be the initial focus for gauging the effects of restoration contracting on business health. In future years, the business health effects of restoration contracting may be examined over a broader geographic area, for a broader set of businesses, and for other specific restoration efforts. The business health outcomes from the Malheur 10-year stewardship contract are described in detail in two fact sheets published in 2015 in support of monitoring Oregon's FFH Program.[15,16] We provide a brief summary of the information reported in those documents here.

The Malheur 10-year stewardship contract was competitively awarded in 2013 to Iron Triangle LLC, a Grant County contractor local to the Malheur National Forest. That stewardship contract is an Integrated Resource Service Contract and includes a combination of timber sales and restoration work typically awarded with a service contract. The value of the service contract work is greater than what the contractor would have paid to the Forest Service for the timber. The stewardship contract will be implemented over 10 years in a series of task orders lasting two years each. The timber harvested as part of the contract is expected to account for at least 70 percent of Malheur National Forest's annual timber sale volume for the life of the contract.

The 10-year stewardship contract was established with the goals of promoting ecological restoration, reducing wildfire risk, and promoting economic vitality in Grant and Harney counties. The anticipated benefit to the communities in Grant and Harney counties was a primary evaluation criterion in selecting which business would be awarded the contract. The work of both local forest collaborative groups—Blue Mountains Forest Partners and Harney County Restoration Collaborative—was a key contributing factor in generating support for the stewardship contract.

The first task order under the contract was provided in September 2013 and work on that task order was begun in 2014. The first task order included a timber sale of 38 million board feet (about half of which was harvested in year 1) and restoration activities on 9,000 acres. The contractor has two years to complete work under each task order. The large timber sale can be seen in Figure 5 as a spike in the sold timber volume of the Malheur National Forest in 2014.

In 2014, the value of the timber removed and the services performed in the first year of the stewardship contract was worth $2.2 million. Based on economic modeling and consultation with local contractors,[17] the 2014 activities for task order 1 supported 101 jobs in Grant County. Forty-three of those jobs were associated with work in the woods, either harvesting timber or doing forest and watershed treatments, and 15 jobs were at the local mill processing harvested timber. Because these job figures are focused solely on Grant County, the ratio of milling jobs to jobs in the woods is much lower than that shown above when considering the Blue Mountains region or Eastern Oregon as a whole. This difference results because, when analyzing those larger-than-county areas, more timber was assumed to be processed within the analysis area than was observed to have happened when considering Grant County alone. An additional 43 jobs were in other sectors of the Grant County economy providing supplies and services to the businesses doing the restoration work and selling household goods and services to restoration companies and mill workers.

Iron Triangle LLC worked with 13 subcontractors—all but one originating in northeastern Oregon—to do the restoration work, transport equipment, and haul logs to the mill in Grant County and elsewhere in Northeastern Oregon. Businesses reported that the work in the first year of the first task order required them to expand their skills to be able to carry out prescriptions (e.g., being able to implement designation by prescription treatments), hire additional employees for work in the woods and business offices, and ensure pay and benefits met or exceeded federal contracting requirements. Beyond the work in the woods, the local sawmill in Grant County temporarily filled a second shift for seven months to process additional timber. Further, community members reported that more local businesses had "help wanted" signs in their windows. All of the businesses interviewed stated that their sustainability and outlook were better than prior to the 10-year contract.

Although long-term contracts, in general, offer some certainty about future work, there remains some uncertainty about how many task orders will be signed under those contracts and what actual activities and timber volumes will be included in each task order. In year 1 of the 10-year stewardship contract, harvested timber volumes included more non-sawtimber material and a greater number of logs that were species other than ponderosa pine than had been anticipated. Because there was no local processing facility for that material, the contractor stored and transported more of that material than expected. Further, the local Grant County mill processed fewer logs than anticipated by the mill and contractor. The signing of the second task order under the Malheur stewardship contract in late 2014 was seen by local businesses as a boost to confidence that increased levels of service contracting and timber harvest would last for at least a few years.

Summary and conclusions

Accelerated restoration efforts in eastern Oregon are leading to changing patterns in the timber sales and service contracts components of restoration projects. The findings of our social assessment reveal complexity in social and economic responses to accelerated restoration investments with findings that vary across differing geographic levels, indicators, and local communities:

- The components of accelerated restoration have been focused in specific areas and it is in those areas where there are the most consistent gains in social and economic outcomes from restoration. To date, accelerated restoration efforts have focused mostly on the Blue Mountains region of eastern Oregon. Within that area, indicator values (e.g., restoration service contract spending and timber sale volumes) for 2014 were generally greater than during the baseline period. Elsewhere in eastern Oregon, indicator values for 2014 were often flat or below baseline conditions.

- The amount of money being invested in restoration service contracts appears to be increasing relative to conditions in the baseline period. Businesses immediately around national forests, and those in eastern Oregon more broadly, had rates of local capture in 2014 that were lower than during the baseline period. In 2014, it appears that eastern Oregon contractors either lacked the capacity to take on more restoration work or they were unable to be competitive within the Forest Service contracting system. Reduced rates of local capture are a hindrance to achieving the restoration goal of supporting local economic activity.

- The volume of timber sold from all eastern Oregon national forests combined was 5 percent greater in 2014 than average annual sales during the baseline period. At the national forest level, the volumes of timber sold in 2014 on the Deschutes, Malheur, and Ochoco national forests increased compared to baseline averages while timber sale volumes on the Fremont-Winema and Wallowa-Whitman national forests declined in 2014, relative to baseline averages.

- Despite an increase in total volume sold collectively from national forests in eastern Oregon, a smaller volume of timber was purchased by eastern Oregon buyers in 2014 compared to the baseline years. At the forest level, in 2014, nonlocal buyers purchased a greater share of timber volume, compared to the patterns during the baseline period, on all national forests except the Wallowa-Whitman.

- Employment and income within eastern Oregon related to federal forest restoration was greater in 2014 than in 2013. This increase occurred because the increase from 2013 to 2014 in harvesting and milling jobs and income offset a decrease in jobs and income supported by service contracts.

- Despite the one-year increase between 2013 and 2014, the numbers of jobs and amounts of income supported in 2014 in eastern Oregon as a whole for both timber sales and service contracts were slightly lower than baseline averages computed over several recent years. This pattern reflects the combined effects of declines in the amount of timber purchased by eastern Oregon buyers, lower rates of local capture for service contracts, and a lower share of technical service contract work by eastern Oregon contractors.

- In places where there have been federal investments in accelerated restoration, businesses say their outlooks are improved and hiring has expanded. Businesses doing the restoration work reported that accelerated restoration afforded them the opportunity to expand their skills, hire additional workers, and ensure pay met or exceeded federal contracting requirements.

Endnotes

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2 White, E.M., E.J. Davis, and C. Moseley. 2015. Socioeconomic monitoring plan for the U.S. Forest Service's Eastside Restoration efforts. Ecosystem Workforce. Program Working Paper 52. Available at http://ewp.uoregon.edu/sites/ewp.uoregon.edu/files/WP_52.pdf.

3 For an overview of the Forest Service Eastside Restoration effort see: http://www.fs.usda.gov/detail/r6/landmanagement/resourcemanagement/?cid=stelprdb5423597.

4 Oregon Department of Forestry 2015. Federal Forest Health Program, budget package 185. Available at http://www.oregon.gov/ODF/Board/Documents/BOF/20150304/BOFMIN_20150304_ATTCH_11.pdf.

5 White, E.M., E.J. Davis, D.E. Bennett, and C. Moseley. 2015. Monitoring of Outcomes from Oregon's Federal Forest Health Program. Ecosystem Workforce Program Working Paper #57. Available: http://ewp.uoregon.edu/sites/ewp.uoregon.edu/files/WP_57.pdf.

6 Davis, E.J. and C. Moseley. 2013. Socioeconomic monitoring of public lands management: A compilation of measures. Ecosystem Workforce Program, University of Oregon. Briefing Paper #55. Available at http://ewp.uoregon.edu/sites/ewp.uoregon.edu/files/BP_55.pdf.

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10 Forest Restoration and Utilization Calculator. See http://ewp.uoregon.edu/calculate .

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14 Oregon Department of Forestry. 2015. Federal Forest Health Program. Available at http://www.oregon.gov/ODF/Board/Documents/BOF/20150304/BOFMIN_20150304_ATTCH_11.pdf.

15 Davis, E.J., E.M. White, and D. Bennett. 2015. Collaboration and the Malheur 10-year stewardship contract. Ecosystem Workforce Program Fact Sheet 8. Available at: http://ewp.uoregon.edu/sites/ewp2.uoregon.edu/files/images/resources/economy/FS_8_Malheur.pdf.

16 Bennett, D., E.J. Davis, E.M. White, and A. Ellison. 2015. Economic impacts from the Malheur 10-year stewardship contract. Ecosystem Workforce Program Fact Sheet #5. Available: http://ewp.uoregon.edu/sites/ewp2.uoregon.edu/files/FS_5.pdf.

17 ibid.

Appendix: Supplemental tables

Table 11 Counties local to eastern Oregon national forests

National forest	County
Deschutes	Deschutes
	Crook
	Klamath
Fremont-Winema	Lake
	Klamath
Malheur	Grant
	Harney
	Baker
	Crook
Ochoco	Crook
	Deschutes
	Jefferson
	Wheeler
Umatilla	Umatilla
	Union
	Wallowa
	Grant
	Morrow
Wallowa-Whitman	Wallowa
	Union
	Baker

Table 12 Assumed share of timber that is purchased by an analysis area buyer that is also processed within the analysis area

Analysis area	Sawtimber	Not sawtimber
Eastern Oregon	100%	100%
Blue Mountains Region	100%	75%
Individual national forests	80%	60%

* Note: Remaining share of timber is assumed to be processed outside the analysis area.

Table 13 Local capture by national forest and worktype for service contracts 2004–2013

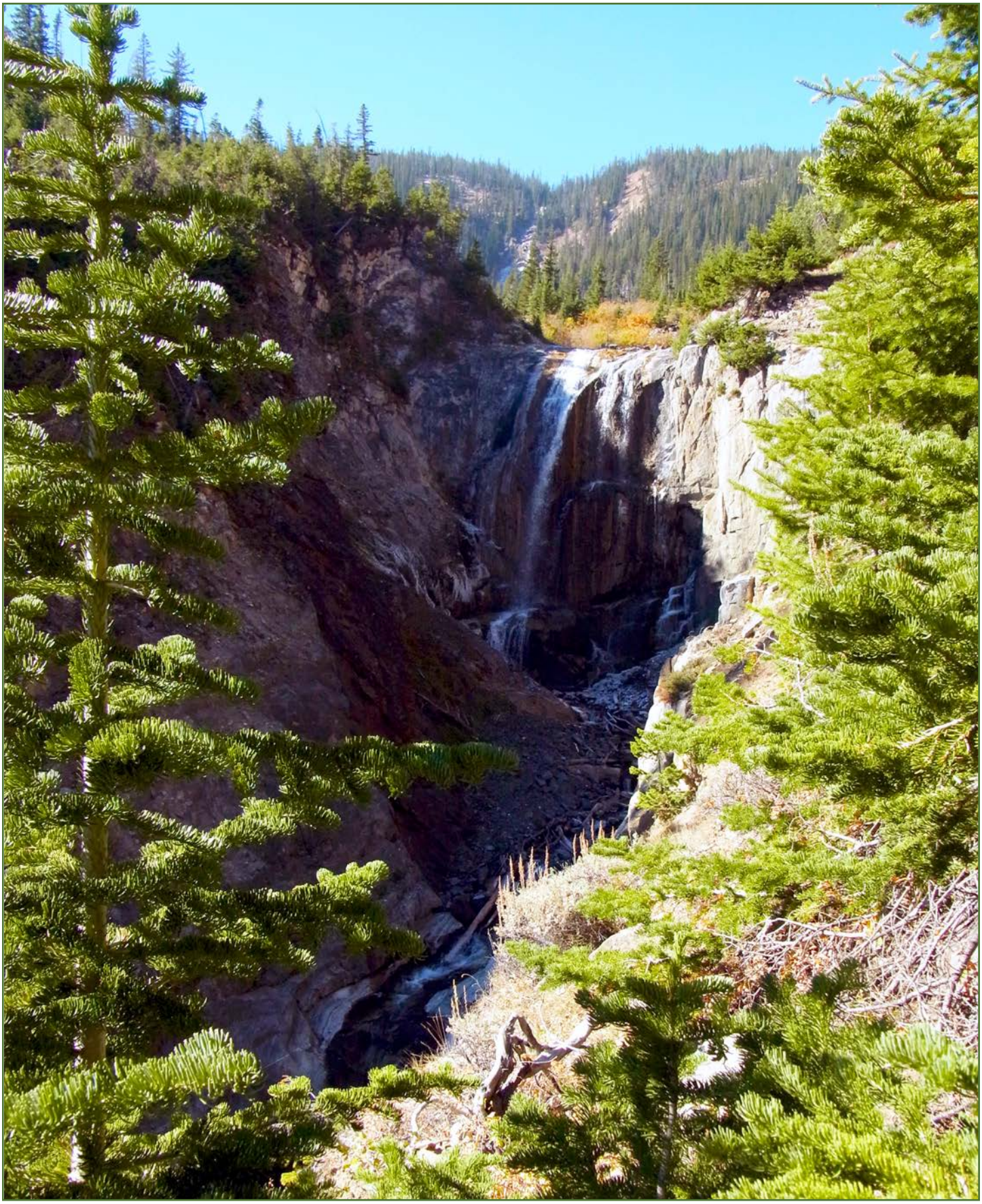
National Forest	Worktype	Total contracts	Contracts with local contractors	Total contract value ($2014)	Contract value with local contractors ($2014)	Local capture
Deschutes	Equipment	188	93	23,116,258	13,906,088	60%
	Labor	56	17	4,505,373	595,408	13%
	Material	52	25	9,751,830	4,714,529	50%
	Professional	3		63,438	0	0%
	Technical	83	31	2,212,662	913,387	41%
	Total	**382**	**166**	**39,649,561**	**20,129,412**	**51%**
Fremont-Winema	Equipment	256	147	21,265,385	10,601,071	49%
	Labor	101	53	5,624,021	3,189,116	57%
	Material	94	80	5,995,211	3,443,976	58%
	Professional	10	3	359,560	60,615	18%
	Technical	105	71	2,443,200	1,552,135	63%
	Total	**566**	**354**	**35,687,378**	**18,846,913**	**52%**
Malheur	Equipment	199	148	31,786,151	23,587,153	74%
	Labor	104	45	8,428,253	2,506,802	30%
	Material	79	57	12,269,201	5,606,762	45%
	Professional	2		192,096	0	0%
	Technical	63	17	3,084,600	388,568	12%
	Total	**447**	**267**	**55,760,301**	**32,089,285**	**57%**
Ochoco	Equipment	91	14	5,743,030	1,176,719	21%
	Labor	35	10	1,675,576	350,570	21%
	Material	16	8	2,487,529	1,195,744	49%
	Professional	2	1	136,613	73,724	55%
	Technical	69	29	1,394,174	625,040	46%
	Total	**213**	**62**	**11,436,921**	**3,421,797**	**30%**
Umatilla	Equipment	173	70	8,384,442	3,130,940	38%
	Labor	99	11	5,811,172	684,388	13%
	Material	84	52	6,959,693	3,604,149	52%
	Professional	11		364,266	0	0%
	Technical	177	83	10,656,326	6,291,322	59%
	Total	**544**	**216**	**32,175,899**	**13,710,799**	**43%**
Wallowa-Whitman	Equipment	140	36	10,540,022	2,944,660	28%
	Labor	66	17	2,459,148	445,036	18%
	Material	101	80	14,824,219	5,844,199	38%
	Professional	8	2	295,620	139,243	47%
	Technical	173	79	5,520,845	3,340,556	61%
	Total	**488**	**214**	**33,639,854**	**12,713,695**	**37%**

(Source: Federal Procurement Data System records)

Table 14 Local capture by national forest and worktype for service contracts 2014

National Forest	Worktype	Total contracts	Contracts with local contractors	Total contract value ($2014)	Contract value with local contractors ($2014)	Local capture
Deschutes	Equipment	7	3	320,999	200,749	63%
	Labor	1	0	260,260	0	0%
	Material	2	0	979,523	0	0%
	Professional	0	0	0	0	n/a
	Technical	6	2	220,264	70,163	32%
	Total	**16**	**5**	**1,781,046**	**270,912**	**15%**
Fremont-Winema	Equipment	19	4	4,496,859	604,314	13%
	Labor	5	0	1,140,791	0	0%
	Material	4	3	0	0	0%
	Professional	0	0	0	0	n/a
	Technical	6	0	422,320	0	0%
	Total	**34**	**7**	**6,059,971**	**604,314**	**10%**
Malheur	Equipment	7	2	4,373,124	4,317,320	99%
	Labor	17	4	1,113,899	237,798	21%
	Material	1	1	2,704	2,704	100%
	Professional	0	0	0	0	n/a
	Technical	3	1	94,640	32,854	35%
	Total	**28**	**8**	**5,584,367**	**4,590,677**	**82%**
Ochoco	Equipment	2	0	526,044	0	0%
	Labor	2	0	4,210	0	0%
	Material	8	0	37,558	0	0%
	Professional	0	0	0	0	n/a
	Technical	38	3	313,951	44,742	14%
	Total	**50**	**3**	**881,763**	**44,742**	**5%**
Umatilla	Equipment	15	2	660,761	271,379	41%
	Labor	7	0	359,490	0	0%
	Material	2	0	514,076	339,770	66%
	Professional	0	0	0	0	n/a
	Technical	8	0	309,766	230,864	75%
	Total	**32**	**2**	**1,844,094**	**842,013**	**46%**
Wallowa-Whitman	Equipment	32	1	1,582,748	184,636	12%
	Labor	4	0	180,921	0	0%
	Material	4	1	307,243	258,398	84%
	Professional	1	0	22,279	0	0%
	Technical	52	7	211,371	54,388	26%
	Total	**93**	**9**	**2,304,562**	**497,421**	**22%**

(Source: Federal Procurement Data System records)



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