Collaborative Capacity and Outcomes from Oregon's Federal Forest Restoration Program

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About the Ecosystem Workforce Program:

The Ecosystem Workforce Program is a bi-institutional program of University of Oregon's Institute for a Sustainable Environment and the College of Forestry at Oregon State University. We conduct applied social science research and extension services at the interface of people and natural resources. Our publications aim to inform policy makers and practitioners, and contribute to scholarly and practical discourse. More information available at: http://ewp.uoregon.edu/about/intro.

About the Policy Analysis Group:

The Policy Analysis Group at the University of Idaho, including Greg Alward, Greg Latta, and Philip Watson, conducted the economic analysis for this report. The Policy Analysis Group (or "PAG") was established by the Idaho Legislature in 1989 to provide objective analysis of the impacts of natural resource proposals. The PAG is administered through the University of Idaho's College of Natural Resources. More information can be found at: https://www.uidaho.edu/cnr/policy-analysis-group.

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Executive summary

Over the past two decades, numerous federal forest collaboratives have emerged in the state of Oregon. These groups function on the basis of dialogue among diverse stakeholders regarding their interests and values for forest management priorities on a given area of public forest land, and may offer input before and during the environmental analysis required by the National Environmental Policy Act (NEPA process) by making recommendations for the use of retained receipts from stewardship contracting, and/or by providing zones of agreement, restoration principles, or other statements about management issues beyond the project scale. Although they generally do not possess any formal decision-making authority, their efforts are considered to be important in building social agreement for programs of work on federal forestlands.

This study analyzed the use and outcomes of the State of Oregon's investments in these forest collaborative groups through Collaborative Capacity Grants made by the Federal Forest Restoration Program from state fiscal years 2014-2019. Activities funded included collaborative facilitation and coordination of collaborative processes for projects, technical assistance, science support, monitoring, and outreach and communications. These grants were a smaller component of the FFR Program spending than several of its other program areas, constituting $1.4 million or 14 percent of all program funds. However, these investments were made with the expectation that collaborative groups would increase the pace, scale, and quality of federal forest restoration; and there is a need to understand results from supporting these groups. We examined several types of outcomes from FFR Program grants awarded to forest collaboratives, focusing primarily on their capacity to foster accelerated restoration, acreages and types of activities planned and implemented with collaborative input, economic impacts, and effects of grants on collaborative organizational capacity itself.

Key findings:

Grant investments

- The $1.4 million state investment in collaborative grants leveraged at least an additional $2.5 million in financial and in-kind support from collaborative participants and partners. This is 60 percent of all documented match leveraged for the entire FFR Program.
- State spending on collaborative grants averaged a total of $238,914 per year. Individual grants ranged in size from $10,725 to $73,715, with a median amount of $39,744.
- Grant investment was uneven across the state. The majority of total grant funding from state fiscal years 2014-2019 (62 percent) was awarded to seven groups on eastside forests. Eleven westside side groups received a total of $349,814; and three southern Oregon groups received a total of $190,850.

Collaborative acres planned

- Funded groups collaborated on nearly 1.9 million acres of federal forest land using their FFR Program collaborative capacity grants. Of these acres, 836,525 were planning areas or other projects for which a NEPA decision was made by March of 2019. A little over one million acres were actively being collaborated on but were still under analysis as of the time of this publication.
- Projects ranged in size from a 40-acre timber sale to a multi-forest environmental impact statement analysis process that included 230,000 acres of focus for one collaborative, with a median size of 27,683 acres.
- The Blue Mountains Forest Partners had collaborated on the largest number of total acres of any collaborative to date and had the most acres with a NEPA decision completed; other eastern Oregon groups that had been active for longer and worked in the context of wildfire risk reduction and resiliency were also affiliated with larger numbers of acres planned and implemented.

Implementation of collaboratively planned forest management activities

- To identify on-the-ground restoration outcomes from areas where collaboratives had engaged, we examined vegetation management activities affiliated with those planning areas. From federal fiscal years 2014-2019, the most acres (over 59,000) were treated through commercial sales. Other activities with the most acres implemented were piling of fuels and precommercial thinning. There was not a substantial increase in prescribed burning, which had been an area of focus for several collaborative groups on the east side who would like to return more fire to their landscapes. There also was not very much watershed-related restoration (under 5,000 acres), although this was likely underreported.
- The types and amounts of work largely varied by national forest and, for some activities, one or a few national forests were responsible for the majority of acres accomplished.
- The collaborative planning areas collectively yielded 66,378 planned timber sale acres. The FFR program goals include creating economic activity through timber sales.
- Many collaboratives also focused on non-commercial restoration work during the NEPA process, but funding and capacity challenges may have limited implementation of these activities. If outcomes in watershed restoration-related work remain limited compared to those in commercial timber sales, this may raise concerns for stakeholders who have participated in collaboratives to pursue these goals. The lack of reported acres burned also suggests that the application of prescribed fire is not yet commensurate with the interests of some collaboratives in returning fire to the landscape. More burning may appear in future examination as collaborative projects continue to be implemented.
- The challenge of obtaining complete data from Forest Service databases persists, limiting documentation of the entirety of collaborative-supported work implemented on federal forestlands. It also remains difficult to accurately attribute causality for Forest Service actions to collaboratives.

Economic impacts linked to collaboratives

- FFR Program grants supported jobs and income in a variety of economic sectors:
  - Use of the collaborative capacity grant funds themselves in the course of collaborative group activities supported about 11 jobs annually across the state between state fiscal years 2014-2019.
  - Timber sales associated with collaborative group involvement on specific planning areas supported about 1,019 jobs and $68 million in labor income during federal fiscal years 2014-2019. About one third of these jobs were in the forestry and wood products sector of the economy and the remainder were spread across other economic sectors that provide supplies and services to forest sector businesses and workers. As timber sale volumes have increased during the analysis period, the estimated number of jobs supported each year by those timber sales has also increased.

The role of collaboratives in accelerating restoration

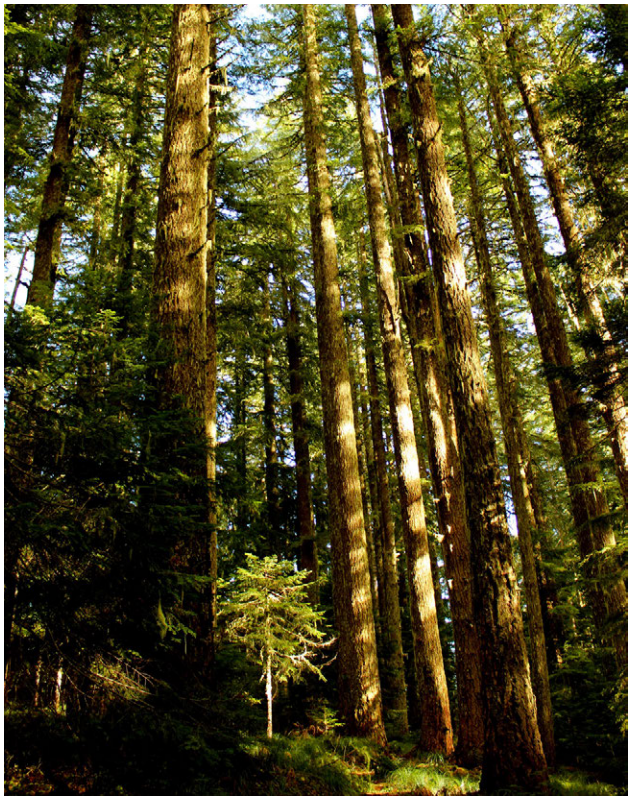
- Generally, groups that had been active for longer and were working in forest contexts with a need to reduce fire risk and restore resiliency were those that had the most acres planned and implemented, zones of agreement developed, and economic impacts evident from implemented work. These were also the groups that had received the most FFR Program grant funding, particularly given that the program did not cover the western portion of the state in its first biennium, and that eastside groups are generally older.
- Many other groups were younger in age and actively collaborating on projects that did not yet have a decision, so comparable impacts may not be realistically expected yet. In addition, the meaning of accelerated restoration and the ecological and socioeconomic contexts of different national forests appeared to have created differences in opportunities and challenges that groups faced. Given this, it may not be appropriate to expect all collaboratives to foster accelerated restoration in the same manner at this time.
- Regardless of a group's location or age, collaboratives were generally able to contribute to the quality of restoration by bringing a diversity of stakeholder values and scientific information to bear on dialogue.
- Some variables that affected the pace of restoration were not entirely or directly within collaboratives' control, or were outside the scope of the NEPA process. These included interdisciplinary team capacity or priorities, contracting processes, and markets. Moreover, the slower temporal pace of a project could sometimes indicate a focus on larger spatial areas and more complex resource issues. There is a need for more nuanced study and state-level dialogue about all factors that may slow the pace of restoration, not just the NEPA process; and collaborative contributions to pace should be evaluated relative to the extent of their actual activity and influence.

Creation or growth of new collaborative capacities from grant funds

- Grant funds were used to support the creation of new groups on the west side of the state, putting 1.8 million new acres into the boundaries of collaborative groups. This may lead to future restoration outcomes as these groups grow and projects planned with their input are implemented.
- Several groups developed stronger or more efficient governance structures with this funding, including new approaches to inter-collaborative organization.
- Several collaboratives used their funding for outreach and communications to increase public understanding of and support for their work. These included communications about prescribed fire, story maps, and a biomass summit.

Challenges

- Challenges that affected the capacity of collaboratives to achieve their goals included transition in Forest Service personnel and short-term detailing, and the effects of wildfires on implementation of collaboratively designed projects.
- A challenge for Forest Service personnel was the time investment often required to partner with collaboratives, particularly in locations with limited interdisciplinary team capacity trying to balance multiple demands.



Introduction

Over the past two decades, numerous forest collaborative groups have emerged in the state of Oregon. These groups function on the basis of dialogue among diverse stakeholders about their interests and values for forest management priorities on a given area of public forest land such as a ranger district or national forest. They may offer input: 1) before and during the analysis process required by the National Environmental Policy Act (NEPA process) as Forest Service units plan specific projects, 2) by making recommendations for the use of retained receipts from stewardship contracting, and/or 3) by providing zones of agreement, restoration principles, or other statements about management issues beyond the project scale. Although there is no official definition of what constitutes a "collaborative," some sources suggest there are over 25 groups currently active on all national forests in Oregon.[1] The U.S. Forest Service, state agencies, communities, and others have placed significant expectations on collaboratives. These include increased social agreement about forest management strategies, and concomitant ecological and economic outcomes as collaborative projects are accomplished. Yet identifying precisely if and how collaborative activities result in these outcomes remains challenging to thoroughly and clearly evaluate, as collaboratives do not own the federal land or hold any formal decision-making authority.

The state of Oregon created the Federal Forest Restoration Program (FFR Program) in 2013 (state fiscal year 2014) to accelerate restoration on Oregon's federal forestlands. "Accelerating restoration" has generally referred to the planning and implemen-

1 https://ewp.uoregon.edu/collaborativemaps; https://oregonexplorer.info/content/collaborative-directory.

tation of forest restoration activities over larger spatial areas and on quicker timelines, primarily to address forest health and economic needs. There is also some, often lesser, acknowledgement of the need to increase the quality of restoration outcomes using best-available science and monitoring. The program is administered by the Oregon Department of Forestry (ODF) and provides several types of investments and resources to support state-federal partnership and forest collaborative groups, and to provide technical assistance and science support. The state has expended a total of $10.6 million through this program since inception.[2]

One component of the FFR Program has been collaborative capacity grants, intended to contribute to the larger goal of increased federal forest restoration efforts by enhancing and strengthening the effectiveness of local collaborative groups. FFR Program investments in forest collaboratives have premised that collaboratives may aid in the pace, scale, and/or quality of restoration in various ways, including reducing litigation, increasing planning speed, developing stronger social support, and encouraging more acres to be treated. The FFR Program has awarded a total of $1.4 million to collaboratives through these grants from state fiscal years (SFY) 2014-2019. Grants are administered by the Oregon Watershed Enhancement Board in partnership with ODF, and are awarded one to two times annually through a competitive process.

Given this investment of public funds, and the expectations that collaboratives are a key component of accelerated restoration on federal forestlands, it is important to understand how collaboratives have used these grants and their outcomes. Prior monitoring of these grants solely reported their outcomes alongside all other FFR Program investments. Here, we provide a cumulative examination of the investment in collaborative capacity grants for the duration of the FFR Program in order to more completely analyze them, particularly to identify the contributions of collaboratives to accelerated restoration and other outcomes that may be valuable to stakeholders of federal forestlands.

Approach

First, we obtained collaborative capacity grant documentation for all grants awarded through the FFR Program across all biennia of its existence (SFY 2014 – 2019), available from the Oregon Watershed Enhancement Board (OWEB)'s Grant Management System (OGMS). This included grant proposals, periodic and final reports, expense reports, and supplemental materials. We reviewed these documents for each collaborative funded in this time period and coded them to identify activities, deliverables, and on-the-ground planning areas where collaboratives reported working (e.g., through dialogue, monitoring, or other means). We created a summary profile for each collaborative.

Second, we conducted interviews with a total of 32 individuals. We sought to interview the current facilitator(s)/coordinator(s) of each group (16), and at least one Forest Service or BLM partner who had worked actively with each group (16). Time and resource constraints as well as the focus on documenting outcomes excluded data collection with broader representation from each group. These interviews focused on verifying and clarifying information about collaboratives' activities and the planning areas on which they had collaborated. We also asked open-ended questions about if and how collaboratives were contributing to the pace, scale, and/or quality of restoration and about factors that impeded or aided their role(s) in accelerating restoration. Interviews were either recorded and transcribed, or detailed notes were taken. Transcripts and notes were then coded for key themes that helped answer these questions, as well as any emergent themes.

Third, we developed a database of all on-the-ground planning areas where collaboratives had provided input during times when they were funded by FFR Program collaborative capacity grants, as verified by interviews and grant documents. This included the names, acreages, and decision status of planning areas or other types of identified acres that had involved collaboration from federal

2 Santo, A., Huber-Stearns, H., Davis, E.J., and Policy Analysis Group. 2019. Monitoring Investments in Oregon's Federal Forest Restoration Program, FY 2014-2019. Ecosystem Workforce Program Working Paper #91. University of Oregon: Eugene, OR. Available at: http://ewp.uoregon.edu/sites/ewp.uoregon.edu/files/WP_91.pdf

fiscal years (FFY) 2014 through part of FFY 2019 (up to March 2019). Collaboration was defined as written or other recognized input provided on behalf of a collaborative group to the agency about a planning area following dialogue about planned activities. The nature of this input varied by collaborative group in terms of level of detail, and not all input represented full consensus as some of it included minority reports or other limitations to agreement. We then categorized these planning acres for which 1) a NEPA decision had not yet been made, 2) a NEPA decision had been made but implementation had not yet begun, and 3) implementation had begun.

Fourth, for those areas where a NEPA decision had been made and implementation was underway, we also obtained information about the location and types of implemented vegetation management activities using the Forest Service's Forest Activity Tracking System (FACTS) database in order to identify on-the-ground restoration outcomes that could be linked to planning areas where collaboratives had been engaged. We searched for the names of planning areas in the NEPA document name field, implementation project name field, and sale name field to locate data affiliated with these areas. Data for several projects with NEPA decisions completed in FFY 2017-2018 were not available, likely because the work had not yet begun or data were not yet entered. We did not have access to Bureau of Land Management (BLM) data for projects on the Medford district. We report these findings by FFY, as they were recorded in the database, which is different than the work we report by SFY (the items above).

Fifth, we performed economic impact analysis of all Forest Service timber sales implemented with collaborative input that were directly supported by the FFR Program's collaborative capacity grants from FFY 2014-2019. We obtained through interviews and follow-up queries with relevant Forest Service staff a list of the names of timber sales and planning areas that had included collaborative input and were supported by FFR Program grants. We compiled into a database the sale name, location, year sold, acreage, timber volume, product harvested, and bid value. The Policy Analysis Group at University of Idaho then used this information and the input-output model IMPLAN to estimate the economic impacts associated with the sequence of activities required to harvest, transport, and process sold timber. IMPLAN is a widely used economic model used to understand how a change within the economy of a place (the input) results in changes in economic activity in that place (the output). We assumed that volume sold is equal to the volume harvested. Because we do not know the exact location of where timber was processed into wood products, we assume that location was in the same county as the purchaser's location. Finally, although harvesting activity for a timber sale will be carried out over multiple years, we applied all the job and income effects of that sale to the sale year, consistent with prior analyses of federal forest restoration in Oregon.

Finally, we performed an economic impact analysis of the collaborative grant investments themselves from SFY 2014-2019. We reviewed grant budgets and final expenditure reports to estimate the amount of funding used for different categories of expenditures in each grant (i.e., staff, travel, materials/supplies, training) as well as matching cash and in-kind contributions made by partners. These results were compiled into a database. The Policy Analysis Group at University of Idaho used these estimates to conduct an input-output analysis using IMPLAN. Direct FFR Program expenditure line items were mapped to IMPLAN industry sectors (e.g., FFRP "training" expenditures were mapped to IMPLAN sector 611 "Educational Services") and IMPLAN state-level multipliers were applied to estimate the direct, indirect, and induced job, GDP, income, and output impacts.

Notes and limitations of approach

- The FFR Program did not define or mandate the meaning of "forest collaborative" although it began to require applicants to meet several criteria in order to apply for collaborative capacity grants (Appendix A, page 27). Therefore, the collaboratives included in this evaluation have some variation in their purpose, structure, activities, and outcomes.

- Not every entity identified as a forest collaborative by other sources (e.g., Forest Service Region 6 forest collaboratives directory or the Ecosystem Workforce Program collaboratives map) is included here, as this report concerns only groups receiving FFR Program grants.
- FFR Program collaborative capacity grants were a major source of funding, but groups had other sources of funding that also contributed to their outcomes.[3] Eighteen groups used FFR Program grants for 50 percent or more of their funding, and three used it for 100 percent. The FFR Program also provided technical assistance, science support, and support from ODF FFR Program staff to collaboratives outside of the capacity grants; the impacts of those other sources of support are not analyzed here.
- On-the-ground outcomes reported here as linked to collaboratives are not solely due to collaborative engagement, as they are accomplished through the Forest Service's own processes. Final decisions about land management and the authority to implement projects remains with the Forest Service.
- We do not analyze if there are more acres treated as a result of collaborative engagement because there are many variables that may affect changes in Forest Service accomplishments over time, which challenge effective causal analysis and ability to quantitatively identify impacts specific to collaborative involvement.
- The non-timber components of collaboratively planned projects will support jobs and income in addition to what we reported for timber sales. We have not reported that economic activity in this report because the information contained in federal contracting databases is insufficient to relate contracts to specific planning areas.
- It is likely that collaboratives have influenced management activities and other outcomes beyond what quantitative measures can track. This report qualitatively describes these impacts as they were found in interview data, but does not quantify them or link them to specific on-the-ground actions.

3 Davis, E.J., & Santo, A. 2019. The Financial Picture of Oregon's Forest Collaboratives. Ecosystem Workforce Program Working Paper #90. University of Oregon: Eugene, OR. Available at: http://ewp.uoregon.edu/sites/ewp.uoregon.edu/files/WP_90.pdf

Overview of collaborative capacity grants

From SFY 2014-2019, the FFR Program awarded a total of $1.4 million in collaborative capacity grants to 21 forest collaborative groups active on ten national forests and one BLM district (Appendix B, page 28). Collaborative grants composed 14 percent of the total FFR Program spending of all types during this time period. Spending on collaborative grants averaged $238,914 per year. Individual grants ranged in size from $10,725 to $73,715, with a median amount of $39,744. Over the six years of the program, partners provided an additional total of $2.5 million in documented matching funds or in-kind support to activities that these grants supported. This was 60 percent of all documented matching funds generated for the entire FFR Program.[4]

For the first biennium (SFY 2014-2015), the FFR Program only funded work on national forests and collaboratives in "dry side" landscapes of eastern and southern Oregon (Rogue River-Siskiyou, Fremont-Winema, Deschutes, Ochoco, Umatilla, Malheur, Wallowa-Whitman national forests). The FFR Program was expanded to cover all national forests and BLM districts in the state for the following two biennia. However, the majority of total collaborative capacity grant funding since the program's inception (62 percent or $892,820) was awarded to seven collaborative groups on eastside forests and twenty-two percent went to two collaborative groups on the Malheur National Forest (Table 1, below). Eleven westside groups received $349,814, and three southern Oregon groups received $190,850.

Collaborative capacity grants funded activities such as: collaborative facilitation and coordination of collaborative processes for specific projects, technical assistance, science support, monitoring, outreach, and communications. Allowable expenditures included collaborative staff wages, contracted services, materials and supplies, travel, and administrative costs.

Table 1 Federal Forest Restoration Program collaborative capacity grants by national forest (geographic focus of grants determined by location of funded collaboratives)
Source: OWEB

National forest	SFY 14-15	SFY 16-17	SFY 18-19	Total
Malheur	$185,894	$24,999	$101,538	$312,431
Deschutes	$46,325	$74,024	$48,641	$168,990
Willamette	$0	$90,228	$62,338	$152,566
Rogue River-Siskiyou	$88,626	$42,752	$19,800	$151,178
Ochoco	$51,246	$49,298	$48,708	$149,252
Wallowa-Whitman	$73,208	$49,569	$18,493	$141,270
Mt. Hood	$0	$88,532	$50,000	$138,532
Umatilla	$82,125	$8,750	$18,493	$109,368
Siuslaw	$0	$39,795	$18,921	$58,716
BLM	$19,872	$0	$19,800	$39,672
Fremont-Winema	$0	$11,509	$0	$11,509
Total	**$547,296**	**$479,456**	**$406,732**	**$1,433,484**

4 Documented in-kind investments for the entire FFR Program include $4.0 million from federal and local government partners, collaborative group members, NGOs, foundations, and other partners; however, in-kind contributions were undocumented for many FFR Program investments. Additional contributions may not be captured.

Findings

Collaborative restoration, timber sale, and economic outcomes

This section examines on-the-ground and economic outcomes from the planning and implementation of Forest Service projects that had collaborative input funded by FFR Program collaborative capacity grants. Collaborative input for the purposes of this study means that a collaborative held dialogue about, and developed collective stakeholder statements for, management priorities on planned projects. We identified projects that met these criteria through grant documentation, interviews, and Forest Service records. On-the-ground and economic outcomes presented here include: acres planned, acres monitored, acres implemented and types of restoration activities completed, timber sales and their economic impacts, and the economic impacts of the capacity grant dollars themselves.

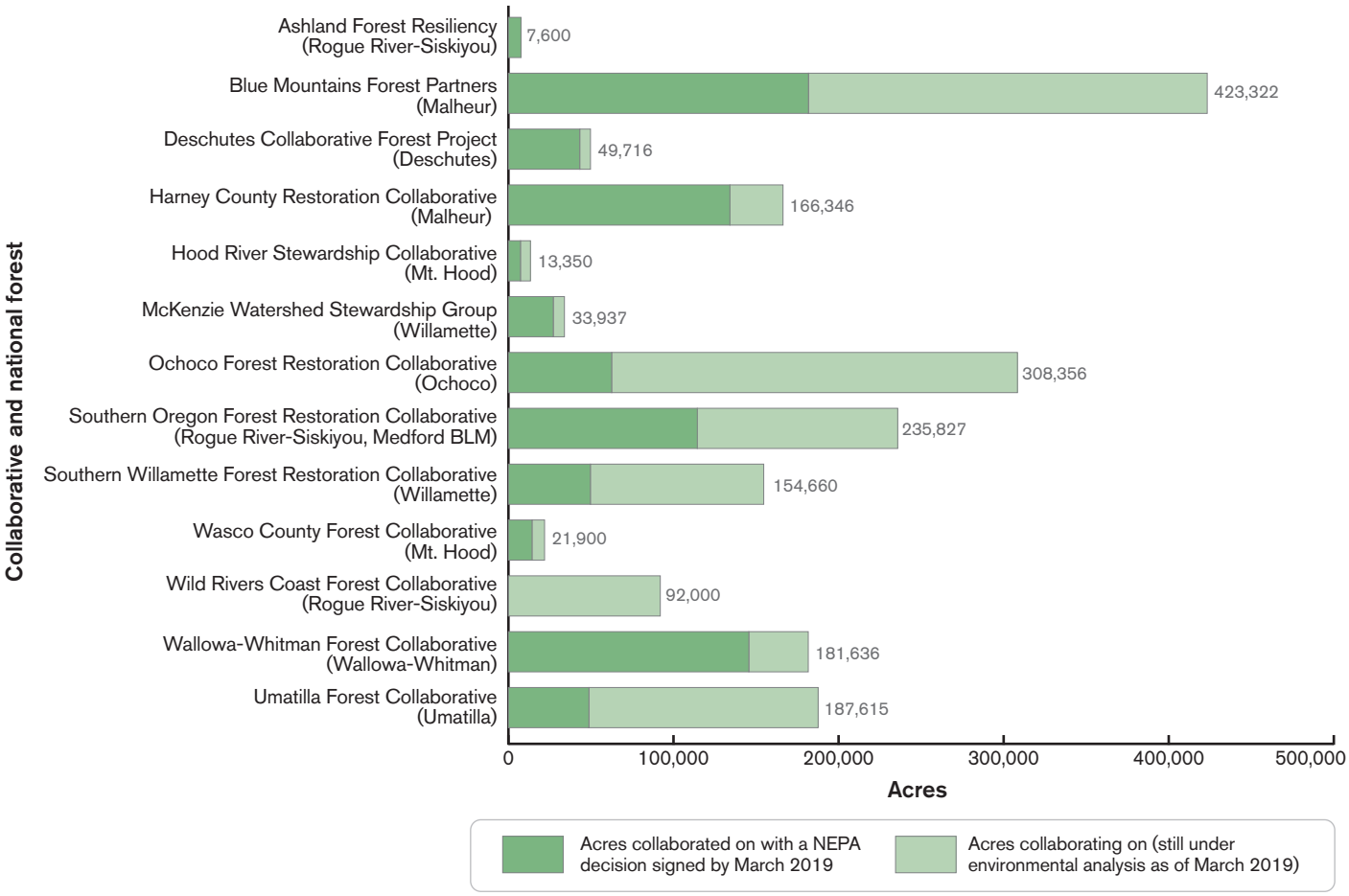
Planning acres supported by collaborative input

From FFY 2014-2019, collaboratives funded by the FFR Program collaborated on nearly 1.9 million acres of federal forest land across ten national forests and one BLM district (Figure 1, below; Appendix C, page 29). Of these acres, 836,525 were planning areas or other projects for which a NEPA decision was made by March of 2019. Over one million acres were actively being collaborated on but were still under analysis by March 2019. The acreage statistics used here are based on the acres included in relevant NEPA analyses; the footprint that ultimately receives treatment within a planning area is smaller.

The sizes and types of projects that groups collaborated on varied by national forest and region within the state. Projects ranged in size from a 40-acre timber sale to a multi-forest environmental impact statement analysis process that included 230,000 acres of focus for one collaborative. The median size of a collaborative project was 27,683 acres. The Blue Mountains Forest Partners collaborated on the largest number of total acres to date of any group, and had the most acres with a NEPA decision completed.

In addition to collaborating on new projects, several collaboratives conducted monitoring with FFR Program funding on a total of at least 67,207 acres

Figure 1 Acres collaborated on by groups receiving FFR Program collaborative capacity grants*, FFY 2014-2019



** These acres are those that collaboratives worked on with FFR Program grant support. Other acres may have been accomplished but could not be linked to the FFR Program's investment.*

of projects that had NEPA decisions prior to FFY 2014. Since these groups did not actively collaborate in the NEPA/decision making stage of these projects during the FFR Program, these acres are not counted in the total above, but are an additional project footprint to note.

The FFR Program also funded several collaborative groups whose activities were not possible to report in acres. Collaboratives on the Siuslaw National Forest were funded to create two new stewardship groups, support the ongoing work of four existing stewardship groups, map accomplished stewardship projects on public and private lands, and assess the potential for a forest-wide collaborative group. In addition, the South Santiam All-Lands Collaborative received grant funding to collaborate on the Trout Creek planning area on the Sweet Home Ranger District of the Willamette National Forest. This collaborative process was not completed and the group has since disbanded. Acres are therefore not reported for this group.

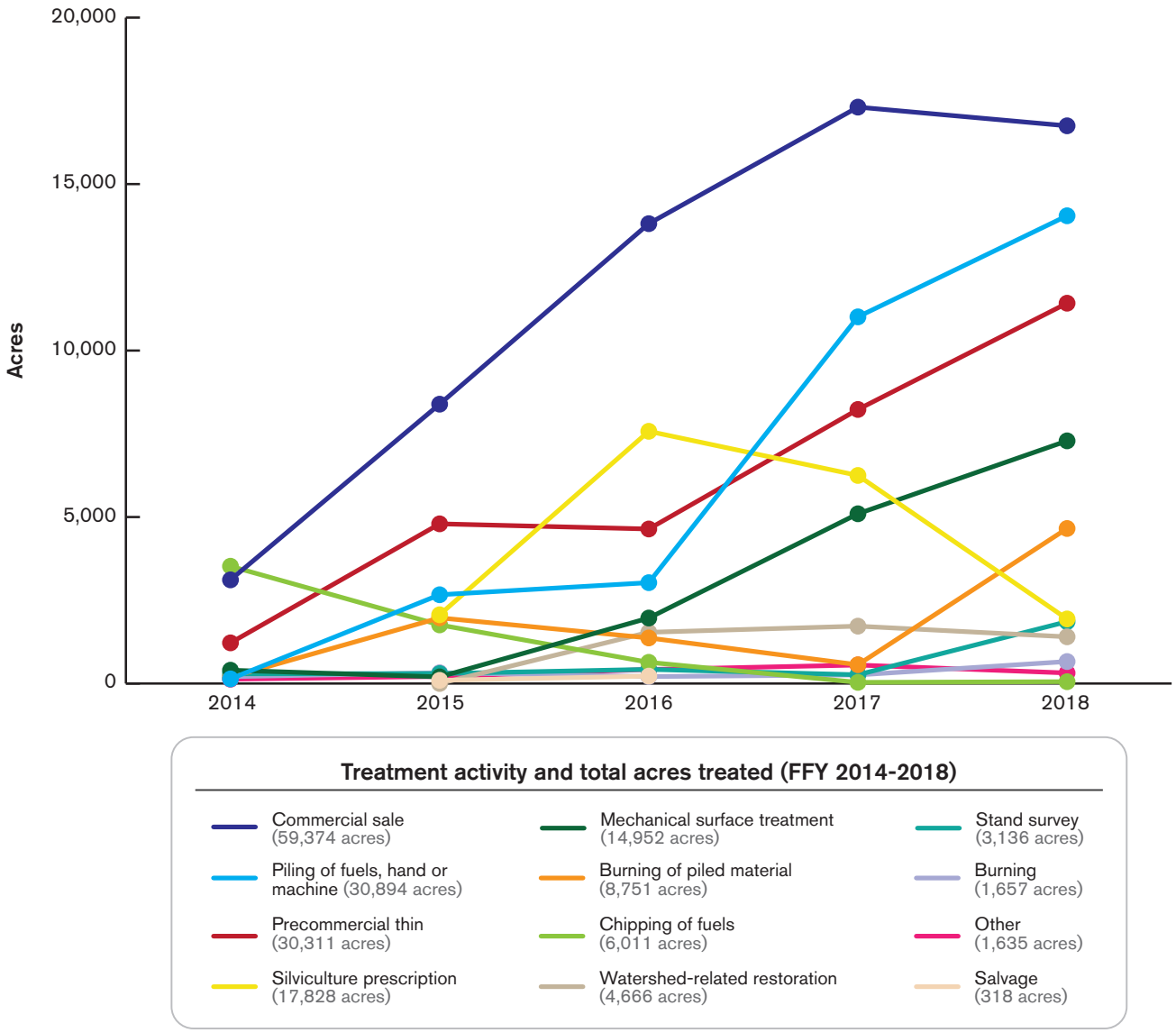
Implementation of collaboratively planned forest management activities

To identify on-the-ground restoration outcomes that could be linked to planning areas where collaboratives had engaged, we examined the location and types of implemented vegetation management activities using the Forest Service's Forest Activity Tracking System (FACTS) database for FFY 2014-2018. Very little activity has been yet recorded for FFY 2019 so it is not included. There are several important notes related to these data. First, as this study focuses on the impacts of collaboratives funded by FFR Program grants, outcomes are only those linked to these funded collaboratives; they are not the entire restoration accomplishments of Forest Service units. Second, acres are counted by activity in FACTS; therefore, an acre can be counted repeatedly each time it receives a different activity treatment, and numbers of acres across activities cannot be summed across activities for a national forest unit or to the state. Acres can be summed within activity type. Third, although

FACTS is intended to be an official record of forest accomplishments, resource area staff within individual units and across units likely differ in the extent to which they fully report their activities in FACTS. Therefore, FACTS data likely underestimate non-commercial activities related to watershed-restoration activities due to underreporting. Fourth, there is lag time between a NEPA decision and implementation such that on-the-ground impacts of collaborative planning can take several years to occur and be observable. Data for several projects with NEPA decisions completed in FFY 2017- 2019 were not available, likely because the work had not yet begun or data were not yet entered. Finally, as we did not have access to BLM data for projects on the Medford district, these impacts are not included.

Over the analysis period FFY 2014-2018, the greatest number of acres (over 59,000) were treated through commercial sales (Figure 2, below). Other activities that were implemented on the most acres

Figure 2 Acres of vegetation management activities accomplished by type of treatment for collaboratively planned projects on all national forest units with collaborative involvement, FFY 2014-2018
Source: FACTS



were piling of fuels and precommercial thinning. The activities implemented on the fewest acres were salvage harvesting, burning, and an amalgamation of other activities with limited individual acreages.[5] There was not an increase in prescribed burning, which has been an area of focus for several collaborative groups on the east side who would like to return more fire to their landscapes. There also was not very much watershed-related restoration (under 5,000 acres), although as noted above, this was likely underreported.[6] Interviews provide additional insight, as they showed that many collaboratives have focused on non-commercial restoration work during the NEPA process, but that funding and capacity challenges may have limited implementation of these activities, creating a backlog of non-commercial work to be accomplished.

The types and amounts of work largely varied by national forest (Table 2, below; Appendix D, page 30). For some activities, one or a few national forests were responsible for the majority of acres accomplished. For example, the Malheur National Forest performed 41 percent of the commercial sale acres, and the Deschutes National Forest performed over a quarter. Both of these forests have Collaborative Forest Landscape Restoration projects, which may have contributed to their ability to accomplish these acres. Nearly all of the reported watershed restoration-related acres came from the Wallowa-Whitman National Forest. No treatments of any collaboratively planned acres were reported as accomplished on the Mt. Hood National Forest and a limited number were reported on the Willamette National Forest at the time of this writing. This likely reflects the more recent formation of forest collaboratives on these forests, as these groups have not had as long as groups in other locations to work together and plan projects that would be implemented by the time of this study.

Table 2 Acres of forest management activities accomplished for collaboratively planned projects on all national forest units with collaborative involvement, FFY 2014-2018
Source: FACTS

Activity	Total acres of activity accomplished on all forests	National forest with largest proportion of acres of this activity accomplished
Commercial sale	59,374	Malheur (41%)
Piling of fuels, hand or machine	30,894	Malheur (35%)
Precommercial thin	30,311	Deschutes (35%)
Silviculture prescription	17,828	Umatilla (74%)
Burning of piled material	8,751	Rogue River-Siskiyou (52 %)
Mechanical surface treatment	7,607	Wallowa-Whitman (61%)
Chipping of fuels	6,011	Deschutes (100%)
Watershed-related restoration	4,666	Wallowa-Whitman (99.9%)
Stand survey	3,136	Deschutes (68%)
Burning	1,657	Deschutes (83%)
Other	1,635	NA
Salvage	318	Deschutes (100%)

5 Other activities grouped included animal damage control for reforestation, planting trees, plantation survival survey, pruning to raise canopy height and discourage crown fire, revegetation planning and preparation, seeding (of grasses/shrubs/forbs), site preparation for natural regeneration, and natural ignition of wildfire.

6 Activities in this category were watershed resource non-structural improvements maintenance and inland fisheries habitat improvement activities.

Economic impacts of collaboratively planned timber sales

Through document review and interviews, we identified 73 collaboratively planned timber sales across 57 planning areas that were directly supported by collaborative capacity grants from the FFR Program. We are unable to assess if these sales would have happened absent collaborative involvement. These timber sales represented 66,378 of planned timber sale acres, 565 million board feet of timber volume, and $25.5 million in sale value. An additional 12 collaboratively planned sales were in development at the time of publication and therefore not included in this analysis. We did not have access to information about five collaboratively planned timber sales (one Forest Service, four BLM) that were supported by collaborative capacity grants. These sales are excluded from this analysis. The non-timber components of collaboratively planned projects will support jobs and income in addition to what we report here for timber sales. We have not reported that economic activity here because the information contained in federal contracting databases is insufficient to relate contracts to specific planning areas.

The number of collaboratively planned timber sales offered each year grew between FFY 2014-2019, leading to 19 sales in FY2018 (Table 3, below). In this time period, average annual sale volume for collaboratively planned sales was about 97 million board feet.

On average, the timber sales that collaboratives contributed to using FFR Program collaborative capacity grants have supported an average of about 1,019 jobs per year and $68 million in labor income per year between FFY 2014 and 2019 (Tables 4 and 5, page 15). On average, about one third of these jobs were directly related to work in the woods harvesting timber or in the mills processing timber. The remaining two thirds of these jobs, on average, were related to supplying goods and services to logging and mill businesses and their workers. The scale of these job and income estimates are consistent with what was found in prior analyses focused specifically on the Forest Service Eastside Restoration effort.[7]

Economic impacts of collaborative grant dollars

The impacts of the FFR Program's $1.4 million of investment in collaborative capacity grants and $2.5 million in partner contributions extend beyond the direct funds themselves. The spending of these funds creates ripple effects that extend out into the economies around the collaborative groups. From SFY 2014 through 2019, FFR Program allocation averaged $0.2 million per year. This includes staff and contractor wages, purchases of materials and supplies for collaborative organization, travel spending, and other expenses related to operating collaboratives. It does not include on-the-ground work that collaboratives may have supported. The impacts of this spending and associated matching contributions supported about 11 jobs per year across Oregon (Table 6, page 15).

Table 3 Number of timber sales and volume sold by year, FFY 2014-2019
Source: TIM

	FFY 2014	FFY 2015	FFY 2016	FFY 2017	FFY 2018	FFY 2019[8]
Number of timber sales	2	7	10	14	19	4
Sale volume (million board feet)	14.5	154.3	63.2	97.5	154.3	76.0

7 See: White, E.M., Bennett, D.E., Davis, E.J., & Moseley, C. 2016. Economic outcomes from the U.S. Forest Service Eastside Strategy. Ecosystem Workforce Program Working Paper #64. Available at: http://ewp.uoregon.edu/sites/ewp.uoregon.edu/files/WP_64.pdf.

8 Data presented for 2019 represent only timber sales sold in the months of January – April 2019.

Table 4 Direct and secondary jobs supported by harvesting and wood products manufacturing activities, in number of jobs, FFY 2014-2019
Source: IMPLAN

		FFY 2014	FFY 2015	FFY 2016	FFY 2017	FFY 2018	FFY 2019[9]
Jobs effect		Number of jobs					
Direct effects	Harvesting activities	28	298	122	188	298	147
	Wood products	48	508	208	321	508	251
Secondary effects	Harvesting activities	24	254	104	160	254	125
	Wood products	55	586	240	371	586	290
Total	**Harvesting activities**	**52**	**552**	**226**	**348**	**551**	**272**
	Wood products	**103**	**1,095**	**448**	**692**	**1,094**	**540**
	TOTAL	**155**	**1,647**	**673**	**1,040**	**1,645**	**812**

Table 5 Direct and secondary labor and proprietor income supported by harvesting and wood products manufacturing activities, in millions of dollars of labor income, FFY 2014-2019
Source: IMPLAN

		FFY 2014	FFY 2015	FFY 2016	FFY 2017	FFY 2018	FFY 2019[10]
Income effect		Millions of dollars					
Direct effects	Harvesting activities	$1.5	$15.7	$6.4	$9.9	$15.7	$7.8
	Wood products	$3.5	$37.1	$15.2	$23.4	$37.1	$18.3
Secondary effects	Harvesting activities	$1.9	$20.2	$8.2	$12.8	$20.2	$10
	Wood products	$3.8	$40.4	$16.5	$25.5	$40.3	$19.9
Total	**Harvesting activities**	**$3.4**	**$35.9**	**$14.6**	**$22.7**	**$35.9**	**$17.8**
	Wood products	**$6.9**	**$73**	**$29.8**	**$46.1**	**$73**	**$36.1**
	TOTAL	**$10.3**	**$108.9**	**$44.4**	**$68.8**	**$108.9**	**$53.9**

Table 6 Average annual Collaborative Capacity Grant investments made through the Federal Forest Restoration Program and estimated economic impacts of grant dollars spent, SFY 2014-2019
Source: OWEB and IMPLAN

Biennium	State fiscal year	Expenditures	Partner matching contributions	Jobs
SFY 2014-2015	SFY 2014	$53,774	$120,149	3.0
	SFY 2015	$361,293	$848,604	20.0
SFY 2016-2017	SFY 2016	$229,211	$273,988	8.2
	SFY 2017	$284,720	$467,079	12.4
SFY 2018-2019	SFY 2018	$186,442	$341,672	8.9
	SFY 2019	$318,045	$442,422	13.0

9 Data presented for 2019 represent only timber sales sold in the months of January – April 2019.

10 Data presented for 2019 represent only timber sales sold in the months of January – April 2019.

The relationship between collaboratives and accelerated restoration

"Accelerating restoration" has generally referred to the planning and implementation of forest restoration activities over larger spatial areas and on quicker timelines, primarily to address forest health and economic needs. There is also some, often lesser, acknowledgement of the need to increase the quality of restoration outcomes using best-available science and monitoring. FFR Program investments in forest collaboratives have premised that collaboratives may aid in the pace, scale, and/or quality of restoration. Yet identifying precisely if and how collaboratives themselves can accelerate restoration remains challenging to thoroughly and clearly evaluate, given that collaboratives do not own the federal land or hold any formal decision-making authority. There are significant obstacles to determining if collaboratives have changed how the Forest Service and BLM would have done business as usual, as the nature of forest management projects on public land can shift over time due to many factors. There have been some attempts to measure this and to track planned projects with collaborative involvement.[11] However, these do not delve into how collaboratives operate, nor what, if anything, about their activities may contribute to pace, scale, and quality of restoration. In this report, we use qualitative interview data and document analysis to descriptively examine this.

11 See Summers, Brent M., "The Effectiveness of Forest Collaborative Groups at Reducing the Likelihood of Project Appeals and Objections in Eastern Oregon" (2014). Master of Environmental Management Project Reports. 41. https://pdxscholar.library.pdx.edu/mem_gradprojects/4.; and the Federal Forest Working Group Dashboard, http://orsolutions.org/wp-content/uploads/2011/08/Dashboard-1-31-17-version.pdf.

Pace of restoration

We found that the reported pace of planning and implementing NEPA projects with input from forest collaboratives varied among the FFR Program grant recipients. The ability of a project to move through the NEPA process in a timely fashion appeared to depend on a combination of Forest Service and collaborative group factors, but could not be solely attributed to collaboratives themselves. Factors affecting the pace of this process were more often related to Forest Service actions and capacities. Some Forest Service interviewees indicated that having a collaborative had been an efficient way for them to obtain input from multiple stakeholders at once, but they could not quantify the extent of that efficiency improvement.

In some cases, it appeared that agency staff were planning projects on timelines that they viewed as accelerated relative to years prior when they were not working with an engaged collaborative. One example is the Malheur National Forest, which began collaborating with the Blue Mountains Forest Partners in 2006 and Harney County Restoration Collaborative in 2008. Since that time, the Malheur has also received a Collaborative Forest Landscape Restoration project designation, funding to support a ten-year stewardship contract, and increased agency staff capacity. Having more extensive resources to help implement projects, as well as two engaged collaborative groups, spurred the creation of a pipeline of planning areas and provided additional impetus for keeping NEPA processes moving that did not exist prior to collaboration.

Another example of a perceived effect of a collaborative on pace of restoration was the Wolf project on the Ochoco National Forest. This project was not slowed by objections or litigation, which interviewees attributed to the Ochoco Forest Restoration Collaborative's involvement and incorporation of multiple stakeholder interests. Most other interviewees did not mention the ability of collaboratives to deter objections or litigation as a factor in the pace of their projects, although this is a commonly-cited assumed benefit of collaboration more broadly.

In other instances, forest collaboratives and their local Forest Service units had been collaborating on planning areas for several years, and in interviews recognized that they arguably were not working on what could be considered an accelerated timeline. One group, the Wild Rivers Coast Collaborative, had been focusing on the 92,000-acre Shasta-Agness planning area on the Gold Beach Ranger District of the Rogue-River Siskiyou National Forest for five years at the time of this study, and no decision had yet been made. Several factors helped explain why, including the relatively large size of the planning area, the focus on integrated management of multiple resources which increased complexity, the use of an environmental impact statement process which required more analysis, and turnover in Forest Service staff and collaborative leadership. This group also formed more recently (2014) and was still developing its capacities and relationships.

Another identified example of a project that took several years was the Rocky Burn project. The Wasco County Forest Collaborative and Barlow Ranger District of the Mt. Hood National Forest collaborated from 2015 to early 2019 on this project before a decision was reached. In this instance, the group was also new, having formed in 2015, and this was its first project. The national forest was also experiencing some turnover of staff. But other factors affected completion of Rocky Burn, including the decision of Mt. Hood National Forest leadership to refocus interdisciplinary team attention on another planned project instead of Rocky Burn for a time period. This also affected the progress of the Hood River Stewardship Collaborative on the Waucoma project, as the two ranger districts on the East Zone of the Mt. Hood National Forest share a single interdisciplinary planning team (ID team). These examples show how forests or districts with limited ID team capacity may be challenged to balance multiple NEPA processes at once, and may see the need to prioritize projects outside of those underway through their collaborative groups.

Once a NEPA decision is made, it still takes time begin project implementation. Time to implementation depends on a number of factors, including:

- A Forest Service unit's existing workload and other projects in line
- Shifts in priorities, which may occur due to changes in leadership and direction, or wildfires or other disturbances in the area
- The capacity of Forest Service staff to prepare the ground for restoration and timber sale activities
- The completion of contracting and timber sale processes
- The need to stage and stagger different types of activities over time and across an area
- Contractual multi-year windows for implementation that allow contractors and timber purchasers discretion about when to perform the work
- Changes in markets, which can also drive when and where contractors and timber purchasers choose to perform work.

It is also important to note that most collaboratives have primarily used their grant dollars to focus on planning, not implementation, and thus far, there were not clear roles for collaboratives in implementation on federal forestlands aside from monitoring. It can take years before the Forest Service implements the projects that collaboratives engaged with during planning phases, and this delay is often due to variables beyond the collaboratives' control. Collaborative interviewees described concern that their work was creating an increasing "backlog" of NEPA-ready acres, but not leading to rapid or complete implementation of all planned restoration activities. They expressed interest in becoming more involved in implementation stages to address this issue.

Scale of restoration

"Scale" in the context of accelerated restoration has typically referred to the spatial size of planning areas. As previously noted, planning areas that individual collaboratives have worked on in FFY 2014-2019 ranged in size from a 40-acre timber sale to a multi-forest environmental impact statement analysis process that included 230,000 acres of collaborative focus. The median size of a collaborative planning area in this study was 27,683 acres. As with the pace of restoration, the scale of planning areas varied by national forest and region, and is even more dependent than pace on local context, including factors such as forest type and watershed boundaries. Not all collaboratives were subsequently taking on larger planning areas during this time. For example, the Deschutes Collaborative Forest Project worked on a planning area of 22,000 acres early in the study period, but subsequent planning areas for collaboration on that forest have been under 10,000 acres. Some groups were taking on larger areas, but the definition of "larger" was relative to their context; moving to planning areas of 6,000 and 7,000 acres was a change from past projects of around 2,000 acres in size for the Hood River Stewardship Collaborative working on the Mt. Hood National Forest.

Determining the extent and size of planning areas appeared to be an arena wherein most forest collaboratives did not directly engage. Interviews with Forest Service staff indicated that there is a general sense of the need to "plan bigger" that came from both their own leadership and collaboratives. For some forests, this meant not only choosing larger planning areas than their unit had historically analyzed, but also planning a footprint of more acres for treatment within those areas. Many factors affected the size and location of a planning area. The identification of future planning areas through five-year vegetation management plans or other longer-term planning processes seemed to be areas of agency decision-making where most collaboratives have not participated. More commonly, the Forest Service or BLM approached a collaborative group with an invitation to collaborate on an already-identified planning area. However, several planning areas currently under analysis with collaborative involvement are close to or exceed 100,000 acres in size, and the size of these planning areas was in part determined by collaborative interest and the scale of perceived restoration needs. Several groups from different ecological contexts across the state were working on planning areas of

this size: Ochoco Forest Restoration Collaborative, Southern Willamette Forest Collaborative, Umatilla Forest Collaborative Group, Wallowa-Whitman Forest Collaborative Group, and Wild Rivers Coast Forest Collaborative.

Increasing the size of landscapes planned for restoration also occurred through other means than growing the size of individual planning areas. During the study period, the Forest Service's Region 6 office created an ID team dedicated to increasing pace and scale by planning larger projects. This team worked on one planning area on the Wallowa-Whitman National Forest, and was preparing a three-forest environmental impact statement for "dry forest restoration" for several years. Examination of this process is beyond the scope of this study and it was not a FFR Program initiative, although two collaboratives did engage with this team's projects during this study period (Ochoco Forest Restoration Collaborative and Wallowa-Whitman Forest Collaborative).[12]

Another instance of engagement in landscape-scale collaboration with the potential to affect large acreages was the leadership of the Southern Oregon Forest Restoration Collaborative (SOFRC) and other area partners in developing the Rogue Basin Strategy, a multi-stakeholder, science-based framework assessing wildfire risks, articulating landscape resiliency objectives, and modeling treatment scenarios for the 4.6 million-acre basin. They then developed the Rogue Forest Restoration Initiative to launch the Strategy through several new cross-boundary restoration projets. SOFRC's development of a broad strategy at this scale was unique among the collaboratives in this study.

Quality of restoration

Interviewees perceived that collaboratives improved the "quality" of restoration on federal forestlands, more so than increasing pace or scale. Collaborative contributions to quality centered on their ability to apply scientific information to the planning of restoration activities. Many groups engaged science advisors or contracted scientists to synthesize existing knowledge about a particular topic or management question, develop a scientific basis for zones of agreement, hold workshops, and/or conduct new research in their area through both the collaborative grants and other FFR Program funding dedicated to science support. This allowed the Forest Service to plan projects with consideration of additional scientific knowledge,

12 See: Huber-Stearns, H. & Santo, A. 2018. Restoring Resilience at the Landscape Scale: Lessons Learned from the Blue Mountains Restoration Strategy Team. Ecosystem Workforce Program Working Paper #89. Available at: https://ewp.uoregon.edu/sites/ewp.uoregon.edu/files/WP_89.pdf.

and provided essential information to collaborative members to learn more about the scientific basis for various management issues as they weighed their interests and values. Grant funds were also used to monitor implementation and build new knowledge. Collaboratives that most regularly engaged with scientific information and scientists with FFR Program grants included the Blue Mountains Forest Partners (supporting a regular science advisor working on several issues), Deschutes Collaborative Forest Project (participating in a fire history study for a planning area), and other groups who monitored the effects of prescriptions that were being implemented (Harney County Restoration Collaborative, Lakeview Stewardship Group, McKenzie Watershed Stewardship Group).

Another way in which some collaboratives contributed to what was viewed as improved quality of restoration was by bringing attention to multiple resource values, habitat types, and management goals. The diversity of stakeholder interests in a group helped bring these different considerations into dialogue and project design. For example, the Wild Rivers Coast Forest Collaborative was collaborating on the Shasta-Agness planning area with an integrated resource focus including activities for oak restoration and resilience, in-stream restoration, and beaver dam analogues in addition to vegetation management. This complexity contributed to a longer timeframe for the NEPA process, but was also seen as important for strengthening the project's ability to produce robust forest and watershed restoration outcomes. A further example of collaborative work that bridged forest and watershed restoration was the work of the McKenzie Watershed Stewardship Group in making decisions to help fund floodplain restoration work with retained receipts from stewardship contracting. On the east side, the Ochoco Forest Restoration Collaborative's work on dry forest recommendations helped the Ochoco National Forest start planning more acres for treatment within planning areas, including areas without commercial value such as aspen stands and riparian areas.

Zones of agreement

Many collaboratives have focused on developing collective input or agreements about specific planning areas, but we found that some have also increasingly focused on "zones of agreement." This term is widely used to refer to collaborative input articulated at the scale of a resource, forest type, or issue beyond the boundaries of a single planning area. An ostensible goal of creating zones of agreement has been to provide the agency with a sense of the group's input on various topics applicable across large areas and forest types, such that they might not need to collaborate in detail on every planning area, and could arguably plan and implement projects more rapidly.

The term "zones of agreement" appears to have been first used in Oregon by the Blue Mountains Forest Partners (BMFP) to describe common principles, scientific knowledge, and agreements that group members held on issues across planning areas.[13] Since then, BMFP has developed six zones of agreement documents for upland forest, moist mixed conifer, riparian areas, aspen, mountain mahogany, and goshawk habitat. Other groups that have completed similar documents to date are located on the east side of the state. The Deschutes Collaborative Forest Project has developed restoration principles for several different plant association groups that are akin to zones of agreement, in addition to collaborating on individual planning areas, and the Ochoco Forest Restoration Collaborative developed zones of agreement for dry forest restoration and aspen. Forest Service interviewees described being able to use the zone of agreement documents that collaboratives had provided to better inform their development of new projects to reflect collaborative values from the start. Many other groups had received grant funds for working on zones of agreement in their FFR Program grant documentation, primarily for certain forest or wildlife habitat types and wildfire issues, but had not yet reported completion of these agreement documents by the time of this study.

13 Nuss, M., & Davis, E. J. (2015). Formalizing decisions: A case study on collaborative zones of agreement. Available at: https://ir.library.oregonstate.edu/concern/technical_reports/rb68xd15x.

Collaborative capacity outcomes

This section examines how FFR Program grants affected the organizational capacities of forest collaboratives based on grant documentation and interview data. Organizational capacities include how groups are formed, how they maintain their ability to operate, and their ability to perform functions such as outreach to build support for forest restoration.

Creation and support of collaborative venues

FFR Program collaborative capacity grants directly supported the creation of four new forest collaborative groups between 2015 and 2017: Smith/Umpqua Dunes Stewardship Group, Oregon Dunes Restoration Collaborative, Southern Willamette Forest Collaborative, and Wasco County Forest Collaborative. Together, the areas of focus or boundaries for these groups covered about 1.8 million acres of national forest and adjacent private lands in western Oregon and the Cascades. The grants helped provide these new venues for sustained stakeholder engagement in areas that previously lacked durable collaborative groups. Collaborative grants also provided key early support to other collaboratives that helped to develop their operation.

Growth of existing organizational capacities

Collaborative capacity grant funds were used to develop stronger or more efficient governance structures. Two sets of adjacent collaboratives used FFR Program grants to build more joint administration and facilitation of their groups. The Wallowa-Whitman Forest Collaborative and Umatilla Forest Collaborative Group, which had many of the same members and some shared issues of interest, combined administration and engaged the same facilitator for both groups. The Hood River Stewardship Collaborative and the Wasco County Forest Collaborative did the same by creating a joint committee and new processes for inter-group communication and by contracting the same facilitator; and stewardship groups on the Siuslaw National Forest analyzed and discussed the possibilities for a forest-wide collaborative. The goals of both these efforts were to create more efficient organizational capacity for collaboration across a shared region, and to possibly apply existing relationships and agreements across larger landscapes more effectively. Several other groups used grants to improve their efficiency by establishing or updating their organizational structures. The Harney County Restoration Collaborative was developing a new operational manual and more formal processes in 2018-2019, and the Southern Willamette Forest Collaborative created a set of standing committees to work more continuously on issues of interest across planning areas and projects.

Public outreach and communications

Several collaboratives and Forest Service partners saw a need for outreach and communications to increase public understanding of their work, and ideally to build more agreement and support. One example was the Deschutes Collaborative Forest Project, which leveraged funding from other sources and the FFR Program to implement a multifaceted communications program that focused on themes such as the need for prescribed fire and proactive communication about related smoke in the nearby community of Bend. Interviewees felt that increasing public tolerance of prescribed fire smoke could create opportunities to use this restoration treatment on more acres in the future. Other efforts included the creation of story maps and related tools for documenting restoration needs and accomplishments, which were underway with stewardship groups on the Siuslaw National Forest and with the Southern Oregon Forest Restoration Collaborative. These tools were seen as important ways to share the story of forest restoration with new audiences while also tracking outcomes. Another outreach and education event supported was a regional biomass summit that the Ochoco Forest Restoration Collaborative organized in central Oregon. This event attracted over 100 participants to examine examples of successful biomass utilization as well as barriers to biomass use.

Challenges and limitations facing collaborative groups

This section discusses challenges that collaborative groups and Forest Service partners reported facing in their work that they felt had affected their ability to contribute to accelerated restoration.

The primary challenge identified across most groups, regardless of their location, was transition in Forest Service personnel. The "turnover" of key staff who typically engaged with collaborative processes, such as NEPA planners or natural resource specialists, was a particularly acute issue. As staff changed, they had varied comfort levels with collaboration and work styles for interacting with collaboratives. Repeated short-term "detailing" into these and other positions created further instability, as the challenge of building new relationships would then occur every few months. Some Forest Service interviewees described how their collaboratives were essential in the face of this change as they could provide collective memory, help orient new staff, and ensure some continuity or momentum in planning. However, collaborative participants were taxed by this situation and felt that it contributed to delays in the timeline of some projects.

Another challenge to collaborative work was the effects of disturbance events. Wildfires occurring locally could shift a planned project or delay the work of an interdisciplinary team by several months. This occurred most recently on the Willamette and Deschutes National Forests, which experienced several large, longer-term fires simultaneously across their landscapes in 2017. Fires and smoke could delay the collection of data for analysis, or refocus Forest Service staff attention on fire management. Even if fires were not local, fire season generally could draw some staff away from working on collaborative projects if they took fire assignments elsewhere. On the Willamette National Forest, a severe winter storm in early 2019 redirected energy toward cleanup and also caused extensive damage across two ranger districts where collaboratives were active. But interviewees also described local cohesion in the face of this storm, which they attributed in part to the Southern Willamette Forest Collaborative's work in building more community dialogue and running a community firewood program.

A third challenge that some Forest Service interviewees reported was the investment required to partner with collaboratives. They recognized value from collaboration, including higher-quality projects that addressed diverse interests; but also saw tradeoffs in time and energy required. Some collaborative activities that took time and were difficult for Forest Service personnel to juggle with their other duties included requests for detailed information and presentations, planning of field tours, and the need to re-communicate key messages and data when there was turnover in collaborative group membership. These challenges were particularly felt on national forest units with limited interdisciplinary team capacity.

Discussion and implications

This study analyzed the use and outcomes of the State of Oregon's investment in forest collaborative groups through grants made in the Federal Forest Restoration Program from SFY 2014-2019. These grants were a smaller component of the FFR Program spending than several of its other program areas, constituting $1.4 million or 14 percent of funds. However, there have been significant expectations of the roles that forest collaboratives may play in increasing the pace, scale, and quality of federal forest restoration; and there is a need to understand results from supporting these groups. We examined several types of outcomes from funded collaboratives, focusing primarily on their capacity to foster accelerated restoration, acreages and types of activities planned and implemented with collaborative input, economic impacts, and effects of grants on collaborative organizational capacity itself. Key themes and implications that emerged were that:

- FFR Program collaborative grants supported jobs and income in a variety of economic sectors. Use of the FFR grant funds themselves in the course of collaborative group activities supported about 11 jobs annually across the state between SFY 2014 and 2019. They also leveraged at least $2.5 million in documented partner contributions. Timber sales associated with collaborative group work on specific planning areas supported about 1,019 jobs and $68 million in labor income. About a third of these jobs were in the forestry and wood products sector of the economy and the remainder were spread across other economic sectors that provide supplies and services to forest sector businesses and workers. As timber sale volumes from collaboratively planned sales increased during the analysis period, the estimated number of jobs supported each year by those timber sales also increased. The non-timber components of collaboratively planned projects will support jobs and income in addition to what we report here for timber sales, but we have not reported that economic activity because the information contained in federal contracting databases is insufficient to relate contracts to specific planning areas.
- Collaborative outcomes and context varied. Generally, groups that had been active for longer and were working in forest contexts with a need to reduce fire risk and restore resiliency were those that had the most acres planned and implemented, the greatest number of zones of agreement developed, and greatest economic impacts from implemented work. These were also the groups that had received the most FFR Program grant funding, particularly given that the program did not cover the western portion of the state in its first biennium. Many other groups were younger in age and actively collaborating on projects that did not yet have a decision, so comparable impacts may not be realistically expected yet. Further, the time lag that can occur between a NEPA decision, project implementation, and the final reporting of acres accomplished can delay

the documentation of collaborative outcomes. In addition, varied possibilities for accelerated restoration and the ecological and socioeconomic contexts of different national forests appeared to have created differences in opportunities and challenges that groups faced depending on their location in the state. Given this, it may not be appropriate to expect all collaboratives to foster increased pace and scale of restoration in the same manner at this time. However, it was evident that older and newer collaboratives alike were able to contribute to the quality of restoration by bringing diverse stakeholder values and scientific information to their dialogue.

- Some variables that affected the pace of restoration were not entirely or directly within collaboratives' control, or related to the NEPA process alone. Collaboratives supported by the FFR Program grants held dialogue and provided input to Forest Service decisions, but were not the decision makers. There were also many variables that could affect the pace of a project during the NEPA process, such as interdisciplinary team capacity or priorities, or after the NEPA process, such as contracting processes and markets. Collaboratives did not appear to exert influence over these variables. Moreover, the slower pace of a project could sometimes indicate a focus on larger spatial areas and more complex resource issues that necessitated more time, but had the potential to produce valuable restoration outcomes. This suggests that more nuanced study and state-level dialogue about all factors that may slow the pace of restoration, not just the NEPA process may be warranted; and that collaborative contributions to pace should be evaluated relative to the extent of collaboratives' actual activity and influence.

- Commercial timber sales accounted for the majority of collaboratively planned acres treated to date. To the extent the goals of the FFR program include creating economic activity through timber sales, the collaborative planning areas collectively yielded a large number of commercial sale acres. Interviews showed that many collaboratives have also focused on non-commercial restoration work during the NEPA process, but that funding and capacity challenges may have limited implementation of these activities. If outcomes in watershed restoration-related work remain limited compared to those in commercial timber sales, this may raise concerns for stakeholders who have participated in collaboratives to pursue these goals. The lack of reported acres burned also suggests that the application of prescribed fire is not commensurate with the interests of some collaboratives in returning fire to the landscape. More burning may appear in future examination as collaborative projects with decisions in 2017 onward begin to be implemented. The challenge of obtaining complete data on restoration outcomes from Forest Service databases also persists, and would need to be addressed more thoroughly in order to foster better future analysis.

- FFR Program grants supported the creation or growth of new collaborative capacities that were not directly tied to restoration outcomes at this time. Grant funds were used to support the creation of new groups on the west side of the state, and the strengthening of organizational structures and processes in other groups. This capacity-building put 1.8 million new acres into the boundaries of collaborative groups, which may lead to future restoration outcomes as these groups grow and projects planned with their input are implemented. Support from the FFR Program may also improve the efficiency of existing groups to accomplish their work. However, expecting groups to produce accelerated restoration outcomes immediately after formation may not be realistic. Collaboratives that are now longstanding and have contributed to accelerated restoration once were also younger and initially had few outcomes to report. In addition, monitoring that solely values collaboratives for on-the-ground acres planned or implemented cannot capture other benefits that may come in the longer-term from investing in a group at its formation or redevelopment. Future decision making and management of the FFR Program, now that it covers the entire state, could consider more precise strategy and feasible desired outcomes for investing in groups at different stages of maturity and in varied ecological and socioeconomic contexts.

Appendix A:

Eligibility criteria for FFR Program collaborative capacity grants

(https://www.oregon.gov/oweb/grants/Pages/forest-collaboratives.aspx)

This solicitation is open to established local collaborative groups engaged in forest restoration and/or stewardship on federal forests in Oregon (forests managed by the U.S. Forest Service or Bureau of Land Management).

To be eligible, collaborative efforts must show evidence of a baseline capacity to sustain collaborative dialogue among diverse perspectives. The following must exist at the time of application. Documentation must be submitted for a collaborative to be eligible for a grant under this solicitation.

1. 501(c)3 status or signed agreement with a fiscal sponsor. If a collaborative group does not have 501(c)3 status, applicants must have a signed agreement with an eligible fiscal sponsor. This can be a non-profit community based organization or unit of local government, including tribal governments. Applicants must be based in Oregon.
2. Statement of Commitment signed by collaborative members/participants (including a Declaration of Commitment).
3. Established collaborative process that has been endorsed/approved by the collaborative membership. At minimum, this should include:
   - Mission statement that focuses work on public lands.
   - Decision-making protocol.
   - Documented calendar/schedule that outlines meeting frequency and structure.
4. Leadership structure and process to show how organizational decisions are made, including but not limited to a standing leadership committee or administrative committee.

Appendix B

Table B1 Complete list of collaborative capacity grants awarded, SFY 2014-2019
Source: OWEB

Biennium	Total spent	Forest collaborative group	OWEB contract #	National forest(s)
FY14-15	$34,602	Ashland Forest Resiliency Project	214-8008-11060	Rogue River-Siskiyou
FY14-15	$49,095	Blue Mountains Forest Partners	214-8008-11054	Malheur
FY14-15	$73,715	Blue Mountains Forest Partners	214-8009-11455	Malheur
FY14-15	$46,325	Deschutes Collaborative Forest Project	214-8008-11058	Deschutes
FY14-15	$18,146	Harney County Restoration Collaborative	214-8008-11053	Malheur
FY14-15	$44,938	Harney County Restoration Collaborative	214-8009-11460	Malheur
FY14-15	$51,246	Ochoco Forest Restoration Collaborative	214-8009-11458	Ochoco
FY14-15	$39,744	Southern Oregon Forest Restoration Collaborative	214-8009-11463	Rogue River-Siskiyou, BLM-Medford
FY14-15	$36,012	Umatilla Forest Collaborative Group	214-8008-11056	Umatilla
FY14-15	$46,113	Umatilla Forest Collaborative Group	214-8009-11459	Umatilla
FY14-15	$15,000	Wallowa-Whitman Forest Collaborative	214-8008-11052	Wallowa-Whitman
FY14-15	$58,208	Wallowa-Whitman Forest Collaborative	214-8009-11456	Wallowa-Whitman
FY14-15	$34,152	Wild Rivers Coast Forest Collaborative	214-8009-11462	Rogue River-Siskiyou
FY16-17	$24,999	Blue Mountains Forest Partners	216-8008-15372	Malheur
FY16-17	$24,690	Deschutes Collaborative Forest Project	216-8008-15374	Deschutes
FY16-17	$49,334	Deschutes Collaborative Forest Project	216-8008-12557	Deschutes
FY16-17	$48,663	Hood River Stewardship Collaborative	216-8008-12588	Mt. Hood
FY16-17	$11,509	Lakeview Stewardship Group	216-8008-12757	Fremont-Winema
FY16-17	$31,703	McKenzie Watershed Stewardship Group	216-8008-12753	Willamette
FY16-17	$49,298	Ochoco Forest Restoration Collaborative	216-8008-12755	Ochoco
FY16-17	$42,752	Southern Oregon Forest Restoration Collaborative	216-8008-12754	Rogue River-Siskiyou
FY16-17	$21,950	South Santiam All Lands Collaborative	216-8008-12758	Willamette
FY16-17	$39,795	Siuslaw Stewardship Groups	216-8008-12563	Siuslaw
FY16-17	$25,850	Southern Willamette Forest Collaborative	216-8008-12561	Willamette
FY16-17	$10,725	Southern Willamette Forest Collaborative	216-8008-15377	Willamette
FY16-17	$40,819	Wallowa-Whitman Forest Collaborative	216-8008-12760	Wallowa -Whitman
FY16-17	$17,500	Umatilla Forest Collaborative Group & Wallowa-Whitman Forest Collaborative	216-8008-15378	Umatilla, Wallowa-Whitman
FY16-17	$39,869	Wasco County Forest Collaborative Group	216-8008-12566	Mt. Hood
FY18-19	$51,000	Blue Mountains Forest Partners	218-8008-16081	Malheur
FY18-19	$35,000	Blue Mountains Forest Partners	218-8008-16493	Malheur
FY18-19	$48,641	Deschutes Collaborative Forest Project	218-8008-16082	Deschutes
FY18-19	$48,708	Ochoco Forest Restoration Collaborative	218-8008-16083	Ochoco
FY18-19	$15,538	Harney County Restoration Collaborative	218-8008-16491	Malheur
FY18-19	$50,000	Hood River Stewardship Collaborative and Wasco County Forest Collaborative	218-8008-16084	Mt. Hood
FY18-19	$12,343	McKenzie Watershed Stewardship Group	218-8008-16495	Willamette
FY18-19	$39,600	Southern Oregon Forest Restoration Collaborative	218-8008-16088	Rogue River-Siskiyou, BLM-Medford
FY18-19	$18,921	Siuslaw Stewardship Groups	218-8008-16494	Siuslaw
FY18-19	$49,995	Southern Willamette Forest Collaborative	218-8008-16086	Willamette
FY18-19	$36,986	Umatilla Forest Collaborative Group & Wallowa-Whitman Forest Collaborative	218-8008-16496	Umatilla, Wallowa-Whitman

Appendix C

Table C1 Acres collaborated on by groups receiving FFR Program collaborative capacity grants, FFY 2014-2019

Source: interviews and OWEB

Collaborative	National forest	Acres collaborated on with a NEPA decision signed by March 2019	Acres collaborating on (still under environmental analysis as of March 2019)	Total acres of collaborative involvement
Ashland Forest Resiliency	Rogue River-Siskiyou	7,600	0	7,600
Blue Mountains Forest Partners	Malheur	181,751	241,571	423,322
Deschutes Collaborative Forest Project	Deschutes	43,216	6,500	49,716
Harney County Restoration Collaborative	Malheur	134,171	32,175	166,346
Hood River Stewardship Collaborative	Mt. Hood	7,300	6,050	13,350
McKenzie Watershed Stewardship Group	Willamette	27,173	6,764	33,937
Ochoco Forest Restoration Collaborative	Ochoco	62,546	245,810	308,356
Southern Oregon Forest Restoration Collaborative	Rogue River-Siskiyou, Medford BLM	114,427	121,400	235,827
Southern Willamette Forest Restoration Collaborative	Willamette	49,660	105,000	154,660
Wasco County Forest Collaborative	Mt. Hood	14,300	7,600	21,900
Wild Rivers Coast Forest Collaborative	Rogue River-Siskiyou	0	92,000	92,000
Wallowa-Whitman Forest Collaborative	Wallowa-Whitman	145,636	36,000	181,636
Umatilla Forest Collaborative	Umatilla	48,745	138,870	187,615
		836,525	**1,039,740**	**1,876,265**

Appendix D

Acres here are only those linked to collaboratives funded under the FFR Program; they are not the restoration accomplishments of entire Forest Service units. Acres are counted by activity in FACTS; therefore, an acre can be counted repeatedly each time it receives a different treatment, and numbers of acres across activities cannot be summed for a national forest unit or to state a total number of acres treated through collaboratively planned projects.

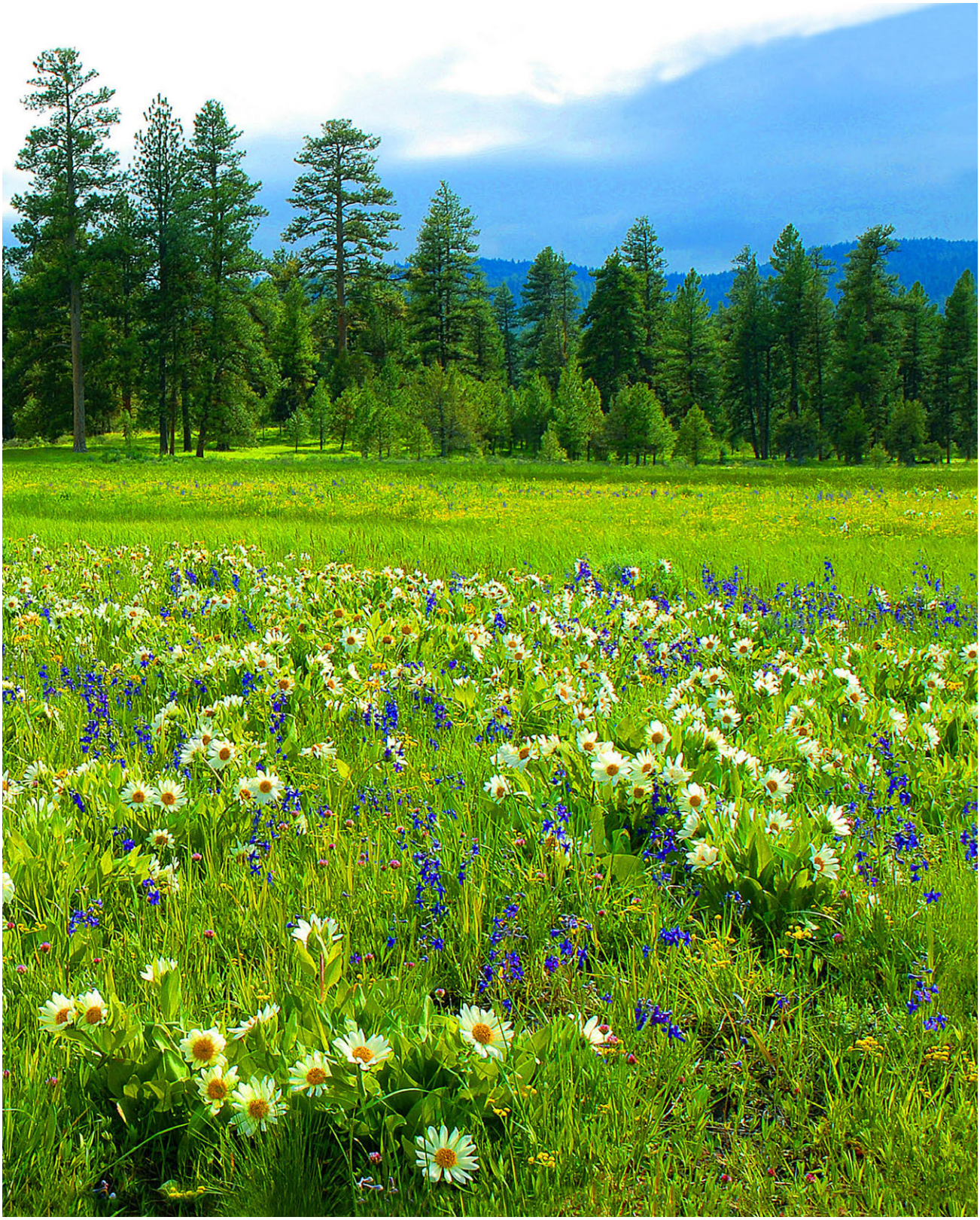
"Other activities" grouped included animal damage control for reforestation, planting trees, plantation survival survey, pruning to raise canopy height and discourage crown fire, revegetation planning and preparation, seeding (of grasses/shrubs/forbs), site preparation for natural regeneration, and natural ignition of wildfire.

Table D1 Acres of completed restoration activities from collaboratively planned projects by national forest unit, FFY 2014-2018

Source: FACTS

	2014	2015	2016	2017	2018	Total acres of treatment type	% share of total acres for treatment type
Deschutes National Forest							
Burning	206	324	146	258	435	1,369	83%
Burning of piled material	0	40	142	320	1,795	2,297	26%
Chipping of fuels	3,523	1,761	637	35	55	6,011	100%
Commercial sale	2,930	4,701	5,072	1,658	1,518	15,879	27%
Mechanical surface treatment	400	0	66	678	700	1,844	24%
Piling of fuels, hand or machine	90	34	107	341	841	1,413	5%
Precommercial thin	1,172	1,726	2,011	2,970	2,765	10,644	35%
Salvage	0	95	223	0	0	318	100%
Stand survey		8	66	263	1790	2,127	68%
Other activities	0	16	0	567	249	832	51%
Malheur National Forest							
Burning	0	0	0	0	135	135	8%
Burning of piled material	190	158	0	0	799	1,147	13%
Commercial sale	0	2,913	5,854	7,532	8,186	24,484	41%
Mechanical surface treatment	0	0	0	165	0	165	2%
Piling of fuels, hand or machine	0	0	44	4,350	6,402	10,795	35%
Precommercial thin	0	0	294	1,463	2,653	4,410	15%
Stand survey	291	291	358.9	0	67.9	1,009	32%
Other activities	72	196	420	0	68	755	46%
Ochoco National Forest							
Commercial sale	0	551	1,496	1,709	3,132	6,888	12%
Mechanical surface treatment	0	1	0	316	0	317	4%
Piling of fuels, hand or machine	0	551	1,099	2,162	3,287	7,099	23%
Precommercial thin	0	305	238	881	1,215	2,639	9%
Stand survey	291	291	358.9	0	67.9	1,009	32%
Other activities	72	196	420	0	68	755	46%

Rogue River-Siskiyou National Forest							
Burning	0	0	63	0	90	153	9%
Burning of piled material	0	1,774	1,227	0	1,508	4,509	52%
Commercial sale	0	0	897	0	0	897	2%
Piling of fuels, hand or machine	0	1,756	1,016	0	1,508	4,280	14%
Precommercial thin	0	1,846	306	0	1,508	3,660	12%
Other activities	9	0	0	0	0	9	0.03%
Umatilla National Forest							
Commercial sale	0	0	492	5,278	1,157	6,927	12%
Mechanical surface treatment	0	198	0	0	418	616	8%
Piling of fuels, hand or machine	0	325	542	3,663	58	4,588	15%
Precommercial thin	0	672	61	1,166	955	2,854	9%
Silviculture prescription	0	990	6,625	5,490	98	13,203	74%
Other activities	0	41	0	0	0	41	3%
Wallowa-Whitman National Forest							
Burning of piled material	0	0	0	244	554	798	9%
Commercial sale	0	225	0	0	1,923	2,148	4%
Mechanical surface treatment	0	0	1,588	1,685	1,392	4,665	61%
Piling of fuels, hand or machine	49	0	221	496	1,952	2,718	9%
Precommercial thin	49	247	1,731	1,751	2,326	6,104	20%
Watershed-related restoration	0	0	1,535	1,723	1,403	4,661	99.9%
Other activities	49	0	0	0	0	49	3%
Willamette National Forest							
Commercial sale	183	0	0	1,134	834	2,151	4%



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