Understanding Stakeholder Experiences with Long-Term, Landscape-Scale Stewardship Contracting in the Pacific Northwest

EMILY JANE DAVIS

SPRING 2021

UNIVERSITY OF OREGON

Ecosystem Workforce Program

Oregon State University

RVCC Rural Voices for Conservation Coalition

FOREST SERVICE U.S. DEPARTMENT OF AGRICULTURE

About the author

Emily Jane Davis is an Assistant Professor and Extension Specialist at Oregon State University and Co-Associate Director of the Ecosystem Workforce Program.

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: http://ewp.uoregon.edu/about/intro

About Rural Voices for Conservation Coalition (RVCC):

RVCC promotes new approaches to the ecological and economic problems facing the rural West. We are committed to developing practical solutions through collaborative, place-based work that recognizes the inextricable link between the long-term health of the land and the well-being of communities. We work together to improve issues that affect rural communities, public and private land management, and the continuation of a natural resource-based economy in the West, advocating for the inclusion of comprehensive community interests.

More information: https://www.ruralvoicescoalition.org/

Acknowledgements

Contact us at:

Ecosystem Workforce Program
Institute for a Sustainable Environment
5247 University of Oregon
Eugene, OR 97403-5247-1472
ewp@uoregon.edu
ewp.uoregon.edu

Table of Contents:

Acronyms used:

FAR	Federal Acquisition Regulations		**MSA**	Master Stewardship Agreement
IRSC	Integrated Resource Service Contract		**NEPA**	National Environmental Policy Act
IRTC	Integrated Resource Timber Contract		**TEA system**	Transaction Evidence Appraisal system

Executive Summary

Stewardship end results contracting is a set of authorities that allows the USDA Forest Service to implement forest restoration activities in new and flexible ways through contracts and agreements. These authorities provide several means to pursue restoration and community goals that depart from prior guidance and requirements for timber sales and service contracts. Some projects have been purposefully designed as long-term and landscape-scale through ten-year arrangements that encompass relatively large spatial areas and seek durable, significant restoration and community economic objectives. The implementation of large stewardship projects is an evolving area of practice for the Forest Service and its partners. As such, it particularly presents opportunities and challenges for learning. In 2016, the Regional Forester of Region 6 (Pacific Northwest states of Washington and Oregon) recognized this, and requested an internal Functional Assistance Team review of the five large projects in this region to help inform their effective administration. However, that review primarily focused on the experiences and insights of agency personnel. In response to the need for additional perspectives, this study obtained and synthesized partner viewpoints from 21 key informants closely involved in the implementation of the five large

projects through qualitative interviews and document review. Findings pertain to common trends, challenges, and lessons learned from the practice of long-term, large-scale stewardship contracting from non-agency stakeholder viewpoints. The confidentiality of participants is protected by a focus on common themes and an in-depth case study approach is not used.

> **Stewardship projects included in this study:**
>
> - Mill Creek A to Z Ten Year Stewardship Contract
>
> - Malheur Ten Year Stewardship Contract
>
> - Lakeview Ten Year Stewardship Contract
>
> - Klamath Tribes / Fremont-Winema Master Stewardship Agreement
>
> - Ashland Forest Resiliency Stewardship Project Master Stewardship Agreement

Findings specific to master stewardship agreements

- The two studied MSAs were distinct in their scope, scale, goals, and settings. But both were structured around a partnership of a few closely engaged core partners bringing substantial resources and mutual benefit to their projects. Partners contributed capacities for fiscal management, pre-sale administration, in-house crews, contract subawarding, workforce training, monitoring and scientific research, and outreach and communications. The MSA structure also required partners to interact and cooperate, particularly where they had overlapping capacities or shared responsibilities. This necessitated deliberate intent and energy to navigate inter-organizational dynamics, differences in visions, or any competition.

- The novelty of the MSA approach also required partners and involved agency staff to face new, uncertain settings and address confusion about roles. Over time and with experience, this confusion and uncertainty improved, and work under the agreements generally became more efficient and effective.

- The MSA approach allowed for multiple examples of innovative efficiencies and flexibilities:
  - » Trading planned activities between the agency and partners to allow whoever had appropriate capacity to act when tasks needed to be accomplished
  - » Use of virtual boundaries
  - » Use of designation by prescription for spatial heterogeneity
  - » Capacity for a partner to develop burn plans through a master participating agreement outside of the MSA and executed through supplemental project agreements that consistently "built fire in"
  - » Partner discretion to determine size and bundling of specific activities and how to implement them, perform sale layout and marking before subcontracting to make prescriptions and desired outcomes clear

for the subcontractors who would be performing the work, and amend service contracts with subcontractors to be responsive to changes in knowledge, operating conditions, and/or markets
  - » Payment of actual costs for implementation, with ability to adjust work performed without new work orders or changes that would be required in a contract arrangement; and lower overhead costs for partners, allowing more funding to be used on the ground

- These flexibilities and the ability of partners to make many decisions made this an empowering structure, but there also some limits and challenges associated with administration of timber sales within an agreement structure, as the stewardship handbook for the region did not provide specific direction for this. Decisions about timber sale-related processes such as use of tracer paint, partner marking, or utilization standards appeared largely dependent on variable interpretation of procedures among different timber sale administrators, and across different Forest settings. Some found that "timber targets" and fluid economic markets influenced implementation schedules, priorities, and available agency support.

- There was a strong emphasis on the quality and impact of the restoration activities implemented in MSAs and grounded in scientific study and monitoring. Key to this was a fairly tight loop of learning from implementation and applying it back to the project within short timeframes. This data collection and learning helped partners see how they were achieving desirable ecological outcomes, particularly around improving fire and climate resiliency. Another primary outcome of the MSAs was the opportunity for the involved organizations to build their capacities. Although some partners had prior experience working with the Forest Service and others through other types of agreements, the MSAs required work of new complexity and/or scale. The capacities that partner organizations had to grow through the MSAs included fiscal management, subcontracting with businesses, and administration of timber sales.

Findings specific to large stewardship contracts

- Collaborative groups provided multiple forms of support for large contracts that included bringing diverse stakeholder interests and values to inform planning, advocating for the use of stewardship contracting, creating space for ongoing dialogue in implementation, and leading multi-party monitoring. Collaboratives' investment through these roles fostered hopes and expectations for the outcomes of large stewardship projects, and strong interest and sense of ownership in large stewardship contracts, despite their lack of an official implementation role.

- In all three contracts, interviewees believed that a larger number of acres had been treated and that this would not have been possible without the large stewardship contract arrangement, even if some were dissatisfied with aspects of the process. Some also thought that treatments were achieving or seemed likely to achieve silvicultural goals such as shifts in species composition and reduced densities.

- Design features viewed as in line with the intent of stewardship contracting were spatially larger units with more intensive treatment percentages per unit, in closer proximity to each other, and strategically located and arranged with the intent of meeting landscape or watershed scale management objectives. Interviewees in two of the three large contracts felt these design features were sufficiently present to achieve landscape-scale outcomes.

- In each contract, interviewees experienced some flexibility and some inflexibility. Staff who were willing to "go walk the ground", who would discuss questions and issues as they emerged, and who had more local and contextual knowledge were consistently regarded as key to flexibility, including those who acted as intermediaries to facilitate stakeholder interests and negotiate with other staff.

- A substantial portion of stakeholders in all three large contracts perceived challenges in pricing, costs, and defining best value, which were interwoven in complex ways and related to other issues in communication, flexibility, and transparency. These challenges included:

    » The relationship between the cost of the service work and the value of timber within a project, wherein the amount and cost of service work within each project often in reality exceeded the value of timber product

    » Appraisals of timber value that did not reflect industry local context or actual amount of smaller diameter material

    » Lack of transparency about the appraisal process and frustrations in communicating about it with agency staff

- There was substantial interest and tension about the meaning of local community benefit and how it should be weighed alongside other considerations in the selection of a contractor and in setting prices within a task order. The concept of supporting local industry and economic outcomes for local communities was a major motivator for collaborative stakeholders, which likely heightened the intensity of questions or contention about it. All interviewees described how local economic impacts had resulted from large stewardship contracts in their area, yet not all felt that the Forest Service had consistently valued local community benefit over cost in setting prices. There was also evidence of controversy and conflict regarding who benefited and how.

- Interviewees from all three stewardship contracts suggested that the capacity of a contractor to implement the scope and scale of work in a large, long-term contract was crucial, and that criteria about contractor record of performance and experience should be weighted highly in choosing contractors for this type of project.

Findings related to both MSAs and contracts

There were common themes about the interactions of agency personnel and partners as they worked together in the course of implementing a large stewardship project, regardless of if it was an agreement or project:

- Establishment of a collective vision for stewardship contracting in a project was important in that staff and partners who shared this vision were able to work together effectively in pursuit of the intent of the authority. The shared vision of stewardship also included a commitment to identify solutions and truly work together on an ongoing basis through meaningful partnership between the agency and non-agency partners or contractors. There was significant appreciation for the space that stewardship contracting created, and recognition that it allowed partners and contractors to work with the agency in new ways.

- There could be challenges to consistent, clear communication with agency staff in administering projects in both agreement and contract settings. Examples were provided such as being unable to obtain answers to questions that were necessary for signing paperwork or taking next steps on a project. In some scenarios, communication lapses were lengthy and caused frustration.

- For collaborative groups, there was a sense of inadequate communication and of exclusion, which had several facets including inadequate connection with implementation staff, disappointment when issues were identified but not changed, and a sense that Forest leadership did not value their input.

- Learning related to 1) on-the-ground operations and implementation in practice, 2) project-level lessons learned processes, and 3) monitoring and scientific research all helped foster improved communication and mutual understanding.

Discussion and Implications

Innovation and flexibility

The expression of stewardship contracting was unique in each setting, reflecting variability in different "shops" of the agency, from Forest to Forest, and from individual to individual. The dynamics of each project and the types of flexibilities possible appeared highly dependent on the context and people involved. Undertaking a large stewardship project required the coordination of stakeholders and agency staff with different value orientations working to carry out different aspects of the agency's multiple use mission, and were subject to both positive learning as well as challenges associated with crossing those functional boundaries, and adopting new administrative procedures. Understandably, there can be challenges and opportunities in attempting new and more flexible approaches. Where learning processes were in place, they aided with navigating this environment, but may not have been inclusive or consistent enough to help address all challenges or foster adaptive change. Some of the mechanics of implementation challenges stemmed from policies or management direction that was not exclusive to stewardship contracting and could not be squarely attributed to the authority itself.

Implications:

- It is to be expected that trying new, more flexible approaches will pose challenges and uncertainties. Commitment to regular, sustained learning and adaptation at multiple scales from daily operations to after action reviews and broader lessons learned exercises can help facilitate successful navigation of the challenges.

- Carefully recognizing which challenges or potential inflexibilities stem from the specifics of stewardship authorities versus larger policy and management direction may facilitate more clear understandings of the advantages and limitations of these authorities. This could also include identification of the level at which these exist and may be effectively addressed (i.e., regional versus national level).

- Large stewardship projects offer the opportunity for innovation and significant outcomes, and could be practiced in more locations around the Region. More updated and accessible sources for guidance, lessons learned, and other important knowledge about stewardship contracting may support both stakeholders and agency staff in doing this effectively. This could occur through both internal agency peer learning, as well as learning that brings together external stakeholders and agency staff.

Roles of partnerships and collaborative groups

In the setting of MSAs, large stewardship projects provided the opportunity for partners to contribute significant knowledge, skills, technical capacities, and resources to implementing and monitoring forest restoration on federal lands; and to share some leadership and decisions with the agency in a community-based forestry type of approach. They also allowed those entities to greatly grow these capacities. For large contracts, forest collaborative groups provided a foundation for the use and successes of stewardship projects, and were key to the ability to use the authority. Forest collaborative groups and long-term partnerships are stakeholder communities with a significant sense of investment and ownership in what happens on the national forest lands with which they engage. Their expectations for stewardship contracting in these projects were high, which could provide both strong support and pressure to the agency. There was substantial stakeholder interest in increasing engagement with implementation, including demands for more transparency about implementation decisionmaking and a desire to have agency implementation personnel (e.g., timber sale administration, acquisitions management, grants and agreements) present in collaborative venues. However, there is not a clear path or requirement for public participation in implementation as exists in the NEPA process.

Implications:

- Large stewardship projects provided the opportunity for partners and businesses to substantially build their capacities for forest restoration.

This capacity building is an important outcome unto itself that should be recognized, deliberately sought, and tracked as a key outcome in stewardship projects.

- Given the importance of forest collaborative groups in initiating and enabling stewardship projects, programs that support collaborative and organizational capacity such as the former Community Capacity and Land Stewardship program are needed to support these roles.

- MSAs demonstrate how high capacity partners are able to provide substantial capacity and leadership in working on federal lands. This model may be useful to expand given future directions toward shared stewardship and budget modernization, as well as partner interest in meaningful roles in federal land management.

- There is a need to explore and articulate pragmatic pathways for agency implementation personnel (e.g., timber sale administration, acquisitions management, grants and agreements) to engage in collaborative venues.

Perceived community benefits and how best value criteria were used

Numerous perceived ecological and economic outcomes were evident from the studied projects, such as the treatment of acres at a magnitude that would not have been possible without the use of stewardship contracting, significant learning and capacity building, partners' novel and unanticipated fiscal and quantitative scientific delivery, and local economic impacts. Interviewees expressed significant appreciation for the opportunities that large stewardship projects had provided and hoped to see these outcomes continue. However, provisions of stewardship contracting such as benefit to local communities and best value were challenging to enact in part because stakeholders had high expectations for them. How these intersected and traded off in practice was complex. Some of the most substantial tensions around navigating these provisions were among the stakeholders and staff (i.e., contracting and timber sale positions) who had to work out the details on the ground.

Although the size of large stewardship projects (e.g., number of acres, proportion of program of work, duration) promised meaningful outcomes and stability for the businesses, partners, and communities involved, this also meant that few entities had the capacity to take on projects of such scope and scale. In one project in particular, even as the lead entities created opportunities for other local businesses through subcontracting, there were perceptions of unfairness. Existing research and monitoring on economic outcomes from national forest restoration tends to document impacts, such as jobs created; it does not address the social complexities of what local community benefit may mean and the divergent perceptions of competition and equity in economic outcomes that were evident in this study.

Implications:

- If future stewardship contracting approaches pursue more open competition with the intent of better distributing opportunities, there may be less development of workforce and infrastructure, as no one company will be able to take on such risk and investment, and local community outcomes will likely look different. Businesses that invested substantially in scaling up through the present large projects would face challenges in finding adequate work to meet their needs and would struggle to maintain those investments. However, this may produce less social conflict focused on a single business, and may diffuse interpersonal pressure for those involved.

- There is a need for more open dialogue between stakeholders and the agency as well as within different sections of the agency about the meaning of local community benefit and distribution of opportunities in practice. There can be diverse, even divergent meanings of this term, with implications for how stewardship contracting decisions are made. This dialogue could occur within local collaboratives, as well as at a regional level more broadly.

Pricing and timber sale appraisal

The lack of transparency about how decisions were made in both timber appraisals and acquisitions management caused significant frustration, as stakeholders with a glimpse but not complete knowledge of these complex systems used what they did know to build negative stereotypes of the people and structures associated with them. There was also a widespread sense that appraisals of timber value as inaccurate for local context and amount of smaller diameter material, and that the appraisal process was not transparent.

Implications:

- More transparency about how decisions are made in the timber appraisal process and in acquisitions management may help improve stakeholders' knowledge and ability to work with it.

- There is a need to examine the lack of timber sale guidance associated with administration of timber sales within an agreement structure in the stewardship handbook.

- If contracting decisions are made on the basis of lowest cost in a large contract setting with many acres to be treated, contractors are challenged by costs per acre at scale.

- Setting of prices may be better matched to current context by obtaining the most up to date local market data or reaching out to industry to learn about changes in markets, particularly during times of market fluctuation in which data from even a few months' prior may no longer be accurate.

- Deliberate learning may allow agency staff to increase their knowledge of operational details of local forest products processing facilities, particularly in reaching new personnel as turnover occurs.

- If service costs exceed timber value, not bringing additional funds to accomplish the service work will result in some ecologically important units going untreated and potentially limit landscape-scale impacts. Areas with higher product removal value offer opportunity for service work without additional funds. Agency direction around timber sales may be needed to resolve situations wherein commercial value exists, but the cost of removal exceeds product value, as this is critical to meeting restoration goals.

- There has been expectation that Forest Products Modernization Initiative would provide a new or revised appraisal system, including new standards for sawlogs and biomass, that accurately reflected timber value and the local industry context in each area; however, stakeholders are uncertain if this is occurring or about the outcomes of this initiative, and further outreach and updates are warranted.

Interaction between agency staff and external stakeholders

A shared vision of the goals of stewardship authority facilitated effective partnerships between agency staff and stakeholders. When this vision was not established, or when stakeholders could not obtain answers to questions, felt unheard, or experienced administrative delays, they experienced substantial frustration in working with the agency. When they had regular contact with a key local intermediary (typically a line officer or partnership position) who tried to listen to and address their concerns, their satisfaction was much higher, even when addressing challenging topics or not succeeding in their desired outcomes.

Implications:

- Centralization of contracting administration and other agency functions may contribute to stakeholder dissatisfaction as many prefer interacting with local staff, and respect their local knowledge and ability to be "on the ground." A project manager/coordinator role on the local Forest may help maintain relationships and proactively address issues.

- Large, long-term stewardship projects necessitate close working partnerships between the agency and involved stakeholders, but this can be incompatible with conflict of interest policies and cultural views of such partnerships as inappropriate (i.e., of stakeholders having undue influence over government decisions).

- Continued efforts to improve communication and understanding between different "shops" within the agency may help foster more shared visions for large stewardship projects and ease tensions. Best practices for helping interdisciplinary teams work together across their disciplinary boundaries, for example, may have some applicability.

- Providing mentorship, support, and problem-solving resources for agency staff who are experiencing challenges in working with stakeholders may improve their capacity and comfort.

- Collectively reviewing and airing assumptions and expectations with stakeholders as early as possible in a project may help create more shared understanding or timely identification of areas of future challenge.

- Navigating stakeholder interest in increased access to implementation decisionmaking and personnel may require new thinking and support for staff; for example, identifying strategic ways to engage with collaborative groups at key points without burdening staff, and frankly discussing what decision space, if any, may be available to those external to the agency. In addition, including natural resource specialists in implementation in some form may also help create more integration and consistent awareness of restoration goals through the lifespan of a project.

- Tracking communications and ensuring that administrative processes with stakeholders do not fall through the cracks may help support more positive working relationships. If detailing or turnover in a key position is frequent, establishing a means of institutional memory as well as handoffs for key relationships and tasks, and ensuring that detailers or new staff are aware of partnerships, would be essential.

- Understaffing of positions and overloading of duties creates pressure and challenges the agency in meeting its obligations and showing up as a partner.

Introduction

The USDA Forest Service (hereafter Forest Service) manages approximately 193 million acres of national forests and grasslands across the United States through various policies, regulations, and laws. In the late 1990s, national forest management generally shifted toward a focus on ecosystem management. Some stakeholders and innovators within the agency also advocated for an increased emphasis on collaborative involvement and local economic outcomes, and sought new policy approaches for doing so.[1] One such approach was stewardship end results contracting (hereafter stewardship contracting), a set of authorities that allow the Forest Service and US Department of the Interior's Bureau of Land Management to implement defined restoration activities in new and flexible ways. Congress authorized a short-term series of pilot stewardship contracting projects in fiscal year 1998, then in the fiscal year 2003 Appropriation Bill (Section 323 of Public Law 108-7), granted use of the authority until the end of fiscal year 2013, and finally reauthorized it in 2014 (Section 604 (16 USC 6591c) of Public Law 108-148 as amended by Section 8205 of Public Law 113-79, the Agricultural Act of 2014).

The intent of stewardship contracting, in the words of the Forest Service, is to:

> "…achieve land management goals while meeting local and rural community needs, including contributing to the sustainability of rural communities and providing a continuing source of local income and employment. It focuses on the "end result" ecosystem benefits and outcomes, rather than on what's removed from the land."[2]

---

[1] Davis, E.J., Hajjar, R., Charnley, S., Moseley, C., Wendel, K. and Jacobson, M., 2020. Community-based forestry on federal lands in the western United States: A synthesis and call for renewed research. *Forest Policy and Economics*, 111, p.102042..

[2] See: https://www.fs.fed.us/restoration/Stewardship_Contracting/overview.shtml.

When utilizing stewardship contracting, the agency is required to 1) use it for accomplishing certain activities defined as restoration,[3] 2) involve local communities in the development of agreements or contract plans, and; 3) use multiparty monitoring to track contracting status, accomplishments, and collaboration. Specifically, stewardship contracting authorities provide several means to pursue restoration and community goals that depart from prior guidance and requirements for timber sales and service contracts (see text box, below).

About stewardship contracting authorities[4]

- **Goods for services**: Allow value of removed products to offset the cost of services within a contract or agreement, using an integrated resource service contract (IRSC) when value of service work exceeds that of timber product or an integrated resource timber contract (IRTC) when the value of timber product exceeds the cost of service work.

- **Best value**: Consider factors other than price to ensure contractor or bidder will meet project objectives.

- **Use of less than full and open competition**: Exempts stewardship projects from the requirement that all timber sales valued at more than $10,000 be advertised and competitively bid. With this authority, preference may be given to, for example, small businesses or bidders in particular locations. Less than full and open competition is permitted (and sometimes required) for service contracts.

- **Retained receipts**: Retain the proceeds from the sale of product removed, and reinvest them in the same stewardship project or transfer to another stewardship project, rather than proceeds being sent to the US Treasury.

- **Exemption of payments to counties**: If timber is harvested through a stewardship arrangement, the Forest Service is not required to pay a percentage of that revenue to the counties where harvest occurred.

- **Designation by description**: Allow designation of trees to be removed or retained without marking, with contractor required to describe their plan for meeting the desired end results of a project.

- **Multi-year arrangements**: Stewardship contracts or agreements may be up to ten years in duration.

- **Use of agreements**: Agreements with nonprofit organizations, Tribes, or other non-private sector entities may be used instead of contracts to require matching resources from partners and make explicit mutual benefits.

---

[3] Restoration activities are defined to include: (1) Road and trail maintenance or obliteration to restore or maintain water quality, (2) Soil productivity, habitat for wildlife and fisheries, or other resource values, (3) Setting of prescribed fires to improve the composition, structure, condition, and health of stands or to improve wildlife habitat, (4) Removing vegetation or other activities to promote healthy forest stands, reduce fire hazards, or achieve other land management objectives, (5) Watershed restoration and maintenance, (6) Restoration and maintenance of wildlife and fish, and (7) Control of noxious and exotic weeds and reestablishing native plant species.

[4] Moseley, C., & Davis, E.J. 2010. Stewardship Contracting for Landscape Scale Conservation. Ecosystem Workforce Program Working Paper #25, University of Oregon: Eugene, OR.

To date, stewardship contracting has been used across the national forest system for projects varying in size and scope. Some projects have been purposefully designed as long-term and landscape-scale through ten-year arrangements that encompass relatively large spatial areas (hereafter large projects), and the authority now allows for twenty-year projects as well. These large projects particularly seek restoration and community economic objectives that will be durable and significant, given their size and timeframe. The implementation of large stewardship projects is an evolving area of practice for the Forest Service and its stakeholders. As such, it particularly presents opportunities and challenges for learning. In 2016, the Regional Forester of Region 6 (Pacific Northwest states of Washington and Oregon) recognized this, and requested an internal Functional Assistance Team review of the five large projects in this region to help inform their effective administration (see Table 1, below). The review team, composed of Forest Service staff with relevant expertise from the Washington Office and several Regional Offices, completed this task in 2017, providing a number of reflections and recommendations on the challenges and questions of implementing and administering large projects in practice. The topics covered in this review included innovation in applying stewardship, community benefits, the roles of partnerships and collaboration, use of best value criteria, issues with pricing and costs, and interaction between agency staff and external partners or contractors. However, this review primarily focused on the experiences and insights of agency personnel. In response to the need for additional perspectives, this study obtained and synthesized key stakeholder viewpoints.

Table 1   Large, long-term stewardship projects in USDA Forest Service Region 6 included in this study

Project	National Forest	Dates	Associated collaborative	Overview
Mill Creek A to Z Ten Year Stewardship Contract	Colville	Awarded in 2013	Northeast Washington Forest Collaborative	IRSC awarded to Vaagen Bros Lumber, Inc., to subcontract third party NEPA analysis for approximately 54,000 acres within two planning areas
Malheur Ten Year Stewardship Contract	Malheur	Awarded in 2013	Blue Mountains Forest Partners	IRSC awarded to Iron Triangle, LLC; 54,059 acres of commercial harvest awarded to date
Lakeview Ten Year Stewardship Contract	Fremont-Winema	Awarded in 2008 and completed in 2018	Lakeview Stewardship Group	IRSC awarded to Collins Pine Company
Klamath Tribes / Fremont-Winema Master Stewardship Agreement	Fremont-Winema	Signed in 2011	NA; core partners to Tribes and USFS on MSA are The Nature Conservancy and Lomakatsi Restoration Project	MSA focuses on approximately 1.7 million acres of the Fremont-Winema National Forest, including 1.1 million acres of former Klamath reservation land and ancestral lands
Ashland Forest Resiliency Stewardship Project Master Stewardship Agreement	Rogue River-Siskiyou	Signed in 2010 and extended to 2025	NA; core partners to USFS on MSA are The Nature Conservancy, Lomakatsi Restoration Project, and City of Ashland	MSA focuses on area of approximately 7,600 acres

Approach

The initial broad guiding question for this study was: What are the experiences of key stakeholders in the administration and implementation of long-term, large-scale stewardship projects in Washington and Oregon? More specific research questions were:

- How were innovative approaches taken in implementing these contracting projects?

- What were the roles of partnerships and collaborative groups?

- What were the perceived community benefits, and how were best value criteria used?

- What issues were present with pricing and timber sale appraisal?

- What were the positive and challenging aspects of interaction between agency staff and external partners or contractors in implementing these projects?

To develop more specific themes and interview questions, I first reviewed the report of the Functional Assistance Team and classified its contents by the following major topics: 1) Partners and collaborative groups, 2) contract or agreement design, 3) communication and interaction with agency staff, 4) flexibility and innovation, 5) learning, and 6) perceptions of outcomes. In addition, I reviewed notes from informal interviews previously conducted with approximately ten stakeholders involved in large stewardship projects in 2018. I constructed a semi-structured interview guide of questions based on the six major topics and these prior informal interviews. This guide was reviewed and revised with feedback from an advisory committee of Region 6 Forest Service personnel and a representative from the Rural Voices for Conservation Coalition. The interview instrument and study protocols were approved by Oregon State University's Institutional Review Board.[5]

---

[5] OSU Institutional Review Board, study #IRB-2020-0818.

I developed a list of 21 key informant individuals closely engaged with each of five large projects in the study who would be most able to speak to the questions. Interviewee affiliations necessarily varied by study projects. For each project, one agency personnel who had worked as a project manager or in a similar role was included for their perspective. Only one contacted individual did not respond to the request for an interview. Four individuals were interviewed about two study projects as they were key informants for both. Interviewees' affiliations and site locations are protected for confidentiality, as this is a small population of known individuals and those characteristics would allow them to be identified.

Interviews were audio-recorded, transcribed, and coded using NVivo qualitative analysis software. A first round of coding coarsely grouped interview data by the six main topic areas identified in the Functional Assistance Team report. In a second round, I coded for more specific, detailed dimensions of each topic area as they emerged from the data, resulting in 17 total themes. I then sought to identify commonalities and differences in data about each theme across the interviewee population. Analysis focused on this population rather than providing detailed case studies of each project, as the study was intended to understand common trends, challenges, and lessons learned from the practice of long-term, large-scale stewardship contracting in general. At some points, comparisons and contrasts are made between projects to more clearly describe the extent or limits of a finding, while striving to maintain confidentiality. It is important to note that this study focused on perceptions of closely involved stakeholders and does not offer a complete picture of all views of large stewardship projects, as it did not include most agency staff involved in each project. As such, findings and implications reflect those stakeholders' perceptions, and should be considered alongside other evaluations and sources of information that include more complete agency viewpoints.

The following terms are used in reporting findings:

- *Stakeholder*: A non-agency stakeholder relevant to the studied projects, who may be a collaborative group member, contractor on a contract, or partner on an agreement.

- *Project*: Refers to one of the five studied large contracts or agreements

- *Collaborative*: The terms "collaboration" and "collaborative" can have numerous meanings and interpretations. In this study, I refer to "collaboratives" and "collaboration" specific to groups that provide multi-stakeholder dialogue and input into national forest management.

- *Partners/partnership*: When used, this refers specifically to signatory partners of a master stewardship agreement or their relationship with each other and the agency.

The mechanics of large stewardship projects in this study are a complex set of interrelated themes about how partners, contractors, and stakeholders experienced the administration of these projects; and how they perceived the successes and challenges of working with features of stewardship contracting authorities such as goods for services, best value criteria, less than full competition, and other aspects related to flexibility and producing local community benefit outcomes. As stewardship contracts and agreements are different instruments and their mechanics vary, most findings about each are organized in separate sections. Findings about communications and relationships that were common to both agreements and contracts are then provided together.

Findings: Master Stewardship Agreements

Findings in the following section pertain to the experiences of partners in the Klamath Tribes/ Fremont-Winema and Ashland Forest Resiliency Master Stewardship Agreements (MSAs). These findings generally focus on common themes across both MSAs; however, each MSA had distinct experiences and settings that limited the extent of these themes.

MSAs allowed significant roles for core partners

Both MSAs in this study were structured around a partnership of a few closely engaged core partners as signatories bringing resources and mutual benefit to their projects. These official roles and ability to engage directly in implementation are distinct from the dialogue-centered roles of multi-stakeholder collaboratives in contracts. Partners in the MSAs had several types of capacities or contributions.

One was pre-implementation leadership and convening of public participation in the planning process during environmental analysis. This constituted designing and leading the participatory process, but went beyond simply hosting meetings. It also required skills such as community outreach, public education about forest management approaches, obtaining relevant science, reviewing concepts, developing content, negotiating compromises, and synthesizing areas of common ground to articulate a community alternative in environmental analysis.

Other roles of partners in the MSAs were in implementation, and varied by the specific capacities of each partner. These diverse roles included:

- Tribes engaging in a government-to-government relationship (on one MSA) that allowed more opportunity for co-management of former reservation and ancestral lands.

- Serving as lead administrative and fiscal management entity on the agreement.
- Complying with required oversight and reporting requirements of agreement.
- Leading the convening of MSA partner meetings and subsequent supplemental project meetings with the agency, including developing agendas, documenting meetings, and tracking all activities.
- Establishing common stand exams plots, conducting stand exams and forest inventory, and lead the development and drafting of silvicultural prescriptions for both commercial and non-commercial operations with silvicultural certification from the agency.
- Implementing activities on the ground with in-house crews.
- Contract administration to subaward specific tasks to businesses, including developing Request for Proposal solicitations, using networks to identify potential subcontractors, awarding of both timber sale contracts and service contracts following best value criteria, and providing fiscal management and compliance oversight of awards.
- Cooperative management of both timber sale operations and service activities, providing quality assurance and timber sale accounting and tracking.
- Establishing purchase orders with local mills, leading the marketing of timber products, capturing the best return on product recapture (retained receipts), and business management and strategic planning for product value recapture.
- Providing on-the-job workforce development and training opportunities.
- Identifying and sharing lessons learned and efficiencies in implementation.
- Applying best available science and monitoring data to designing and adapting implementation of activities.
- Collecting monitoring data.
- Leading or coordinating new scientific research studies.

- Contributing matching funds through sources including other grants, program income, and utility surcharges.
- Leading outreach and communication about project progress through websites, story maps, traditional and social media, presentations, field trips, and other formats.
- Identifying and responding to emergent needs, such as the development of a SmokeWise community designation and related outreach effort.

In addition to fulfilling their individual roles, the MSA structure also required partners to interact and cooperate, particularly in areas where they had overlapping capacities or shared responsibilities for achieving a particular intent or objective. This meant that there were times when deliberate intent and energy were needed to navigate inter-organizational dynamics in order to find or adapt functional ways to work together, particularly if there were differences in visions of how to best achieve certain objectives or any sense of competition in roles. In addition, leadership changes within partner entities could pose additional challenges to building shared vision and relationships over time.

In discussing the diversity of interests in their partnerships, interviewees acknowledged challenges and tradeoffs of inclusion versus efficiency in the agreements, which involved a smaller core group of partners playing specific designated implementation roles versus a larger multi-stakeholder collaborative group or process. These partners described reaching out to other interests or sources of expertise as needed, but maintaining a relatively small core partnership in order to remain more flexible, move quickly, and achieve outcomes on the ground. Although one MSA was preceded by an extensive community engagement and collaboration process and was been followed by a coordinated outreach program through implementation, neither MSA had a standing federal forest collaborative group akin to those found elsewhere in the Region.

Innovation and flexibility provided opportunities and challenges

The novelty of large stewardship agreements required both the partners and the involved agency staff to face new, uncertain settings. There was no prior experience with this approach in Region 6 or on the units undertaking the agreements. As a result, there was "a lot of stumbling around in the dark" and "some tense meetings" in the initial years of the MSAs. A primary aspect of this uncertainty was what could be termed "role confusion" between the agency, partners, and subcontractors, particularly in the areas of inspection of service work, administration of timber sales, and implementation of prescribed fire. One example was uncertainty about if subcontractors were to obtain approval for activities and payment from the Forest Service versus a partner who had contracted the work to them, and the role of an agency contracting officer relative to a subcontractor. Questions of the role of the tribes in workforce development versus other partners also arose in one project.[6]

For both subcontractors and Forest Service personnel, a non-governmental partner holding a contract and overseeing subcontractor compliance while agency personnel ensured continued alignment with the NEPA document was different from business as usual, such that it required time and experience for adoption. As part of this experience, the building of relationships and trust among involved parties was necessary through time spent together in the field and discussing observed outcomes regularly with field data. In other ways, when there was a fast pace to the work being implemented (e.g., due to an urgency with end of fiscal year spending), there were also opportunities to more rapidly observe outcomes, build comfort, and learn. Over time and with some resolution of role confusion, some efficiencies increased. In the MSAs, key individuals within the Forest Service were essential intermediaries between partners and other agency staff, and helped facilitate difficult situations. To interviewees, there was a general sense that work

under the agreements became more "like a team sport", with players effectively coming together to ensure end goals were achieved with less need to regularly reexamine roles and processes.

Specific examples of efficiencies and flexibility in the MSAs included:

- Trading planned activities between the agency and partners to allow whoever had appropriate capacity to act when tasks needed to be accomplished
- Use of virtual boundaries
- Use of designation by prescription for spatial heterogeneity
- Capacity for a partner to develop burn plans that was provided through a master participating agreement outside of the stewardship agreement, and executed in the stewardship agreement through supplemental project agreements that consistently "built fire in"
- Partner discretion to:
  » Determine size and bundling of specific activities and how to implement them
  » Perform sale layout and marking before subcontracting to make prescriptions and desired outcomes clear for the subcontractors who would be performing the work
  » Amend service contracts with subcontractors to be responsive to changes in knowledge, operating conditions, and/or markets
- Payment of actual costs for implementation, with ability to adjust work performed without new work orders or changes that would be required in a contract arrangement; and lower overhead costs for partners, allowing more funding to be used on the ground

Pivotal to the realization of these efficiencies and flexibilities was the partner discretion and authority afforded by the agreement instrument. For partners, there was a sense of satisfaction in being able to directly lead aspects of the project that facilitated their desired outcomes, such as being hands-on in

---

[6] Perspectives of the Klamath Tribes are not represented in this study. Please see sources such as: Hatcher, W., Rondeau, S., Johnson, D.L., Johnson, K.N. and Franklin, J.F., 2017. Klamath tribes: managing their homeland forests in partnership with the USDA Forest Service. *Journal of Forestry*, 115(5), pp.447-455; as well as other perspectives in Long, J.W. and Lake, F.K., 2018. Escaping social-ecological traps through tribal stewardship on national forest lands in the Pacific Northwest, United States of America. *Ecology and Society*, 23(2).

writing or editing silvicultural prescriptions and burn plans, marking leave trees to establish resistant forest structure, or conducting layout. In particular, being able to exercise some discretion about the organization and timing of the service contract restoration work and commercial thinning operations helped the partners better respond to current conditions, such as market conditions, or to adapt if a better approach had been identified. Although changing conditions could still pose challenges, it appeared that the sense of some control and ability to adjust planned work as needed helped prevent some frustrations and tensions between the partners and Forest Service. The substantial leadership roles of partners in MSAs was also seen as important for support from other stakeholder communities. As one interviewee characterized this, *"more equal footing…meant a lot to the community to see responsible partners shoulder to shoulder at the table… And I think that lent a lot of credibility to the project that it wasn't seen as a hierarchical, Forest Service dominated, contractual relationship" (#19).*

The intersection of agreements and timber sale administration posed challenges

Despite this satisfaction with flexibilities, there were also some limits and challenges associated with administration of timber sales through supplemental project agreements within an agreement structure. Interviewees expressed frustration that the stewardship handbook *"just references back to the timber sale IRTC or IRSC"* without providing specific direction for agreements; this was thought to be so because *"Some good ideas are hatched high up but they don't provide guidance. And it looks like Region Six threw it to the timber shop to come up with the guidance for it. And so the guidance they knew was timber sale contracts…they tried to make it fit and it doesn't fit" (#10).* Situations wherein the value of timber was lower than the cost of removing it (e.g., through helicopter logging) were provided as examples of poor fit wherein "fuels being flown out of the forest" were treated as timber. It was evident that agency direction around timber sales did not resolve the difference between a situation where the value of the product exceeded the cost of removal, and one where the cost of removal exceeded product value; but in a stewardship agreement context, removing excess product with limited commercial value was critical to meeting restoration goals even if the cost of removing it exceeded the value. Some found that "timber targets" and fluid economic markets influenced implementation schedules, priorities, and available agency support.

Further, in practice, decisions about timber sale-related processes such as use of tracer paint, partner marking, or utilization standards to follow appeared largely dependent on variable interpretation of procedures among different timber sale administrators, and across different Forest settings. In some instances, these interpretations were viewed positively by partners as in line with project objectives, but in others, were not. One interviewee described how:

> *"[it was] a continual source of frustration for the partnership to have certain things like, utilization standards, pushed on the partnership that really lost money for the Forest Service. But*

because it was in their handbook, they had to follow it and couldn't make exceptions for it, where we could have saved money and done more work. In the end, we had to follow certain guidelines that were just not flexible enough to bend or be changed to our situation" (#19).

Another noted that *"for agency staff used to just managing timber sales, it was a different way of doing business, a new culture of collaborative implementation, a different way of thinking for them on what we were doing on a project they would have treated, under a conventional timber sale. It just wouldn't have happened" (#20).* Importantly, this experience differed by MSA. More friction with timber sale administration staff and partners was evident on one project than the other. This appeared to be a function of the two different national forests on which each MSA took place, and of the interpretations of staff in those different settings.

Ecological restoration outcomes and learning were significant

This study did not monitor actual restoration or local community outcomes, but asked interviewees to share their perceptions of those. For partners in the MSAs, there was foremost a strong emphasis on the quality and impact of the restoration activities that they implemented. Interviewees linked the quality of the work to the scientific basis that they were able to contribute through the MSA structure, including monitoring and research studies conducted in the implementation areas. The MSA allowed the scientific expertise of one major partner to be a core part of how the projects were implemented. Key to this was a fairly tight loop of learning from what was being implemented, and being able to apply it back to the project within a relatively short timeframe. For example, in one MSA, interviewees described being able to "implement the full extent" of the individuals, clumps, and openings methodology because it was undertaken with extensive data collection from prescription development to stand exams to implementation and tracking, beginning with smaller projects within the landscape and adapting what was learned. In the other MSA, an implemen-

tation review team of the partners and additional stakeholders helped collect data and facilitate this type of learning, as well as share it broadly, which was crucial in the social context of a project with much community scrutiny and some hesitation about active management. In both MSAs, the agreement approach allowed for the use of scientific data and learning to be an integral aspect of the work.

Interviewees in both agreements stated that the extent of their data collection and learning helped them see how they were achieving desirable ecological outcomes, particularly around improving fire and climate resiliency. In one MSA, a partner described how:

"our work has been effective to restore these forests to a place where fire is a part of the process, and can sustain these forests, we can actually show how, with our fire and forest management approach, it is not only more resistant and resilient to climate and fire and insects and disease and drought, but it also has almost a two fold increase over the above ground carbon that was historically on these sites (#5).

These outcomes were being documented and published in scientific studies, offering opportunities for further learning about forest restoration beyond the setting of that single MSA. However, there were also examples of learning in which partners perceived that some of the treatments had not been sufficient for some partners' restoration goals; as one noted, *"we settled on an agreement [with the Forest Service] that would not quite do thorough and comprehensive enough thinning in our units to achieve adequate opening or to adequately reduce the crowding stress on the trees we would leave behind" (#16).* In this example, monitoring suggested that this attempt to reconcile competing needs of understory response and wildlife habitat did not sufficiently address either, or establish conditions for the effective return of fire. However, this approach was decided upon during the NEPA process as a compromise to keep planned work moving forward in a socially complex community setting, with the hope of first addressing urgent fuels reduction needs and later following with longer-term restoration actions.

Capacity building of organizations in forest restoration

Another primary outcome of the MSAs was the opportunity for the involved organizations to build their capacities. Although some partners in the MSAs had prior experience working with the Forest Service and others through other types of agreements, the MSAs required work of new complexity and/or scale. The capacities that partner organizations had to grow through the MSAs included fiscal management, subcontracting with businesses, and administration of timber sales. Working with subcontractors in particular required partners to develop increased awareness, accountability, and oversight of the work for which they were responsible as lead entities. In one of the projects, the ability of partners to collectively track their progress and tell their story, as well as maintain public outreach, grew substantially as they executed a strong community engagement strategy. Skills in data collection and analysis were also developed in both projects through their ongoing monitoring programs. A final type of capacity built was in workforce development. This was a focus of one of the partners in both MSAs, who expanded their ability to train crews in ecological restoration techniques and grow the size of their workforce.

Findings: Large Stewardship Contracts

Findings in the following section pertain to the Mill Creek A to Z contract, Malheur Ten Year Contract, and Lakeview Ten Year Contract.

Collaborative groups provided multiple forms of support for large contracts

There were several types of roles or contributions of collaborative groups to the contracts in this study. First, collaborative groups provided venues for the sharing of diverse stakeholder interests and values before and during the NEPA process. This included dialogue about purpose and need, desired outcomes, and levels of comfort or support for various approaches to treatment. In these discussions, both the restoration and economic rationales for eventual stewardship projects emerged and were shaped by collaborators. Even when there was not complete agreement amongst participants in a collaborative group or process, the conversations helped illuminate and make more clear certain areas of agreement and areas of concern. The presence of agency staff at collaborative meetings was also broadly seen as important as it increased mutual understanding; agency staff had the opportunity to explain opportunities and constraints, while also learning more about what stakeholders valued and why. In addition, as a stewardship contract or agreement was being developed, input from collaborative venues seemed to be used at least in part to inform definitions of "local area" and "community benefit" criteria.

Second, collaborative groups were also advocates for the use of large-scale, long-term stewardship instruments as the means to achieve their desired goals. This took a few forms, such as letters of support, or obtaining additional support when needed by drawing on larger networks of other organizations and industry, other levels within the Forest Service, and elected officials. In doing so, they argued that the tool of stewardship contracting was the appropriate and desired way of packaging the necessary work to be done. Another form of support

was that demonstrated by stakeholders in collaboratives who defended plans for stewardship projects to others who were skeptical. As one interviewee described, *"while some groups outside of [the collaborative] thought this was a timber industry ploy to gain control over public lands, [the collaborative] saw it as an innovative way to apply science-based restoration" (#8).* Another interviewee explained how they would "transparently advocate" for the use of large stewardship projects within their professional community, in which there were divergent views about stewardship authority.

Third, as stewardship projects were implemented, collaborative groups also became a venue for receiving updates, processing information, and at times, airing questions and potential concerns. Collaborative stakeholders would request updates on progress, and raise questions about what was being accomplished or learned in other to remain apprised. Both within collaborative group meeting settings and more informally, there was some extent to which contractors or other industry representatives (who were both collaborative participants and contractors or purchasers on a large stewardship project) would share their own updates, and concerns if any, with the collaborative; while also navigating confidentiality requirements for a contractual relationship with a federal agency.

A fourth role of collaborative groups was to encourage, support, and contribute to the accomplishment of monitoring progress and outcomes. This included developing monitoring questions, engaging with scientists to design monitoring protocols, finding sources of additional funding for monitoring if needed, finding an administrative arrangement for the monitoring program, and receiving updates and learning from results. In addition to various types of monitoring, this has included some examples of new scientific research studies.

Several interviewees characterized these multiple collaborative contributions as an essential "prepping of the social ground", and stated that collaboratives had invested "years of socializing" to fa-

cilitate the implementation of stewardship contracting (#12). A further finding was therefore that collaboratives' extensive investment through these roles fostered both 1) often substantial hopes and expectations for the outcomes of large stewardship projects, and 2) their extensive interest and a sense of ownership in large stewardship contracts, despite the lack of an official or contractual role in implementation. Further dimensions and implications of this finding will be explored and discussed in subsequent sections.

Many interviewees felt that an appropriate diversity of interests had been represented in their collaborative's planning of their project(s) relative to the types of vegetation management activities and locations of work. However, many also suggested that there had been missing interests in ranching, recreation, and local communities of place. More specifically, these interests included:

- The ranching/grazing community in general
- Grazing permittees in project areas
- County commissioners or other local government representatives
- Members of the public in local communities
- Private landowners
- Tribes
- Recreation interests, particularly across the spectrum of user group types
- Wildlife interests

Grazing interests, private landowners, and tribes were considered important missing players because of their stakes in what was planned or implemented on national forest lands due to permittee roles, adjacency and proximity, and roles as sovereign governments. Recreation and wildlife interests were thought to potentially offer valuable perspectives on how people interacted or connected with national forest lands. Local community leaders or community members from the public were recognized as key in creating a broad sense of local support for a project; when decisions were made with the involvement of smaller or more exclusive groups that did not include local community perspectives, this was considered to detract from such support for a project.

Positive restoration and resiliency outcomes were recognized, but scale was questioned

In all three contracts, interviewees believed that a larger number of acres had been actively managed in some form than would have been without a large stewardship project, even if some were dissatisfied with aspects of the process. Many spoke to how substantial of an achievement this was compared to the amount of prior management; as one interviewee noted, *"we were just able to treat a lot of stuff that either may not have been treated before, or may not have been economically real good option" (#1).* Some interviewees also thought that treatments were achieving or seemed likely to achieve silvicultural goals such as shifts in species composition and reduced densities, although a few raised concerns about a potential deficiency of heterogeneity and the prospect of landscape fragmentation. Some observations about restoration outcomes included:

> *"Collaborative planning on [this national forest] has resulted in an approach to active management that targets ecologically appropriate changes in species composition, basal area/stem density, and forest structure (and other ecologically important considerations) that should increase landscape resilience. Which is to say: the 10-year is executing the right kind of treatments at significant (if still insufficient) scale" (#12).*

"On post logging field trips I felt like it had been an ecological project that took place mainly on previously logged areas. Leaving clumps, and limiting opening sizes was consistent with wildlife objectives and seemed to protect the most resilient trees. Hydrologic restoration projects, such as moving a riparian road, added to the project. Over the long term, I believe it will become a more resilient forest, able to withstand climate change better than before treatment" *(#8).*

"We have treated thousands and thousands and thousands of acres. And all of them are better than when we started, certainly. Now we're reducing fuel loads, we're altering species composition…we're improving the roads, every cell we enter we grade the roads and reintroduce drainage and water bars and all those things. And we put rock crossings at stream areas, and we're certainly improving the infrastructure of the forest transportation system" *(#9).*

"It will be interesting to keep an eye on that, watch that as we get to the point where we are finishing some of the piling and the prescribed fire and the fuels reduction. I think we're going see, we're meeting those objectives of density management, which will help us in and around insect and disease. I think the management with an eye toward species composition, we're starting to see a return back to the more shade, intolerant, fire tolerant species. I think we're seeing just from that larger landscape perspective, the more mosaic look, where we've got some thin areas, thick areas and openings, skips and get all those kinds of things. I think we definitely are, and I think it's at a scale, a meaningful scale" *(#14).*

Implementation on the ground in stewardship contracts occurred through task orders, and contractors had opportunities to discuss and negotiate the size (i.e., included board feet), and amount and types of work that would be bundled into a task order. This allowed some input on implementation design, or the specifics of how restoration activities were organized on the ground in terms of spatial size and unit layout. Design features that interviewees gen-

erally viewed as in line with the intent of stewardship contracting were spatially larger units with more intensive treatment percentages per unit, in closer proximity to each other, and strategically located and arranged with the intent of meeting landscape or watershed scale management objectives. As one interviewee described:

"They went from very small units. You might have a five-acre unit and then you move everything up the road a mile for another ten acre unit which is very costly and limits the amount of work that can be completed economically. And, so through a lot of discussions out on the ground We finally transitioned to landscape or watershed type sales…Larger units with a focus on treating the entire landscape with end results in mind, instead of treating every acre" *(#1).*

Where these design features were in place, interviewees indicated that they made sense from an operational standpoint (i.e., the costs and time associated with mobilization of equipment and people), and felt that they supported the desired landscape-scale outcomes of their stewardship projects. Perceptions of the degree to which these features were being successfully used varied by project. In one project, this seemed to be the approach from the start. In another a move toward this approach occurred over time after feedback from the contractor and learning, and in a third, it appeared to be an outstanding point of unaddressed concern and frustration for project partners and stakeholders. Some of this frustration specifically was about units not located near each other. This necessitated costs in mobilizing to work from unit to unit, and also led interviewees to question if landscape-scale objectives were being achieved with what appeared to be a scattered approach to unit location. However, in some examples, interviewees also described wanting to drop units not anticipated to be economically-viable. In two projects, some units were removed from the required work under such circumstances, but the ability to drop units depended on location and the specifics of a situation. Some units were still treated, but moved from timber to service work where some interviewees felt the treatment was not to an appropriate level to change species composition as desired. Many also were concerned

that the spatial distribution and scale of treatments remained insufficient to achieve landscape-scale outcomes:

> *"As you're driving around looking at things, it still feels like Swiss cheese. Even though we're doing more than we've done in a long, long time, it just seems like we still have a long way to go to get to what it is that is in our heads when we finish a planning project"* (#2).

> *"We're just logging the tractor ground and bypassing any areas that did not appear to economically viable"* (#1).

> *"I'm not sure that the objectives to actually do landscape scale restoration were actually met, whether or not there's actual true landscape restoration on that project area"* (#13).

Several interviewees recognized that constraints to achieving larger landscape goals or treating more

acres more completely stemmed from barriers beyond the design of a stewardship contract, however. For example, they suggested that too-small treatment footprints were due to forest plan and management designations, funding limitations, or concerns about social acceptance during environmental analysis. Where they perceived failures to sufficiently reduce basal areas or alter species composition, they often attributed it to the diameter limits of the Eastside screens.

Still others suggested a lack of complete knowledge of how to "solve the puzzle of forest restoration" and achieve "the long-term solution of maintenance", which was also beyond the bounds of being addressed within a single stewardship project. Interviewees who felt that treatments were not returning fire to its historic regime or supporting resilience to future wildfire tended to link this to a lack of prescribed fire treatments as a result of insufficient agency capacity, a lack of funding, or burn window timing limits.

Flexibility varied by project

Most interviewees interpreted the "end result" aspect of stewardship contracting to mean increased flexibility in implementation. Implementing contractors or partners are guided by contract specifications and silvicultural prescriptions. Interviews showed that some variability across projects in how flexible or adaptable these could be. In one project, an interviewee stated that specifications were not changed in any way: *"Well, the conversation is a nonstarter because you're fulfilling a written contract with specifications that are established in the office and they basically say, 'no, you can't do that.' Flexibility is key in implementation of projects especially when the agency is so understaffed and ground truthing was most often not completed."* *(#1).* Yet in another, interviewees described a few instances in which specifications were amended. The Contracting Officer addressed the need for amendments in this case by working with forest-level staff to discuss and revise a new draft during the pre-award task order stage. Other interviewees suggested that stewardship contracting required new thinking about how to write contract specifications from the start, rather than just a habit of using "copy/paste" from prior task orders; and that *"my expectations with stewardship and something big like this is where the contractor or somebody you're going to be working with for years is there should be a lot of good back-and-forth on ideas on how to put a contract together, some of the specs" (#15).*

Amending prescriptions did not appear to be a common practice in the studied projects, and occurred only under specific circumstances. Amending a prescription required review to ensure it remained within NEPA, a note to the file, and an amendment to the contract. In one example, an amendment to the prescription was based on what implementers were learning on the ground and a field tour with the agency personnel who had written the original prescription, and it and allowed for adjustments that would bring the work more in line with the ecological intent of the project. Some interviewees described a concern that monitoring and learning in their area had produced new knowledge, but that prescriptions written before that time could not

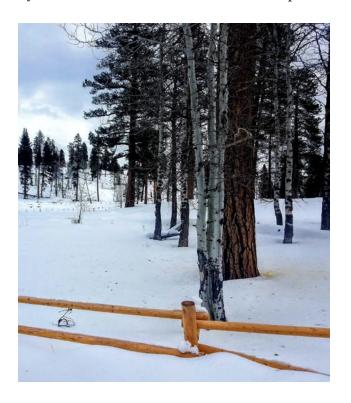be changed to reflect that new knowledge or allow adaptive management.

Another important aspect of flexibility was interviewee perceptions about if the Forest Service was or was not sufficiently flexible. In a general sense, flexibility in this context meant willingness to change features of a project's implementation based on changing conditions, new knowledge, or contractors' views on what would or would not work well from operational experience. This was described as *"if you have the freedom to do what's right, you look at that and you're not just so bogged down in the minutia of numbers on a sheet of paper. 'Does this look right on this unit?'" (#1).* A large majority of interviewees viewed flexibility as desirable, which may be expected in a key informant population of individuals closely involved in the execution of stewardship contracts; however, one stated that *"the likelihood of putting more flexibility for a contractor to interpret, that would make me feel really uncomfortable. I don't think that's necessarily appropriate. It should be the specialists, the experts on the projects that should be the ones that are actually defining the objectives and how those objectives are met, is how I would say" (#13).* Other interviewees suggested that while micromanaging was not appropriate, neither was broad latitude, and that flexibility required choosing the right operator who had experience and discretion to successfully implement a contract in a non-traditional environment.

In each contract, interviewees tended to characterize their experiences as a mixture of flexibility and inflexibility from agency staff, depending on the individual. Staff who were willing to "go walk the ground", who would discuss questions and issues as they emerged, and who had more local and contextual knowledge were consistently regarded as more flexible and reasonable than personnel who were not located on a Forest unit and/or who did not take the time to review issues in person and in the field. In each contract, there was at least one agency individual who was viewed by external stakeholders as a key intermediary who helped facilitate their interests and negotiate flexibilities with other staff who might have been more resistant. These inter-

mediaries were either in line officer or partnership coordinator positions. In one project, there was a strong sense from all interviewees that such flexibility was not present. These interviewees noted that forest staff *"should maybe been more willing to listen to [contractor] options or some proposals on how to do things" (#15)*; another described how:

> *"Our logging and service partners have spent years coming to agreement on prescriptions for what we actually want to see which trees get logged and which don't…Then you have a contracting officer who is not part of the collaborative, and is like, "Well, we can't do that. We've never done this before. These prescriptions are way too complicated. We can't do that. We never do that on my forest that I came from. And so then what happens is, when the contractors get the prescriptions, they're like, "This isn't what we agreed to." (#18).*

Flexibility in stewardship contracting was closely intertwined with other dimensions, such as communications and relationships, and with specific issues such as best value and pricing. Thus, flexibility will also be discussed relative to those topics.

Determining costs was a source of contention

A substantial portion of interviews with stakeholders in large contract projects focused on perceived challenges in pricing, costs, and defining best value. These themes are interwoven in complex ways, and related also to other findings in this report about communication, flexibility, and transparency.

First, one challenge in large contracts was the relationship between the cost of the service work and the value of timber within a project. Timber was appraised on all studied projects as per the Timber Appraisal Handbook in Region 6: through for the Transaction Evidence Appraisal (TEA) system, which uses the results of past sales for establishing the Base Period Price, or the volume weighted average high bid for sales in the base period.[7] Federal Acquisition Regulations (FARs) also applied. One aspect of this challenge was a perception that the amount and cost of service work within each project often in reality exceeded the value of timber product, but that the appraisal system did not reflect this. A primary concern was that appraisals of timber value were inaccurate given local context and amount of smaller diameter material, and the appraisal process was not transparent. This was a source of significant frustration, exemplified in this account:

> *"We had a question and answer section of the solicitation which was incorporated by reference as part of the contract, The question was, what happens if you're losing money on the timber side, because the appraisal is wrong? , you're supposed to use the service work to off-set those losses, and you're supposed to build in profit, risk, and all those things. Well that all sounds good, but it's not actually done that way…And once they set that price, once they set the government estimate for service work, no matter what we do, no matter how good of an argument we make, we've literally met with them and said, "Here's why you're out of line." And they look at us and nod their head, like, "Yeah, agreed." "Okay, well here's why our ser-*

---

[7]   FSH 2409.22 – The Timber Appraisal Handbook established the use of the TEA system in 2001. Available at: https://www.fs.fed.us/im/directives/field/r6pnw/fsh/2409.22/2409_22.doc

vice numbers are inflated, here's why they're not what you think they should be. Because we are literally making up for losses on the timber side in the service work." "You can't do that." "Why can't we do that?" "It's outside the FARs." That went on for a year. We stopped even battling that. We've gotten into a rhythm of knowing what they will and won't do. While we may not agree with it, it's just wasting air. So they may understand locally, like, "Hey, you're appraising a task order at $90 an MBF, we're underwater at $50 before we even put it on a truck, you can't possibly think that's appropriate." Well it's the TEA appraisal system. And that's completely a mystery, they don't show us that, we can't see what they're using to justify it…we don't get to see the TEA appraisals. I've been told by [staff on other Forests] that that's not right, and that if we request it we should be able to see it. But we never have" (#9).

This issue with the lack of transparency in the appraisal system was not confined to a single project. In addition, other interviewees noted how timber appraisals and agency knowledge did not match well with their local industry context.

"They [the Forest Service] know the sawmill needs logs. They know that we need so many loads per day. beyond that with the market for example, no, they don't understand that at all. They don't come from that background. Their appraisal process is normally done by folks that don't understand the actual on the ground day to day operations and what things cost…They use a log cost program for developing logging costs for different logging methods. But, those are not always right. And I feel like they don't always look at the local economy, especially in [local community]. Our economy here is much different than that in [other community]. But [here], you really can't appraise something the same way you would on [another] district where you have the plywood buyers… the Forest Service doesn't understand that. The value of products, the cost associated with creating those products, they really don't have anyone with an industry background" (#1).

Interviewees did indicate that this was less of a challenge in instances where agency personnel did have sufficient knowledge of operations and what was possible in different systems. They also described how knowledge and mutual understanding with agency staff improved with time and experience. They indicated that "back and forth" conversations about price were cumbersome, they did allow opportunities to explain what affected industry costs, and often, to have honest discussions. However, it also appeared that prolonged debates about cost contributed to an acrimonious relationship between contractors and agency staff in one project, creating an environment in which there was a lack of trust in each others' motives, and these negative social perceptions could become magnified when shared through collaborative venues and networks, or among agency staff.

There was substantial interest and tension about the meaning of local community benefit

A further substantial topic related to pricing and value was how benefit to the local community should be weighed alongside other considerations in the selection of a contractor and in setting prices within a task order. Within this topic were several sub-themes. First was the importance of local benefit. The concept of supporting local industry and economic outcomes for local communities was a major motivator for collaborative stakeholders. As one noted, *"that's why there's a lot of support for stewardship" (#7)*. Long-term stewardship contracting was embraced by collaborative members, as well as political leaders, as a tool to help with log supply for the limited number of forest products processing facilities remaining in the Interior Northwest (east of the Cascades). This finding, although it may seem obvious, underscores that local benefit was an important criteria to stakeholders, such that many appeared to value it more highly than cost to government. This level of interest in local benefit also likely has heightened the intensity of questions or contention about it.

Second was the valuation of costs versus local benefit criteria and outcomes. All interviewees described how local economic impacts had resulted from large stewardship contracts in their area, yet not all felt that the Forest Service had valued local community benefit over cost when setting prices. Others noted that they perceived tensions from agency staff who did not feel they were truly receiving best value from contracts; for example: *"I know there has been skepticism on the Forest Service's side that they are getting best value. I think one of the things that's happened is that the Forest Service has more or less given lip service to local community needs, benefits, outcomes, best value. They say it, they put it in the contract, and when it starts to happen, they don't value it" (#12).* Related to this was a sense that contracting at lowest cost to government in general created a challenging environment for businesses in the forest restoration sector and did not align well with the goals of stewardship contracting:

> *"You've got a guy that owns a masticator who makes $300,000 every summer on that thing. And then when it comes time, when 300 acres of mastication comes up in the winter, he'll bid it down, way below any ability to make money. Because it's just something keeping the machine or operator going…There's going to be somebody that comes in and says, 'I'll do that cheaper.' Because they don't need to make money on that project, for whatever the reason." And we're doing this huge, landscape-scale project. And you can afford to lose $10 an acre on 400 acres. You can't afford to lose $10 an acre on 4000 acres. It is an order of magnitude" (#9).*

> *"I get service contractors, if you're not feeding them enough work and you're looking at having to lay your workers off, your bid prices are not commensurate with what they should be. You're desperate to keep people working and so you're going to bid as cheap as you can to keep people going and the government gets a hold of that number and says, "Oh, see, this is the number. This is what it should be." That was a bid based in desperation to not have to have to lay our people off, not what we should be making for the work" (#2).*

Third was the complexity of the meaning of local benefit in practice. All interviewees recognized that the stewardship contracts had produced substantial economic impacts in their local communities. These included direct jobs in forestry and wood products processing, secondary impacts from purchases, major investments in other forms of local infrastructure such as new processing technology and service sector businesses, and reduced risk of wildfire to community values and assets. But despite these outcomes, there was also evidence of controversy and conflict regarding who benefited and how. This was most evident in one project wherein the contract came to be viewed by some local, non-involved contractors and reportedly some local Forest Service staff as a monopolistic arrangement in which the size and duration of the contract unfairly excluded some local businesses from participating. This perception existed despite the extent of subcontracting to multiple other businesses under the project, new business creation, and deliberate efforts to document the broader economic impacts to the local community. Interviewees shared that they were aware of others who had a sense of negativity and judgment towards the participating businesses and individuals in the social setting of this small rural community and in the broader forest industry community, but themselves did not have this sentiment. In another project, there was some uncertainty and questions about how "local" was defined, and which businesses could be considered local.

In all three cases, interviewees saw that lead contractors created opportunities for other businesses though subcontracting. The volume and diversity of work to be done in each project reportedly allowed for multiple, often smaller, businesses to participate. These included service contractors, timber operators, and technical service providers who would not have been able to compete on larger projects. In the context of one project, very small businesses that would not typically work directly with the Forest Service were able to perform the work through the contractor. Interviewees viewed this subcontracting as a positive outcome and a means of spreading the benefits, but some acknowledged that this was view was not always shared by others locally or within the regional for-

est industry. Some noted that this was impossible to avoid in a rural community setting—e.g., *"with any small town, it's not exactly spread about equally" (#14)*—and that not all businesses possessed the necessary capacities to serve as prime contractor on a large project, such as investments, expansions, taking on risks, and administering large amounts of work. Interviewees from all three stewardship contracts suggested that the capacity of a contractor to implement the scope and scale of work in a large, long-term contract was crucial, and that criteria about contractor record of performance and experience should be weighted highly in choosing contractors for this type of project. Capacity included administrative abilities to manage a large contract and subcontracts, operational skills, appropriate equipment, and knowledge of the silvicultural background and context of the projects. Businesses with these capacities further built them in order to manage these large contracts, but there were significant questions about how this would be sustained in the future if local stewardship contracting approaches were to change.

Findings: Communication and Relationships with the Agency

Findings in this section are derived from all five included projects and encapsulate experiences common in both the MSAs and contracts. Communication and relationships refers to the interactions of agency personnel and key stakeholders as they worked together in the course of implementing a stewardship project. The topical focus of these interactions varied, and some of the specific content of these communications (e.g., concerns about project costs) was also discussed in prior sections in more detail. However, there was sufficient data about communications and relationships to address this as a thematic area of its own. Within this were several sub themes.

The importance of shared vision of stewardship

First was that the establishment of a collective vision for stewardship contracting in a project was important for several reasons. This vision encapsulated a shared intention to try novel approaches:

"… the lesson is that with stewardship contracting, it's made things possible that we hadn't thought about or been able to implement in the past. And so as long as people can understand that there are… you can't just throw your hands in the air and say, "well, there's just really nothing we can do." Because there probably is. Stewardship contracting is that thing that can make that pop, that new idea or that way forward possible. You just have to be open to see it" (#17).

In each project, there was a sense that the staff and stakeholders who shared this vision were able to work together effectively in pursuit of the intent of the authority. There was also significant appreciation for the space that stewardship contracting created, and recognition that it allowed partners and contractors to work with the agency in new

ways. This appreciation was expressed repeatedly by numerous interviewees. However, when the intention to innovate and a shared understanding of the opportunity of stewardship contracting was not held among all agency staff who touched a project, it posed multiple challenges. In particular, this intention was articulated among line officers or resource specialists who were engaged in collaborative group or partnership settings, but other staff types such as timber and contracting were not always part of those processes. Holding meetings or workshops to deliberately discuss the purpose of end result contracting, the desired outcomes, and the levels of feasible discretion for each type of involved staff was a suggested approach to building that vision, and ideally would occur as early as possible in a project or as a means of helping address issues if they emerged. Some interviewees described the importance of line officers setting this vision; for example, *"I think having the forest supervisor say, "You're going to participate in this project and let's start getting people together to build relationships and get out on the ground and talk some of this through beforehand:--was important" (#19).* But this vision also needed to be shared by all types of staff, at all levels, including timber sale markers, so that they understood the rationale and desires behind the prescriptions. This vision also needed to be well-understood and shared by collaborative participants; as one interviewee described it, groups benefited from recognizing that it was *"so unique and potentially could have really blown up in everybody's faces, they put a lot of work into being on the same page about it" (#7)* from the start.

The shared vision of stewardship also included a commitment to identify solutions and truly work together on an ongoing basis through meaningful partnership between the agency and non-agency stakeholders. Involving non-agency stakeholders in deliberating implementation decisions was necessarily different in the setting of agreements versus contracts. In the latter, government conflict of interest and contracting confidentiality policies mandate a formal, arms-length contractual rela-

tionship between the contractor and agency. Interviewees appreciated this legal necessity, but also expressed desire to have more open communication given the size, complexity, and potential uncertainties inherent in a large and long-term project: *"I think my expectations with stewardship and something big like this is where the contractor or somebody you're going to be working with for years is there should be a lot of good back-and-forth on ideas on how to put a contract together, some of the specs" (#15).* Another challenge, particular to agreements, was how the novelty of the master stewardship approach caused staff to seek advice from multiple sources in a way that created confusion in information sharing:

> *"Part of that too where people when you first start out with anything new, I think there's a challenge in, they've never seen it before. So they have no idea of how it's going to work and what the expectations should be. The answer to that question, they would go to the people outside of the partnership to get those questions answered, which actually would give them incorrect information. And so going back to the contractors themselves, that's where you would get these other loops of communication, they were outside of the partnership, which would then confuse how everybody else was supposed to be working together" (#4).*

Other interviewees described reticence or hostility in trying to work with timber sale or contracting staff who found the direct involvement of partners, in tandem with requests to try non-traditional approaches, to be threatening: "what they feel is a diminishment of their power, of their control, of their knowledge, by sort of enabling outside partners to sort of say how they want to get it done…and now, it's like, *"Well, there's all these ways and you kind of go around all of those rules?" (#16).* This resulted, at times, in tense or confrontational interactions between agency personnel and partners.

Challenges in administrative communication

A second major sub-theme about communication was the challenge that some stakeholders faced in consistent, clear communication with agency staff in administering projects in both agreement and contract settings. Examples were provided such as being unable to obtain answers to questions that were necessary for signing paperwork or taking next steps on a project. This often appeared in the form of questions that were passed from person to person, with each saying they were not accountable or able to answer them; or, different people provided different answers and created uncertainty about how to proceed appropriately. In some scenarios, a "breakdown" would occur where a stakeholder was waiting for a next step, was unclear what was happening within the agency, and did not receive communication for long periods. This was often due to turnover in positions. One interviewee provided an example of a cascading series of delays in finalizing a supplemental project agreement:

"Yeah, what happened was a person retired in the Forest Service that had been working really closely with us. And it was getting close to the end of the sale. And there were some final agreements that needed to be accomplished with actual pricing. And so the Forest Service changed people, they changed the pricing requirement, they changed another person, they changed the administrative person that was with this, so because it started taking 18 months, there were three people in the Forest Service that ended up turning over in that period of time, and working policy changes inside the agency at that time. So you'd get to a certain level, then something else would change. Then we'd have to almost go back to the beginning, but it was one of those where we had to continually inform them. And then the person that would come into the new position, of course, this wasn't their most important thing. So it would take them one or two months before they would even be able to look at this responsibility or task. And then by the time they would get to it, maybe something else would have changed.

That's why it took 18 months, it's just all those continual changes that we had to address...the implementation was done in six months" (#4).

Most interviewees attributed these types of breakdowns to agency capacity, and appreciated that some people were doing the best they could, but were facing staff shortages and extra assignments on top of their regular jobs. The rate of turnover, however, was seen as a major factor in allowing administrative steps such as signing of necessary paperwork, or even in one case, payments, to be substantially delayed. Interviewees on both contracts and agreements stated that despite working regularly with the agency, it was very unclear who they should communicate with, and that the organizational structure and assigned point people "on paper" rarely were those who aided them in reality. Turnover also could create substantial changes in direction, and examples were provided of new staff or staff on detail choosing to interpret what was and was not possible differently than the prior person in their position. In some cases, this was advantageous to stakeholders' interests, but in others, it constituted a derailment of momentum. Taken together, lapses and difficulties in communication around administration appeared to foster a sense of being unheard and perceptions of inefficiency in working with the agency.

Communication between the agency and collaboratives

A third theme was communication with collaboratives about the progress of a project and its outcomes. For all three stewardship contracts with associated collaborative groups, there was a sense of inadequate communication and of exclusion, which had several facets. One was the lack of connection with most staff associated with implementation (i.e., timber, acquisitions management). More engagement with these staff was seen as desirable in that it could foster mutual understanding and knowledge. But these staff had reportedly not traditionally attended collaborative meetings or field tours. A few examples were given of collaboratives requesting this attendance or asking specific questions of these types of staff, but not receiving a response. In one project, some interviewees felt that this was a challenge from the start of implementation; they stated,

> *"I do think there needs to be maybe just more bigger picture understanding in the collaborative about the implementation process and updates with that, because I think there's been a full stop after the planning stages at this point in time, but that's not where it stops. I think there needs to be more transparency in the outcomes, I guess, and whether or not the outcomes or whether or not the purpose and need of the project is met. I don't really think there was that much organized outreach about implementation of the project from the Forest Service in this instance" (#13).*

In an example from a different project, interviewees described limited engagement with implementation personnel and then a deterioration in communication over time: *"we felt that we were pretty equal partners early on. But then we're subsequently really relegated to the backwater and our questions about the contract, our feedback about how to improve it, and to make it more efficient and achieve all of our objectives were really rebuffed, particularly by the regional office" (#18).* This interviewee also described that differing accounts of what the issues and needs were in their project became so numerous and contentious that

collective problem solving was stymied by confusion and finger pointing: *"Everyone has a different opinion about what the actual problem is and how to fix it. And I think the Forest Service is like, "Well, nobody knows what the real problem is, nobody really knows how to fix it. So we're just going to keep doing it the same way."* A lack of change, despite acknowledgement of issues, was troubling to several interviewees in this project. In the third large contract, an interviewee stated that in their view, leadership on their Forest *"thought the collaborative was kind of a joke"* and *"were extremely hesitant to participate in the collaborative"*, although other staff on the same Forest were seen as supportive and engaged (#6). This interviewee, and others in the other cases, suggested that collaboratives were not being utilized to their fullest extent as a supporters of the agency and stewardship contracting. A few also emphasized their frustration with agency unwillingness to have transparent, honest conversations, which did not align with collaborative approaches of open dialogue and collective problem solving.

Multiple forms of learning fostered shared vision and communications

In this study, "learning" refers to activities that involved obtaining and processing new information, and responding with changes. Learning was essential to aid with the process of trying new and challenging approaches. Examples of learning were related to 1) on-the-ground operations and implementation in practice, 2) project-level lessons learned processes, and 3) monitoring and scientific research. Depending on what the learning was about, it involved different numbers and types of actors, and different degrees of formality and documentation. As previously noted, learning was closely related to flexibility, as learning often necessarily precluded and spurred changes in action or behavior.

One type of learning was based on the daily experiences of the people working on the ground implementing large stewardship projects, and those overseeing that work. This learning could occur

internally within a business or partner organization, or among those implementers and agency personnel. Several interviewees spoke to the importance of largely informal, on-site discussions with those "holding the chainsaws" in order to hear about what they were noticing, why they were making certain decisions, and/or to change their techniques to remain within the intent of the project. The opportunity for Forest Service personnel with operational or silvicultural backgrounds, to interact with workers who were "boots on the ground" and "spoke the same language" helped build a sense of shared purpose about treatment objectives. These interactions were also important for "training up" agency personnel who might be new to a unit or less familiar with the mechanics of implementing vegetation treatments. In instances where prescribed fire was one of the treatments, on-the-ground discussions of the ecological objectives of prescribed fire were essential for learning among contractor employees and agency staff from fire backgrounds:

> *"We had our own personnel that were more overseeing the Forest Service and the contractor that we had hired, in order to protect resources, by changing tactics, change our lighting, change our pile construction…So it's just a different way of sharing power during an operation. The single focus of just fuels and 'we're just going to light it up' needed to be discussed . We wanted to bring more of an ecological prescribed burning consciousness to the operation, that would achieve multiple objectives" (#20).*

These learning opportunities seemed to be mostly ad hoc or to be informally inherent in the process. However, in one project, a regular weekly meeting time was set for the key agency staff and partners or contractors involved in a project. This standing meeting was described useful for jointly recognizing questions or issues as they emerged, proactively seeking solutions, and sustaining flows of communication in general.

A second type of learning, found in two of the studied projects, was explicit processes for reflecting on the project itself and identifying lessons learned. In one project, this occurred through the long-term engagement of a social scientist who observed numerous meetings, and delivered white papers and presentations at least two points. This was a premeditated, proactive approach. In another project, a lessons learned process emerged as concerns and issues began to arise, and a series of white papers were developed to codify common understandings and guidance of unclear concepts or terms. Both of these processes appeared to be somewhat internal to the Forest Service, in that they focused on questions and interests that mostly originated with agency staff, although there were some opportunities for ideas or products from the processes to be shared with collaborative groups.

Interviews suggested that these processes were valuable to involved Forest Service employees in that they helped explore and unpack assumptions. For example, initial expectations around staff capacity and involvement in one project were not matched by the reality of what happened as one project unfolded. The lessons learned process captured how and why that occurred, and validated the experiences of participants. In another project, some personnel's resistance to the use of a certain contract mechanism was openly discussed in a way that allowed others to understand it, and develop ways to help address it. However, several interviewees perceived these processes as internally focused. As noted, *"it didn't get to the root of the issues of interest [for the collaborative]…which was concerning" (#13).* Several interviewees spoke of their collaborative conducting its own lessons learned process with some, but not sufficient, connection to internal agency processes.

In addition, numerous interviewees across the studied projects indicated that they desired more deliberate, inclusive, and proactive opportunities for after action review and lessons learned. Reported challenges included 1) review meetings among agency personnel and contractors or partners not occurring at the frequencies promised or expected from the start of a project, 2) meetings occurring only when "triggered" and planned by stakeholders, and 3) some agency personnel not attending meetings when invited. Interviewees indi-

cated the need for a more deliberate shared view of large stewardship projects as learning environments. As one described, *"Adaptive management isn't just about what happens on the ground in terms of the prescriptions, it should be about how we execute these things and the contract mechanisms themselves" (#12).* Another said that they wanted to see agency personnel engaged in stewardship across the region more regularly gathering to share their best practices and develop a more cohesive, regional approach to stewardship deliberately derived from lessons learned.

A third form of learning observed in all projects was monitoring and scientific research. This monitoring appeared to be largely led or organized by partners and collaborative groups, in line with the multi-party monitoring requirements of stewardship contracting authority. Interviewees consistently described monitoring and research as valuable in several ways. First, it offered validation that certain management approaches were measurably accomplishing restoration objectives. This

validation helped increase the comfort of some agency staff and stakeholders with treatments about which they may have had initial uncertainty, particularly as it was built on site-specific data that was often quite detailed as collected by implementing partners. In the instances where results were published in scientific papers, this further legitimized the approaches. Second, in three of the projects, multiple interviews said that monitoring seemed to indicate that "not enough was being done" and that it helped clarify a need to either intensify a treatment; change its pattern, extent, or scale; or ensure that other treatment types were also implemented. However, a source of frustration was that it could often take years for this learning to be reflected in further projects, given planning timelines. Further discussion of restoration outcomes is provided in the following section. Finally, learning from monitoring had other downstream or spinoff effects for other projects within the same area, for plans for future landscape scale projects, and for other scientists who came to observe.

Discussion and Implications

This study focused on the experiences of stakeholders closely involved in five large, long-term stewardship projects in Region 6. Undertaking large stewardship projects has required innovation and experimentation that brought numerous challenges, as well as recognized outcomes. Agreements and contracts are fundamentally different instruments, and each project's individual settings also shaped stakeholder perspectives in ways that are not captured by this type of study. However, there are several overarching themes, which are grouped by the major topics that guided this research.

Innovation and flexibility

The expression of stewardship contracting was unique in each setting, reflecting variability in different "shops" of the agency, from Forest to Forest, and from individual to individual. The dynamics of each project and the types of flexibilities possible appeared highly dependent on the context and people involved. Undertaking a large stewardship project required the coordination of stakeholders and agency staff with different value orientations working to carry out different aspects of the agency's multiple use mission, and were subject to both positive learning as well as challenges associated with crossing those functional boundaries, and adopting new administrative procedures. Understandably, there can be challenges and opportunities in attempting new and more flexible approaches. Where learning processes were in place, they aided with navigating this environment, but may not have been inclusive or consistent enough to help address all challenges or foster adaptive change. Some of the mechanics of implementation challenges stemmed from policies or management direction that was not exclusive to stewardship contracting and could not be squarely attributed to the authority itself.

Implications:

- It is to be expected that trying new, more flexible approaches will pose challenges and uncertainties. Commitment to regular, sustained learning and adaptation at multiple scales from daily operations to after action reviews and broader lessons learned exercises can help facilitate successful navigation of the challenges.

- Carefully recognizing which challenges or potential inflexibilities stem from the specifics of stewardship authorities versus larger policy and management direction may facilitate more clear understandings of the advantages and limitations of these authorities. This could also include identification of the level at which these exist and may be effectively addressed (i.e., regional versus national level).

- Large stewardship projects offer the opportunity for innovation and significant outcomes, and could be practiced in more locations around the Region. More updated and accessible sources for guidance, lessons learned, and other important knowledge about stewardship contracting may support stakeholders and agency staff in doing this effectively. This could occur through both internal agency peer learning, as well as learning that brings together external stakeholders and agency staff.

Roles of partnerships and collaborative groups

In the setting of MSAs, large stewardship projects provided the opportunity for partners to contribute significant knowledge, skills, technical capacities, and resources to implementing and monitoring forest restoration on federal lands; and to share some leadership and decisions with the agency in a community-based forestry type of approach. They also allowed those entities to greatly grow these capacities. For large contracts, forest collaborative groups provided a foundation for the use and successes of stewardship projects, and were key to the ability to use the authority. Forest collaborative groups and long-term partnerships are stakeholder communities with a significant sense of investment and ownership in what happens on the national forest lands with which they engage. Their expectations for stewardship contracting in these projects were high, which could provide both strong support and pressure to the agency. There was substantial stakeholder interest in increasing engagement with implementation, including demands for more transparency about implementation decisionmaking and a desire to have agency implementation personnel (e.g., timber sale administration, acquisitions management, grants and agreements) present in collaborative venues. However, there is not a clear path or requirement for public participation in implementation as exists in the NEPA process.

Implications:

- Large stewardship projects provided the opportunity for partners and businesses to substantially build their capacities for forest restoration. This capacity building is an important outcome unto itself that should be recognized, deliberately sought, and tracked as a key outcome in stewardship projects.

- Given the importance of forest collaborative groups in initiating and enabling stewardship projects, programs that support collaborative and organizational capacity such as the former Community Capacity and Land Stewardship program are needed to support these roles.

- MSAs demonstrate how high capacity partners are able to provide substantial capacity and leadership in working on federal lands. This model may be useful to expand given future directions toward shared stewardship and budget modernization, as well as partner interest in meaningful roles in federal land management.

- There is a need to explore and articulate pragmatic pathways for agency implementation personnel (e.g., timber sale administration, acquisitions management, grants and agreements) to engage in collaborative venues.

Perceived community benefits and how best value criteria were used

Numerous perceived ecological and economic outcomes were evident from the studied projects, such as the treatment of acres at a magnitude that would not have been possible without the use of stewardship contracting, significant learning and capacity building, partners' novel and unanticipated fiscal and quantitative scientific delivery, and local economic impacts. Interviewees expressed significant appreciation for the opportunities that large stewardship projects had provided and hoped to see these outcomes continue. However, provisions of stewardship contracting such as benefit to local communities and best value were challenging to enact in part because stakeholders had high expectations for them. How these intersected and traded off in practice was complex. Some of the most substantial tensions around navigating these provisions were among the stakeholders and staff (i.e., contracting and timber sale positions) who had to work out the details on the ground.

Although the size of large stewardship projects (e.g., number of acres, proportion of program of work, duration) promised meaningful outcomes and stability for the businesses, partners, and communities involved, this also meant that few entities had the capacity to take on projects of such scope and scale. In one project in particular, even as the lead entities created opportunities for other local businesses through subcontracting, there were perceptions of unfairness. Existing research and monitoring on economic outcomes from national forest restoration tends to document impacts, such as jobs created; it does not address the social complexities of what local community benefit may mean and the divergent perceptions of competition and equity in economic outcomes that were evident in this study.

Implications:

- If future stewardship contracting approaches pursue more open competition with the intent of better distributing opportunities, there may be less development of workforce and infrastructure, as no one company will be able to take on such risk and investment, and local community outcomes will likely look different. Businesses that invested substantially in scaling up through the present large projects would face challenges in finding adequate work to meet their needs and would struggle to maintain those investments. However, this may produce less social conflict focused on a single business, and may diffuse interpersonal pressure for those involved.

- There is a need for more open dialogue between stakeholders and the agency as well as within different sections of the agency about the meaning of local community benefit and distribution of opportunities in practice. There can be diverse, even divergent meanings of this term, with implications for how stewardship contracting decisions are made. This dialogue could occur within local collaboratives, as well as at a regional level more broadly.

Pricing and timber sale appraisal

The lack of transparency about how decisions were made in both timber appraisals and acquisitions management caused significant frustration, as stakeholders with a glimpse but not complete knowledge of these complex systems used what they did know to build negative stereotypes of the people and structures associated with them. There was also a widespread sense that appraisals of timber value as inaccurate for local context and amount of smaller diameter material, and that the appraisal process was not transparent.

Implications:

- More transparency about how decisions are made in the timber appraisal process and in acquisitions management may help improve stakeholders' knowledge and ability to work with it.

- There is a need to examine the lack of timber sale guidance associated with administration of timber sales within an agreement structure in the stewardship handbook.

- If contracting decisions are made on the basis of lowest cost in a large contract setting with many acres to be treated, contractors are challenged by costs per acre at scale.

- Setting of prices may be better matched to current context by obtaining the most up to date local market data or reaching out to industry to learn about changes in markets, particularly during times of market fluctuation in which data from even a few months' prior may no longer be accurate.

- Deliberate learning may allow agency staff to increase their knowledge of operational details of local forest products processing facilities, particularly in reaching new personnel as turnover occurs.

- If service costs exceed timber value, not bringing additional funds to accomplish the service work will result in some ecologically important units going untreated and potentially limit landscape-scale impacts. Areas with higher

product removal value offer opportunity for service work without additional funds. Agency direction around timber sales may be needed to resolve situations wherein commercial value exists, but the cost of removal exceeds product value, as this is critical to meeting restoration goals.

- There has been expectation that Forest Products Modernization Initiative would provide a new or revised appraisal system, including new standards for sawlogs and biomass, that accurately reflected timber value and the local industry context in each area; however, stakeholders are uncertain if this is occurring or about the outcomes of this initiative, and further outreach and updates are warranted.

Interaction between agency staff and external stakeholders

A shared vision of the goals of stewardship authority facilitated effective partnerships between agency staff and stakeholders. When this vision was not established, or when stakeholders could not obtain answers to questions, felt unheard, or experienced administrative delays, they experienced substantial frustration in working with the agency. When they had regular contact with a key local intermediary who tried to listen to and address their concerns, their satisfaction was much higher, even when addressing challenging topics or not succeeding in their desired outcomes.
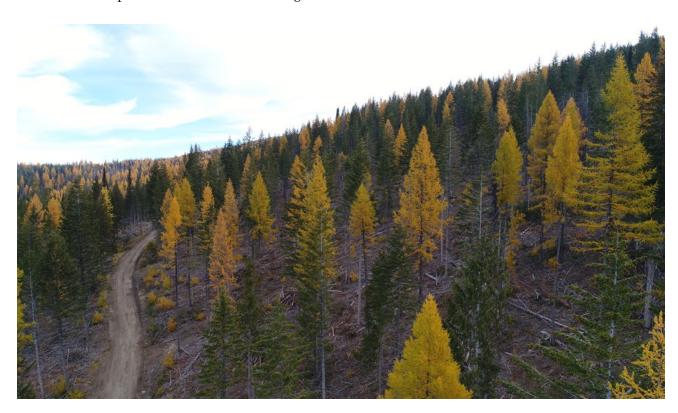
Implications:

- Centralization of contracting administration and other agency functions may contribute to stakeholder dissatisfaction as many prefer interacting with local staff, and respect their local knowledge and ability to be "on the ground." A project manager/coordinator role on the local Forest may help maintain relationships and proactively address issues.

- Large, long-term stewardship projects necessitate close working partnerships between the agency and involved stakeholders, but this can be incompatible with conflict of interest poli-

cies and cultural views of such partnerships as inappropriate (i.e., of stakeholders having undue influence over government decisions).

- Continued efforts improve communication and understanding between different "shops" within the agency may help foster more shared visions for large stewardship projects and ease tensions. Best practices for helping interdisciplinary teams work together across their disciplinary boundaries, for example, may have some applicability.

- Providing mentorship, support, and problem-solving resources for agency staff who are experiencing challenges in working with stakeholders may improve their capacity and comfort.

- Collectively reviewing and airing assumptions and expectations with stakeholders as early as possible in a project may help create more shared understanding or timely identification of areas of future challenge.

- Navigating stakeholder interest in increased access to implementation decisionmaking and personnel may require new thinking and support for staff; for example, identifying strategic ways to engage with collaborative groups at key points without burdening staff, and frankly discussing what decision space, if any, may be available to those external to the agency. In addition, including natural resource specialists in implementation in some form may also help create more integration and consistent awareness of restoration goals through the lifespan of a project.

- Tracking communications and ensuring that administrative processes with stakeholders do not fall through the cracks may help support more positive working relationships. If detailing or turnover in a key position is frequent, establishing a means of institutional memory as well as handoffs for key relationships and tasks, and ensuring that detailers or new staff are aware of partnerships, would be essential.

- Understaffing of positions and overloading of duties creates pressure and challenges the agency in meeting its obligations and showing up as a partner.

Appendix A

This appendix contains direct interviewee responses to the question "What is one specific recommendation that you have for improving large, long-term stewardship contracting?" This was intended to gather concise, targeted insights.

- Involve fire management personnel during planning to ensure their understanding of end results and the need to use prescribed or managed fire to support those results

- Do not reinvent the wheel or dismantle large stewardship projects; adjust with subtle changes and more consistency across time.

- More clearly identify incorrect expectations ahead of time as possible to prevent frustration and disappointment.

- Address tensions/conflicts internal to the Forest Service at all scales (locally, regionally, and nationally) regarding the appropriateness of stewardship contracting as a tool for executing its responsibilities, along with traditional timber harvests.

- Have the Regional Forester or Chief's office review large projects and help share lessons learned with other units who may be able to try something similar.

- Establish a decision maker on the contract/agreement who is on the local Forest and is aware of local industry context.

- Allow a lot of discretion to local Forest staff and partners to determine what will work best in their local context.

- Begin a large stewardship project by convening everyone who was involved in the planning process to pore over the recorded decision, understanding where specific rigidities and flexibilities may lie.

- For stakeholders not accustomed to federal planning and processes, have the Forest Service teach a class on its terminology and explain the rules, regulations, and policies that shape what it can and cannot do.

- Try a Blanket Purchase Agreement for a large landscape, and set it up with flexibility to choose specific contracting mechanisms best suited to different sub task order areas or project areas within it; this might allow for more specific quantity and specific timing to lead to better pricing on some of the service work.

- Share lessons learned, but do no overprescribe how an agreement or contract may be structured; these are just tools that can be used in a lot of different ways, depending on your goals.

- Working government to government with tribes should not require match.

- Conduct spatially explicit landscape evaluation.

- Find a global policy solution to fund treatment of "mediocre", costly units that end up dropped from projects.

- Change wildlife connectivity standards that do not allow for prescriptions that can change stand species composition.

- Revise specifications for sawlogs and biomass in Region 6.

- Change the appraisal and government estimate system.

- Address the limitations of requirements for certified federal burn bosses to increase flexibility to take advantage of burn windows.

- Let smart, well-trained people within the agency experiment and innovate, and do not constrain them with narrow interpretations of rules.

- Social justice, diversity, and equity have to be the primary focus in planning projects from the start and considering potential impacts and outcomes.

- Increase agency culture and agency staff comfort with listening to external stakeholders and accepting that others have expertise to contribute.

Appendix B: Interview Questions

Region 6 Long-Term Stewardship Contracting Review

Please answer these questions to the best of your ability, relative to your experience. If you do not have the experience or position to address any particular questions, feel free to skip those. You are welcome to write bullet points or be brief in your responses if your time is limited.

Your responses will not be identified with your name, and you will not be quoted in any identifying way, including any affiliation with your organization or this contract/agreement.

Roles of partners

1. Please tell me how you were involved in this contract/agreement: What roles and activities did you specifically and your organization undertake?

2. What was the value of collaboration in bringing in the partner and/or public support essential for moving projects forward?

3. What capacities do/did you or other partners contribute in project implementation, multi-party monitoring, and/or leveraged funding?

4. Were the partners on this contract/agreement sufficiently diverse? If any interests were missing, what were those?

Contract/agreement design

5. Were there clear lines of authority and communication on this project within the agency team working with you?
   a. What roles did different types of agency personnel (COs, TSAs, CORs, AQM COs) play and how effective were they in your perspective?
   b. Did you know who made decisions on the contract/agreement at any given stage? Was this communicated and how?
   c. How did you deal with turnover in agency staff or your own personnel?

   d. How well did the agency staff you've worked with understand your needs as industry/partner?

6. What types of criteria should be most important in awarding a contract or agreement here in this geographic area, and why?

7. How do you think the pricing and non-competitive conditions worked (for contracts)? Did these allow you/the contractor to meet original expectations?

8. How well do you think the process for determining best value to the government and fair market value worked? Was there sufficient transparency about costs and value in your point of view?

9. What types of contract mechanisms work best here from your point of view, and why? (IRSC, IRTC, IDIQ; double IRTC/IRSC)

10. Was this contract/agreement "the right size" for what the landscape and communities here need (in terms of included acres, scope of work, and/or timeframe)?
    a. How could it have been sized differently? Please explain.
    b. Were the right kinds of work bundled together? Please explain.

Contractors/operations side

11. Was sufficient and appropriate information provided to the public/partners about contractor selection? (Acknowledging that some information must remain confidential).

12. If applicable: Were the implementation instructions for DxP clear enough? What could be different or better?

13. Was there enough known information about conditions on the ground to help with project efficiency, reduced prices, and reduced risk and uncertainty in any ways?

Best value, local community needs, and benefits/outcomes

14. If/how were overall desired outcomes were identified at the beginning of the relationship, and how do you think those were considered throughout the project?

15. How was the project tailored to the local community?

    a. How was that consideration for local community needs balanced with national forest needs?

    b. Did this include both short and longer-term benefits?

16. What benefits were delivered to the public, in your view? (e.g., economic and social outcomes).

17. What long-term restoration objectives or other Forest Plan objectives is this project meeting, and which is it not? Why or why not?

Flexibility and learning

18. How did your USFS partners work within the constraints of current policies and regulations; or make approved policy deviations? (If so) how did this help the project?

19. What surprises or issues were encountered in moving from planning to establishing the agreement/contract to implementation? Could anything have been done differently in planning to set implementation up more effectively?

20. Were there any after action reviews, or other learning and adaptation processes? Please describe.

21. What are the biggest policy or legal changes that would have improved this project, or would improve future projects under stewardship authority, and why?

Closing questions

22. Is there anything else that you'd want to share?