

Adaptive Management in Practice: Findings from a Focused Investment Partnership Program Pilot Project¹

Ann Moote, Mamut Consulting LLC

Abstract

Three ecological restoration partnerships explored approaches to integrating adaptive management concepts into their work. The Rogue Forest Partners and Klamath Siskiyou Oak Network redesigned their field reviews to better serve as forums for shared learning, project review, and restoration program improvement. The John Day Basin Partnership organized a retrospective evaluation of several riparian planting projects and related research. One significant point of learning for these groups was that focused, reflective discussion is just as important to adaptive management as quantitative monitoring. Additional findings were that it is important to attend to relationships and maintain communication among all partners and with researchers and funders. Based on their experiences with this one-year pilot project, participants consider systematic, iterative review and adaptation desirable, but daunting for implementation-oriented partnerships. More fully integrating the adaptive management cycle into restoration initiatives will require significant commitment of partnership staff time, and dedicated funding to support it. Building adaptive management tasks into work plans and budgets, and integrating them into existing organizational procedures, can help restoration partnerships realize more benefits of adaptive management.

Pilot project purpose

As described in *Adaptively Managing Restoration Initiatives*, a guidance document developed for the Oregon Watershed Enhancement Board's Focused Investment Partnership (FIP) Program, adaptive management offers a way to address restoration uncertainties through an iterative process of learning from ongoing experience. In practice, however, few restoration partnerships systematically evaluate and adjust their work, and many have questions about the time investment and efficacy of such efforts.

In this pilot project, three partnerships funded in part through the FIP Program agreed to test adaptive management concepts described in the guidance document. The Rogue Forest Partners and Klamath Siskiyou Oak Network chose to redesign their field reviews to better serve as forums for focused learning and evaluation and to further institutionalize a culture of learning within their partnership. The John Day Basin Partnership chose to convene an evaluation workshop where partners could collectively consider field experience, monitoring, and research related to riparian plantings in the Basin and

make recommendations for improving restoration practices.

The overarching goal of this project was to provide feedback on process suggestions in the OWEB adaptive management guide and make recommendations to other partnership groups and funders on the benefits of and challenges to integrating these adaptive management concepts into ecological restoration initiatives.

Rogue Forest Partners and Klamath Siskiyou Oak Network: Adaptive Management Field Reviews

Rogue Forest Partners (RFP) works to restore dry, fire-prone forests in the 7,100-square-mile Rogue Basin in southwestern Oregon. This partnership was awarded a FIP grant in 2019 to further its ecological thinning, prescribed burning, and other forest restoration work. Several RFP partners are also involved in the Klamath Siskiyou Oak Network (KSON), which works to conserve oak habitats on private and public lands in southern Oregon and northern California and received a FIP grant in 2022.

¹ This project was funded by the Oregon Watershed Enhancement Board and supported by Focused Investment Partnership Program support team members Robert Warren, Lauren Mork, and Jennifer Arnold. Several John Day Basin Partnership, Rogue Forest Partners, and Klamath Siskiyou Oak Network members contributed their time to the pilot project.

Objectives

In early meetings, pilot project participants² chose to focus on restructuring their regularly scheduled field reviews to better serve as forums for shared learning and addressing areas of uncertainty or disagreement. In addition, they wanted to identify adaptive management “objects”—tangible tools or products to help close the feedback loop between recommended adaptations and future restoration actions. These goals were subsequently refined into the following four objectives for adaptive management field reviews:

1. Create space for partners to understand the work being implemented and reflect on outcomes.
2. Encourage and capture shared learning on particular design elements.
3. Build on past learning.
4. Integrate new learning into ongoing planning and management.

Process

From February through October 2023 pilot project participants held a series of Zoom meetings where they examined different aspects of field reviews, including variations in objectives, target participants, participant roles and responsibilities, and approaches to focusing conversations in the field and recording and utilizing participant feedback. From these discussions, the group crafted field review design guidelines which they then tested and refined on three RFP and two KSON field reviews. In addition, the group developed a “questions and uncertainties” spreadsheet for tracking progress on post-field review work and integrating other partnership activities, such as monitoring and engagement, into an adaptive management framework.

Points of learning

Recommendations for designing and implementing adaptive management field reviews, and the rationales behind the recommendations, are detailed in the document, *Field Review Design for Adaptive Management*. A few are highlighted here:

Design field reviews around desired outcomes. One of the early points of learning was that there are different types of field reviews. For outreach and educational field reviews intended to foster learning and build relationships, it may be possible to visit more sites and address more topics than on project review field trips where the objective is to solicit feedback that can be incorporated into future project design. When the objective is to delve into restoration uncertainties or address partner disagreements, the field review will likely include fewer site visits and dedicate more time to facilitated dialogue.

An agenda that includes field review objectives, discussion questions, and desired outcomes engages participants and helps focus facilitation and notetaking. The KSON agenda, *Upper Rogue Oak Initiative Implementation Review*, shows one such application of the field review design. Pilot project participants and others on the 2023 field reviews commented that the revised agendas improved field review conversations and outcomes this year.

There is important work to be done both prior to and after the field review. Pre-work includes tailoring handouts and discussion questions to priority issues and target participants. Follow-up work includes compiling a record of important ideas that surfaced in the field, then sharing new learning and recommendations with constituents who were not on the field trip. The group also learned that most participants won’t read background materials before the day of the field trip or fill out surveys after the field trip, so it is best to summarize handouts and capture feedback in the field.

Field reviews are useful for raising questions, and in some cases reaching agreement on project and treatment design, but some uncertainties can’t be resolved in one day and need a follow-up process. For example, the May KSON field trip resulted in specific recommendations for prescription design to be shared with silviculturists, while the April and July RFP field trips identified additional work needed to clarify

² RFP and KSON pilot project participants included Jaime Stephens, Klamath Bird Observatory; Kerry Metlen, The Nature Conservancy; Terry Fairbanks and Bella Witherspoon, Southern Oregon Forest Restoration Collaborative; Bill Kuhn, USDA Forest Service; and Chris Adlam, Oregon State University Extension Service.

shared burn goals. RFP participants observed, “We didn’t quite dive down into how we resolve differences that are not easy to address in the course of an afternoon field review” and “We need to do more work to unpack the things that are keeping us from doing more and better restoration.” At the same time, field reviews provided important opportunities for participants to question restoration assumptions and highlight uncertainties that the partnership may want to address through other processes.

Written “objects” like the field review design guide and questions and uncertainties spreadsheet serve as important tools for iterative evaluation and adaptation.

Pilot project participants said they see the guide as one of their partnerships’ foundational documents that they can refer to in future working agreements and use to help both new and old partners work together effectively. Shared learning and collective evaluation are new concepts for many scientists and implementers, and making them explicit via the field review design is already helping them better engage in reviews.

The questions and uncertainties spreadsheet emerged from a discussion of how to (1) reach decisions and develop products post field review and (2) integrate field reviews with other ongoing RFP efforts like prioritizing areas for treatment, monitoring, and communications. It lists issues requiring further examination and brief descriptions of why each needs to be addressed, work done to date to address it, and recommended future actions. The spreadsheet is intended to serve as a simple vehicle for both inviting partnership committees to engage in identifying questions and uncertainties and tracking progress toward resolving them.

Possible next steps

Pilot project participants considered ways to continue this work beyond continuing the adaptive management field reviews. Two options are:

1. Share the questions and uncertainties spreadsheet with RFP’s monitoring and

engagement committees and ask them to contribute to and help maintain it. Ask the RFP steering committee to take responsibility for prioritizing items needing further attention and tracking actions taken to address them.

2. Explore ways to tackle major uncertainties and partner disagreements that are likely to require a longer, more in-depth examination than can happen in the field. Working through a “zones of agreement” process could help.

The group also saw benefits to holding annual review and prioritization meetings and finding ways to track new research and bring relevant findings into restoration planning and project design. However, these are largely aspirational until additional time and resources can be allocated to adaptive management.

John Day Basin Partnership: Riparian Planting Evaluation

The John Day Basin Partnership (JDBP) coordinates ridgetop to ridgetop watershed restoration and maintenance in the nearly 8,100-square-mile John Day Basin in northeastern Oregon. JDBP was awarded a Focused Investment Program (FIP) grant in 2019 for its native fish habitat restoration initiative.

Objectives

As reflected in its strategic action plan and theory of change, this partnership recognizes elevated stream temperature as a significant salmonid population limiting factor, and riparian planting as one strategy to reduce solar input and thus stream temperatures. Riparian plantings have occurred throughout the John Day Basin using a wide range of methods and post-planting stewardship strategies. However, questions remain about the success of these plantings in terms of plant survival and growth and, ultimately, providing shade to improve native fish habitat.

JDBP participants³ identified four objectives for this pilot project:

³ JDBP pilot project participants included Hannah Latzo, South Fork John Day Watershed Council; Kristen Walz and Javan Bailey, North Fork John Day Watershed Council; Herb Winters, Gilliam Soil & Water Conservation District; and Lindsay Ciepiela, Adrienne Averett, and Ian Tattam, Oregon Department of Fish & Wildlife.

1. Evaluate and learn from previous planting projects.
2. Provide recommendations for future planting projects.
3. Collate and provide a brief synopsis of available resources, such as planting guides.
4. Identify knowledge gaps and recommend ways to fill the knowledge gaps.

Process

To address these objectives, the pilot project team asked partners to share lessons learned from experience with riparian plantings in the John Day Basin, focusing on a qualitative assessment of older (2002 and 2009) plantings in the lower basin, quantitative monitoring of riparian plantings in mine tailings in the middle basin, and a rapid assessment of FIP-funded riparian planting projects in the upper basin. They then organized an evaluation workshop where riparian planting project planners and implementers and local scientists were invited to share their lessons learned from experience, monitoring, and research.

Points of learning

Initial lessons learned, remaining uncertainties, and recommendations from the workshop have been compiled in the report, *John Day Basin Partnership Riparian Planting Workshop Summary*. Overarching points of learning include the following:

Bringing people with related, yet diverse experience together in one room led to powerful learning. Despite working on projects in different geographies with different environmental conditions, roundtable participants⁴ shared techniques that had proven effective in one area and were transferable to others. For example, lessons learned from experiments with planting in mine tailings in the Middle Fork John Day Basin are applicable to cobble and shale deposition areas in the Lower John Day Basin. Similarly, planting in trenches and adding roughness were techniques found to encourage deposition and reduce plant loss during high flow periods in the upper basin that may

also work in other reaches. Both implementers and researchers reported surprising levels of browse from not only cattle and ungulates, but rodents such as beaver and muskrats.

When the group focused on increasing stream shade as a foremost objective of riparian plantings, new perspectives emerged that included planting less desirable riparian species such as conifers to more quickly achieve the shade objective in areas where site conditions such as altered hydrology or high herbivory will limit growth and survival of willow or cottonwood plantings.

Reflecting on the riparian planting evaluation workshop, pilot project participants commented, “It’s striking to think that some of us have worked together for years and years without picking each other’s brains on this specific topic to ask, what good techniques have you found that work in these situations?” and “I was very surprised and impressed with the amount of data we got from just talking to people.”

Creating opportunities for project implementers and researchers to work together produced unexpected insights into both monitoring and priority restoration actions. Pilot project participants invested considerable time selecting metrics and a method to retrospectively evaluate FIP-funded plantings. Through that effort, which eventually included engaging a research scientist, they learned that retroactively quantifying plant survival is not feasible without baseline condition data, and there is a need to design robust monitoring protocols that link monitoring metrics to not only riparian plant survival and growth but also shade and temperature objectives.

One participant said, “Deciding what to measure and how to measure it almost has to come out of a process like the evaluation workshop,” that brings implementers and researchers together in the same room to identify knowledge gaps and develop a research or monitoring plan to address them.

⁴ Roundtable participants included project planners and implementers from the Confederated Tribes of Umatilla Indian Reservation, Confederated Tribes of Warm Springs, Gilliam Soil and Water Conservation District, Malheur National Forest, Monument Soil and Water Conservation District, Oregon Department of Fish and Wildlife, North Fork John Day Watershed Council, and South Fork John Day Watershed Council.

Engaging applied researchers may bring added benefit as the JDBP uses its results chain model to hone monitoring questions and standardize metrics so they can scale up findings to the basin level.

Research findings shared at the riparian planting workshop surfaced new information that may inform the partnership's restoration priorities and practices.⁵ Recent climate science research, for instance, has shown that temperature and precipitation changes are causing grasses, sedges, and forbs to have shorter green-up periods and longer senescence periods, which means a shorter period of forage availability in the uplands, likely pushing ungulates into riparian areas with implications for riparian planting success. Research on riparian bryophytes (mosses and liverworts) has shown that they support high macroinvertebrate diversity and distinct macroinvertebrate communities, and provide fish refugia in the form of cover and some shade. Protecting bryophytes from disturbance could be a fruitful native fish habitat restoration tactic.

One unexpected opportunity that came from inviting research scientists to the workshop was learning that Oregon State University and Pacific Northwest Research Station scientists are currently revamping their research at the nearby Starkey Experimental Forest and Range to focus more on hydrology and stage zero floodplain habitat restoration work, and are interested in connecting that research with questions implementers are raising.

Keeping the focus narrow allowed for deeper learning.

Early on in the pilot project, participants tabled related topics like prioritizing areas for riparian restoration work and examining riparian planting objectives other than improved native fish habitat. In addition, although there was considerable interest in the riparian planting evaluation workshop, organizers decided to limit participation to individuals with direct experience planning, implementing, monitoring, or researching riparian plantings to encourage candid, pertinent discussion. Reflecting on the pilot project overall, one JDBP participant observed, "One of the reasons our pilot project was successful was because the focus was really narrow."

There are disconnects between ecological response times and some funder expectations. For example, both research and field experience suggest that shade benefits from riparian plantings may not be seen for 15 to 30 years, yet project funding and monitoring timelines are much shorter. There is a need for more communication about implementation and restoration response realities, and how those may or may not align with outcome targets and monitoring plans.

Possible next steps

Because existing best practices are not always shared with project implementers, especially as practitioners move away and new people come into the basin, JDBP pilot project participants explored ways to better disseminate learning and recommendations. As one said:

We shouldn't assume people know how to do it. It might seem obvious to us that you should get your plants to the water table, but you can really drive that message home when you have an example to show people, especially new folks or partners who aren't as involved with that part of our work.

Suggestions for sharing and building upon the learning that happened in this pilot project included:

1. Continue compiling and curating riparian planting guides, relevant research, and other resources.
2. Share this process, recommendations, and resources with the broader partnership at an upcoming partnership meeting.
3. At large annual JDBP meetings that include site visits, build in time to talk about effective planting strategies and recommended planting guides.
4. Be strategic about inviting presenters to quarterly partnership meetings: look at the work the partnership is currently focused on and identify researchers who can speak to that.

When time and resources allow, JDBP members would like to hold additional evaluation workshops on this and other important topics.

⁵ See powerpoint slides from Brown et al, Hardman, and Averett et al.

Findings

In focus group meetings, the pilot project coordinator and project participants reflected on their lessons learned from this year-long effort and what they would recommend to others interested in integrating adaptive management concepts into their ecological restoration work. They also compared their experiences to the “keys to success” listed in *Adaptively Managing Restoration Initiatives* and findings in a recent article from another restoration group that received a FIP grant, *The Grande Ronde Model Watershed: Integrating Science into Restoration Implementation and Adaptive Management*. Principle takeaways were:

1. Reflective discussion is just as important as quantitative monitoring.
2. Iterative, systematic evaluation and adaptation processes are desirable, but daunting.
3. It is important to attend to relationships and different learning styles.
4. Maintaining communication with all partners and other stakeholders is important, and challenging.
5. Adaptive management requires significant commitment of staff time, and dedicated funding to support it.
6. Building adaptive management tasks into work plans and budgets, and integrating them into existing organizational procedures, can make adaptive management more feasible.

Reflective discussion is just as important as quantitative monitoring.

Pilot project participants acknowledged the importance of monitoring, but also emphasized that there is learning to be had and acted upon before effectiveness monitoring results will be available. As one participant in the RFP-KSON project observed:

Often, monitoring data aren’t available for four to eight years. So you need a two-pronged approach, where you incorporate monitoring results and new science as they become available, but do all this other evaluation of restoration design on the fly, too. Both are important. We need to be consistently doing both on-the-fly evaluation *and* monitoring, and feeding both into shared learning and decision making.

JDBP participants emphasized the importance of identifying and addressing emergent learning that won’t be captured through monitoring. As one JDBP participant explained:

It’s not just about monitoring metrics and objectives, but that space where we’re acknowledging the unattended, and the things that are out of our control. We need to look at those too when we’re asking what happened, and why or why not, and was our expectation appropriate for this place and this time? Often the answers don’t come from lines on a graph.

RFP and KSON participants also emphasized the need to examine things that are keeping them from doing more effective treatments and working at a greater pace and scale. In some cases, those are partner disconnects over strategies and project design that can be addressed through dialogue without additional data. Other impediments are policy and structural issues like an 8-inch diameter cap on tree removal, county restrictions on burn seasons, and lack of federal agency staff capacity, none of which will be informed by monitoring.

Iterative, systematic evaluation and adaptation processes are desirable, but daunting.

In its recommendations for other watershed restoration programs, the GRMW article states:

It is not enough to practice adaptive management ad hoc; a formalized process is needed to ensure that new research and findings are used to refine goal setting, prioritization, and ultimately, on the ground projects (Roni et al. 2023:241).

The OWEB adaptive management guide similarly emphasizes the importance of developing “a structure and timeline for regularly discussing lessons learned from implementation and monitoring, and for revising planned activities as appropriate” (Warren et al. 2019:7).

According to Jesse Steele, GRMW Executive Director, that group holds monthly implementation team meetings where multiple implementation and research partners discuss lessons learned from practice, the latest research findings, and upcoming projects. These discussions feed into an annual “State of the Science” meeting where partners review new

monitoring and scientific findings, which is followed by an adaptive management meeting held to determine whether the new information suggests a need for adjusting restoration projects or practices (Roni et al 2023:237).

Participants in the pilot project liked the idea of regularly gathering to reflect on questions like, How much are we actually getting done? How effective is it? Do we need to make changes? If so, how will we go about making those changes? What are we missing? What else should we be monitoring? As one said, “If you don’t have the time to talk about it and figure it out, you’ll just keep doing what you were doing.”

However, none of the three pilot project partnerships currently has a systematic process for evaluating projects and incorporating findings into planning and project design. Doing so, and bringing new research findings into evaluation and adaptation, is a daunting task for implementation-oriented partnerships.

Reflecting on GRMW’s annual State of the Science meeting and adaptive management process, a JDBP participant observed:

A formal process that uses new research and monitoring findings to refine objectives, project priorities, and on-the-ground design is in the wheelhouse of Intentionally Managed Watersheds, but you can’t do that everywhere.

An RFP participant commented that something like GRMW’s State of the Science meeting would take weeks of preparation. Another said:

We haven’t really discussed how to interface with new research. Nobody’s really scanning [and synthesizing it] and feeding that into the partnership... The Northwest Fire Science Consortium is designed to make it easier for managers to access the latest science, but we don’t really have a robust connection ... with that group.

Other RFP participants supported the idea of building closer relationships with the Consortium and similar groups.

It is important to attend to relationships and different learning styles.

Reflecting on the recommendation that groups use a formalized, structured adaptive management process, one RFP pilot participant said, “structure and consistency gave us the opportunity to go more in depth and talk not just about what we want but why we want it.” Another added:

A formalized process is important, but I also think that we need to tend to the relationships within the partnership. Just having a structure in place doesn’t guarantee that you have a quality, fulfilling, transparent discussion.

These observations echo expert opinion from the authors of *The MSP Guide: How to Design and Facilitate Multi-Stakeholder Partnerships*, who write that it is important to avoid jumping to decisions and actions without completing a learning process that includes reviewing concrete experience, then reflecting on what happened, then analyzing and developing theories about why things happened the way they did, and finally, as needed, testing the working theories through active experimentation. At the same time, they warn against over-formalizing and over-structuring the process. What is important, they write, is to:

Create joint learning experiences for stakeholders in which they feel safe, understood, inspired, and motivated; while at the same time raising critical questions, challenging old assumptions, and using new ideas and information for innovation” (Bouwer et al., 2019:111).

A JDBP participant observed that the ownership implementers feel about their projects can make them defensive to evaluation and unwilling to give honest feedback on each other’s work. At the riparian planting evaluation workshop, the group intentionally worked to create a safe space for participants, as RFP and KSON organizers do on their field reviews. An important ground rule for the GRMW State of the Science meetings is that research and monitoring partners presenting new findings must also translate those findings into implementation-specific management recommendations (Steele 2023).

An RFP participant noted there’s also tension between people who want more focus on learning

and those who want to get things implemented on the ground. Because of the partnership's orientation toward implementation, reflective processes like this can be seen as "fluff" and get pushback from some partners and funders. In those cases, it can be helpful to remind detractors of the cumulative benefits of learning from implementation, experimentation, information synthesis, and reflection. By bringing together people with different perspectives, one RFP participant said, "we all get to recalibrate our thinking and question the frameworks and assumptions we bring to this work."

Maintaining communication is important, and challenging.

One "key to success" described in the OWEB adaptive management guide is ongoing communication among partners and with important non-partners such as funders and restoration researcher scientists:

Ideally, all partners are engaged in ... planning, evaluating, and adaptive restoration activities. Realistically, however, it may not be possible to have all... stakeholders at every important meeting. It may be necessary to solicit their input prior to meetings and keep everyone in the partnership updated [on] evaluation results and any adjustments made ... through both formal (e.g., email or newsletter) and informal (e.g. individual visits and phone calls) channels (Warren et al 2019:18).

Pilot project participants described challenges with disseminating information to and soliciting feedback from all partnership members and other constituents, and in particular reaching people through written documents posted on web sites or listservs. As one said, "if there's someone I really want to get the message to, I talk to them." Others agreed that individual and small group face-to-face meetings are probably the best way to share new learning, but are time consuming.

JDBP participants noted the need to revisit recommended restoration best practices on a fairly regular basis to make sure all partners, particularly new ones, are familiar with them. RFP participants plan to regularly review and revise their "questions and uncertainties" spreadsheets during committee meetings.

Pilot project participants also discussed mismatches in research, planning, and implementation timelines that can delay application of new knowledge. One JDBP participant observed:

In the Middle Fork Intensively Managed Watershed, it took a while, but we learned that temperature is a limiting factor. Many years down the road, that learning is now driving restoration. There's a delay, because so many projects are already lined up.

Differing understandings of planning and implementation realities, and differing expectations regarding restoration outcomes, make communication with funders, policymakers, and technical advisors as well as ongoing communication among partners important to adaptive management. Maintaining communication is one role of an adaptive management champion, as described below.

Adaptive management requires significant commitment of staff time, and significant funding to support it.

Comments from two JDBP participants further address the staffing and funding constraints to integrating adaptive management concepts into their restoration projects and programs:

Our projects and funding aren't set up for us to go back and look at past work, and we don't have time to do that. It's not in our scope of work and we don't have funding for it. If you want a formalized adaptive management process you have to tie it to a funded scope of work – you can't just ask for it without doing that.

We're all being asked to do more with less and we aren't seeing a lot of funding for capacity, including research and monitoring. If processes like these were funded, it would help us be more strategic. But we need money to build in the time and bring together the bodies, or it's not going to get done.

RFP participants also emphasized the time required fully examine uncertainties, different viewpoints, and other impediments to progress and said, "The problem is most funders aren't able or aren't willing to support that time."

One important component of capacity, and another “key to success” listed in the OWEB adaptive management guide, is an adaptive management champion, “an individual with primary responsibility for leading and supporting all aspects of the adaptive management process” (Warren et al. 2019:7). Similarly, one of the findings in the GRMW article is, “having a person, such as the monitoring coordinator or director, champion and see this process through on an annual basis is critical for its success” (Roni et al. 2023:342). This individual should be a skilled facilitator-communicator who works well with diverse personalities and groups with different goals and mandates (Steele 2023).

The champion’s responsibilities include tracking monitoring efforts, coordinating evaluation meetings and other events, helping to synthesize and disseminate information, engaging all partners in evaluation and adjustment discussions, maintaining written records of recommended adaptations, and regularly reminding planners and implementers to incorporate past learning and partnership decisions into project design.

While several people may participate in these activities, participants in both pilots agreed that having one person tasked with shepherding the partnership through all steps in the adaptive management cycle is important. As one RFP participant said, “If you want to do anything very well at all you need a single point of contact, someone whose job it is” and, “Our monitoring would be doing better if the monitoring lead had more time to focus on it.” However, none of the three pilot projects partnerships has a full-time monitoring coordinator, nor anyone with time dedicated to adaptive management.

[Building adaptive management tasks into work plans and budgets, and integrating them into existing organizational procedures, can make adaptive management more feasible.](#)

All three all three partnerships saw opportunities for incorporating some adaptive management evaluation processes into existing organizational procedures. RFP and KSON intentionally integrated adaptive management concepts into regularly scheduled field reviews and committee meetings. In their discussion

of next steps, JDBP too looked at using existing partnership meetings, gatherings, and site visits.

One JDBP participant floated the idea of an ongoing adaptive management effort, with more frequent remote meetings to make it easy for people to participate, and possibly yearly in-person meetings, which could be coupled with existing annual partnership meetings to make travel easier. Another identified existing partnership field trips as an opportunity to reinforce best practices.

At the same time, participants saw a need for additional efforts to close the adaptive management feedback loop. RFP and KSON participants noted the need for follow-up processes to examine and address questions and uncertainties that cannot be resolved in a field review. JDBP participants commented, “There were more conversations to be had than we had time for” at the riparian planting evaluation workshop and, “You need enough time to do more than identify data gaps – you need to work through a process to close those gaps.”

Restoration partnerships could accomplish more adaptive management tasks by explicitly building them into annual work plans, project scopes of work, and budgets. As discussed by participants in this pilot project, such activities could include annual project prioritization meetings; regular meetings between project implementers and applied researchers; and periodic evaluation workshops to review new information and lessons learned from practice, recommend adaptive changes, discuss what it would take to make those changes, and identify issues that warrant further monitoring or other information gathering. Funders could support adaptive management by explicitly funding partner participation in such activities. Ideally, partnerships would designate and funders support an adaptive management champion to lead and sustain adaptive management.

Conclusion

According to adaptive management literature, including the OWEB guidance document, partnerships that systematically evaluate their work and make improvements based on what they’ve learned will realize a number of benefits, including:

(1) learning from and avoiding repeating past mistakes, (2) increased certainty about the effectiveness of specific restoration actions, (3) increased confidence in and support for restoration objectives and practices, (4) improved ability to respond to new information and evolving conditions, and (5) more effectively and efficiently achieving restoration goals.

This pilot project demonstrated that by bringing diverse participants together to collectively address specific evaluation questions, restoration partnerships can see progress toward at least the first four of these five sets of benefits. Further, the pilot project showed that restoration partnerships can integrate some review processes into their existing organizational procedures.

However, addressing core restoration uncertainties and other factors impeding progress toward restoration goals will require a deeper commitment of time and resources. The communication and coordination requirements of adaptive management are significant, and designing appropriate monitoring and tracking relevant research both require substantial time and expertise. Restoration partnerships can more fully realize the potential benefits of adaptive management if they, and their funders, allocate staff time and funds to focused group learning and applying new knowledge to planning and implementation.

References

- Averett, J., B. Endress, M. Rowland, D. Bohnert, and M. Wisdom. 2023. *Riparian Shrub Responses to Cattle and Wild Ungulate Herbivory, Meadow Creek, Starkey Experimental Forest & Range*. Powerpoint presentation available from John Day Basin Partnership.
- Averett, J., L. Naylor, D. Wooster, B. McCune, A. Hardman, M. Wisdom, and B. Endress. 2023. *Riparian Bryophytes (Mosses & Liverworts): A Functionally Important Riparian Vegetation Group to Consider for Restoration*. Powerpoint presentation available from John Day Basin Partnership.
- Brouwer, H., J. Woodhill, M. Hemmati, K. Verhoosel, and S. van Vugt. 2019. *The MSP Guide: How to Design and Facilitate Multi-Stakeholder Partnerships*. 3rd Edition. Practical Action Publishing Ltd., UK and Centre for Development Innovation, Wageningen University and Research, The Netherlands. <https://mspguide.org/the-msp-guide/>.
- Brown, C. L., P.K. Coe, D.A. Clark, M.J. Wisdom, M.M. Rowland, J.P. Averett, and B.K. Johnson. *Climate Change Effects on Understory Plant Phenology: Implications for Large Herbivore Nutrition*. Powerpoint presentation available from John Day Basin Partnership.
- Hardman, A. 2023. *Planning for Natives in Restoration Projects*. Powerpoint presentation available from John Day Basin Partnership.
- John Day Basin Partnership. 2023. *John Day Basin Partnership Riparian Planting Workshop Summary*. Draft document available from John Day Basin Partnership.
- Klamath Siskiyou Oak Network. 2023. *Upper Rogue Oak Initiative Implementation Review: Pre-Restoration Prescription Review for OWEB FIP Biennia 1 acres*. Field review agenda available from Klamath Siskiyou Oak Network.
- Rogue Forest Partners and Klamath Siskiyou Oak Network. 2023. *Field Review Design for Adaptive Management*. Draft document available from Rogue Forest Partners.
- Roni, P., J. Steele, K. Morinaga, A. Towne, I. Wilson, and M. Camp. 2023. The Grande Ronde Model Watershed: Integrating Science into Restoration Implementation and Adaptive Management. *Environmental Management* 72:221-245. <https://doi.org/10.1007/s00267-023-01832-x>
- Steele, J. 2023. Personal communication. December 21, 2023.
- Warren, R., A. Moote, J. Arnold, and L. Mork. 2019. *Adaptively Managing Restoration Initiatives*. A guide prepared for the Oregon Watershed Enhancement Board's Focused Investment Partnership Program. <https://www.oregon.gov/oweb/Documents/FIP-2019-Adaptively-Managing-Restoration-Initiatives.pdf>.