



# Collaborative Restoration Workshop

## *Working Toward Resilient Landscapes and Communities*

# SUMMARY

Proudly hosted by the National Forest Foundation in Denver, Colorado  
April 26-27, 2016



As is appropriate for an event focused on collaboration, a great many people worked together to shape the *Collaborative Restoration Workshop*.

The National Forest Foundation is deeply grateful to the many people and organizations who worked with us to help make the *Collaborative Restoration Workshop* a successful launching point to do more impactful work for the benefit of our landscapes and communities.

We wish to recognize the U.S. Forest Service, our fellow sponsors, the advisory and track committee members, the many speakers and moderators, and all of the participants for your contributions.

Thank you!



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## The Collaborative Restoration Workshop

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When summer fieldwork, monitoring, and project implementation on National Forest System (NFS) lands commence, partners and agency staff celebrate the final stages of restoration work. The path to on-the-ground accomplishments may have been a contentious, collaborative, or innovative one that stretched the boundaries of restoration. Yet as we witness years of planning and collaboration become reality on the ground and in waterways, the efforts are paying off.

Similarly, the National Forest Foundation (NFF) celebrates the path to the first national *Collaborative Restoration Workshop*. Collaboration defined the yearlong process to organize the *Workshop*. Over the last year, the NFF organized the *Workshop* in partnership with staff from the U.S. Forest Service. Nineteen advisory committee members from non-governmental organizations and Forest Service departments – people on the forefront of collaborative restoration – identified overarching objectives from a national vantage point. Nearly 60 people from diverse affiliations pooled knowledge to frame stimulating discussions around the themes of science and action, planning, implementation, monitoring, collaboration and engagement, and the future of collaborative stewardship. The committees received numerous proposals for concurrent session topics and speakers. Ultimately, 105 individuals presented on a panel or moderated discussions. Twenty-six shared research and project posters.

The NFF designed this document to capture key themes, lessons, and resources that emerged during the two-day *Workshop*. We did not attempt to capture every detail. Our objective was to summarize, in an accessible, immediately useful format, the tremendous learning that flowed throughout the *Workshop*.

### Themes and Highlights

Participants openly shared ideas about the best and worst of collaborative restoration during the *Collaborative Restoration Workshop*. In their respective keynote addresses, NFF President Bill Possiel, Forest Service Chief Tom Tidwell, and USDA Under Secretary for Natural Resources and Environment Robert Bonnie challenged participants to learn, network, and improve their capacity to advance collaborative restoration. During smaller breakout sessions, participants dove into deep and relevant discussions about collaborative restoration strategies. We were thrilled to see everyone who attended bring the *Workshop* themes to life through question-and-answer time, hallway exchanges, and conversations over coffee.

Throughout the *Workshop*, participants identified barriers and captured restoration successes, lessons, best practices, and tools. Several overarching themes emerged:

Collaboration is the new norm. Through numerous examples, participants illustrated the successes and opportunities stemming from collaboration on NFS lands. The *Workshop* provided a snapshot of collaboration occurring on and around NFS lands, including more insight about the myriad of range, forest, watershed, and fire collaboratives operating across the country. During the *Workshop* participants strategized about resource-specific *Workshops*, data-sharing systems, and ways to connect collaborative efforts.

Who is collaborating? How can we diversify? As collaborative models replicate across the country, it's important to take a hard look at who is at the collaborative table. Participants pointed out that partners and agencies must find creative ways to engage youth, reach out to businesses, expand tribal partnerships, involve government representatives across jurisdictions, and sustain the participation of wood products industry representatives.



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Capacity challenges require creativity. Participants called for *more* collaboration. Various dialogues demonstrated collaboration is a proven tool to address management challenges. At the same time, Forest Service staffing levels in non-fire program areas have shifted dramatically since the 1990s. The Forest Service sometimes struggles to meet expectations for collaborative participation. On the other side, nonprofit partners face similar capacity issues as the Forest Service. Collaborative groups need additional capacity to convene meetings, facilitate discussions, and engage in project planning, implementation, and monitoring. Collaboration needs systematic support from agencies, philanthropic partners, and the business community to continue pushing the envelope.

Restoration is not the song everyone sings. Participants challenged the concept of restoration as the guidepost for forest management. Speakers discussed other key guideposts such as resiliency, sustainable recreation, and watershed recovery, leading participants to think deeply about terminology and the implications.

Implementation requires a new skill set. As the practice of collaborative restoration advances, more projects are moving from planning and analysis into the implementation phase. At the *Workshop* we heard that partners and agency staff must bolster our collective knowledge about implementation. We must design innovative partnerships to accomplish implementation more efficiently. We must also encourage collaboration during implementation, not just in planning.

Data and information is not enough to drive collaborative restoration. Personal relationships are critical components of scientific partnerships. Collaborative restoration efforts have realized success by employing joint fact-finding, multiparty monitoring, agency-to-agency communication, and other methods to share information. *Workshop* participants frequently concluded sharing information and data are building-blocks for trust.

Radical transparency is a new goal. Through various examples – forest plan revision processes, mid-term prioritization efforts, open interdisciplinary team meetings, and more – we learned that Forest Service units who embrace transparency are moving closer to the ideal of collaborative problem solving. Examples show that transparency is breaking barriers and supporting efficiencies. When Forest Service units embrace transparency, collaborative groups get to know Forest Service staff as people. Citizens begin to understand the processes (and challenges) the Forest Service is working through.

Collaboration is a strategy, not a silver bullet. Collaboration is working. From the Blue Mountains of Oregon to the Blue Ridge of North Carolina, the movement is full of successful examples. At the same time, collaboration is not the right tool for every situation. Through discussions about ripeness, definitions of collaboration in the 2014 Farm Bill and 2012 Planning Rule, and conversations about cross-boundary partnerships, participants challenged the limitations and opportunities associated with formal collaborative groups, vigorous public engagement processes, and everything in between.

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The 2016 *Collaborative Restoration Workshop* was a forum for sharing innovative approaches to collaborative restoration and lessons about planning, implementing, and monitoring restoration efforts on and around NFS lands. Though we covered an enormous amount of ground during the *Workshop*, many of the discussions bore new ideas and challenges. Please revisit the discussions in this summary. Now is the time to work together to harness the energy from the *Workshop* to improve the practice and impact of collaborative restoration across the country. We hope this document provides tools and resources to help you jumpstart your next steps.



## Future of Collaborative Stewardship | Plenary Session: Welcome to the Workshop & What We're Trying to Achieve

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### Speakers

- **Mary Mitsos**, Executive Vice President, National Forest Foundation
- **Daniel Jirón**, Regional Forester, Region 2, U.S. Forest Service
- **Tom Tidwell**, Chief, U.S. Forest Service
- **William J. Possiel**, President, National Forest Foundation

### Overview

Mary Mitsos and Daniel Jirón welcomed attendees to the first-ever Collaborative Restoration Workshop on behalf of the National Forest Foundation and Rocky Mountain Region of the U.S. Forest Service, respectively. U.S. Forest Service Chief Tom Tidwell and National Forest Foundation President William J. Possiel provided keynote remarks.

### Summary of Remarks - Tom Tidwell, Chief, U.S. Forest Service

- Ecological restoration is key to restoring the systems that our Forests, Grasslands, and communities need. Climate change drives the conditions of our lands, including drought and wildfire. We must remove biomass and steward resilient watersheds. We must also find ways to work across mixed ownerships.
- We've seen steady progress in acres treated, largely due to partnerships. Partners are key. None of us are in this alone.
- Greatest success comes when people learn together through partnerships and collaboration, and support shared restoration goals.
- Collaborative Forest Landscape Restoration (CFLR) program has been a tremendous success, with many acres treated, wildfire risk reduced, new jobs, economic returns, and ecological benefits. This program has been successful because it requires a collaborative effort, allows us to look at large landscapes, and represents a long-term commitment. CFLR is a recipe for success, and something we need to continue and build upon.
- Congress is recognizing the successes stemming from collaboration by putting collaboration into legislation, such as the CFLR program.
- Collaboration is at the center of forest plan revision efforts under the 2012 Planning Rule.
- Collaboration isn't easy. Interests don't always align. Successful collaboration depends on hard work, but represents a solution that provides meaningful engagement in public lands management. Collaboration creates a greater sense of ownership and responsibility when it comes to management outcomes. Collaboration produces better decisions.
- Pleased to have this conversation about how we can expand what's working and fix what's not.
- Challenges participants to listen closely, learn as much as possible, and use that information to lead at home.

### Summary of Remarks – NFF President Bill Possiel

- The fact that we are gathered together reflects a fundamental change in our country. We've seen this change in the Forest Service; the agency has adapted. The Forest Service now works closely with communities across the country, which has led to phenomenal opportunities to do great things on the land.
- We face threats from climate change, demographic shifts, and other challenges – all of which bring us back to collaboration around restoration.
- We have an obligation to fight against the discourse about getting rid of public lands.



- By bringing communities together, collaboration can help by building bridges.
- 100 years from now, public lands will be even more valuable in terms of ecological and economic significance for the nation. The people in this room represent the people from across the country who can come together to build dialogue about how we respect the value of these phenomenal assets.
- The National Forest Foundation's values are to unite, restore, engage, sustain, and add value.
- A big challenge is to connect urban communities to national forests. If communities understand and have pride in forests, we're more likely to achieve our restoration goals.
- Struck by recent remarks from international conservation leader, who stated, "Forestry is not rocket science – it's so much more complex." Today we can send a rocket into space, but we don't yet understand so much about the subtleties of species, landscapes, and the science of our home. We need a healthy planet, healthy communities, and healthy families.
- Personal experiences often create a sense of value within people for nature and public lands. We have to think about how to sustain that enthusiasm and respect for nature.
- Collaboration is by definition the act of creating something with others. We cannot address the threats facing us alone, as one entity or one group of people. This must be a group effort.
- Climate change is the defining issue of our time. As we work to ameliorate the effects of climate change, we know that forests play a critical role. So, all of the work is not only important to our local communities, but also to our global communities.





## Future of Collaborative Stewardship | Plenary Session: Keynote address from Robert Bonnie, Under Secretary for Natural Resources and Environment, U.S. Department of Agriculture

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### Speakers

- **Robert Bonnie**, Under Secretary for Natural Resources and Environment, U.S. Department of Agriculture

### Overview

Robert Bonnie discussed where we've been and where we're going with collaborative restoration and ideas about how we can work across boundaries, build diverse communities of practice, and demonstrate the value of the work we're doing.

### Summary of Remarks

- We're here because our forests face significant challenges: climate change, insects and disease, loss of working lands, development on the wildland urban interface, invasive species, and others. All of these are big challenges that will require big actions.
- Gifford Pinchot created the U.S. Forest Service in the face of threats that affected the way Americans thought about their environment. Pinchot talked about involving people in the management of national forests. Of course, wildfire, population growth, the rise of production forestry and environmentalism, and many other changes have taken place since Pinchot's time.
- USDA sees a growing "middle" with greater alignment around forest issues. USDA has worked to encourage this alignment.
- Restoration is a word we all use, albeit a bit of an imperfect word. We're restoring forests to build resilience. We're advancing restoration in a way that is forward-looking and allows forests to be resilient to climate change and other threats.
- Secretary Vilsack recognizes that restoration should benefit forests, people, and water resources across all lands. And he recognizes that this requires collaboration.
- In the last several years we've built a better toolbox to restore forests at the landscape scale. For example, we have the 2012 Planning Rule, which at its core, has collaboration. The Rule will not succeed without the active involvement of stakeholders. We've made great investments and pushed the envelope through the Collaborative Forest Landscape Restoration Program (CFLRP), Watershed Condition Framework, and landscape-scale National Environmental Policy Act (NEPA) activities in places like Arizona with the Four Forests Restoration Initiative. Other tools include tools from the 2014 Farm Bill (such as Good Neighbor Authority), stewardship authorities, Joint Chiefs' Landscape Restoration Partnership, and more.
- USDA has tried to do more work to promote wood products and develop local markets, develop new and strengthened tribal partnerships, and increase conservation on private lands.
- One of the greatest challenges to substantially increasing the pace and scale of work we do on national forests is the ever growing size of the Forest Service budget dedicated to fire. Fire suppression is more complex – and expensive – and ever before. In 1995, the agency devoted 16% of its budget to fire. Last year the agency devoted around 60% of the budget to fire. There are 39% fewer employees on the non-fire side of the agency than in the 1990s. The fire costs are affecting everything that the agency does on the non-fire side of management.
- Capacity and partnerships will be key to solving many of our challenges. Luckily, we have the creativity and the people, represented by the vanguard who attended the workshop, to work on these challenges. Collaboration is not easy, and there are critics on all sides. Yet, we need to continue collaborating and increasing partnerships.



## Future of Collaborative Stewardship | Collaborative Restoration: Local Implementation of the National Vision

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### Speakers

- **Jerry Ingersoll**, Forest Supervisor, Siuslaw National Forest, U.S. Forest Service
- **Cal Joyner**, Regional Forester, Region 3, U.S. Forest Service
- **Mark Stern**, Oregon Forest Restoration Program Director, The Nature Conservancy
- **Maureen Bookwalter**, U.S. Forest Service-Montana Department of Natural Resources & Conservation Liaison
- **Steve Andringa**, Forestry Program Manager, Yakama Nation

### Overview

Forest Service and partner leaders shared their vision for collaborative restoration and resilience. Speakers also identified what's working well in implementing the national vision and gaps that currently exist. Dialogue focused on key lessons for how we can work together to deliver the outcome of resilient landscapes, as well as the following questions: Where are we trying to go? What is the role of national direction vs. the need for local flexibility in getting us there?

### Summary

Jerry Ingersoll from the Siuslaw National Forest focused on recreation, restoration, and partnerships. The Siuslaw is a high fire frequency forest and a fire resilient forest – they're "singing a new song" that does not necessarily fit the mold of landscape restoration. The Forest Service enhances structural and species diversity *at the appropriate scale* by retaining receipts and working with stewardship groups and watershed councils. The Siuslaw may not have the same timber output as other forests, but they're thinking at multiple scales about conservation results. Not all restoration is active, and not every output is equal.

Maureen Bookwalter introduced the State of Montana's Forests in Focus program. Montana sees National Forest management as a "we problem" instead of a "they problem." The State of Montana partners with the Forest Service to invest on federal lands. Funds go to on-the-ground restoration and collaborative groups. There are challenges associated with a state and federal agency working together (and capacity issues), but relationships are growing. Those involved believe in the art of possibility.

Cal Joyner asked, "How does a multi-state region balance increasing pace and scale? Where do you invest? For what do we hold ourselves accountable?" Cal explained that Region 3 is responsible for providing water to large desert cities, and necessarily focuses on the balance between climate change resilience and natural resource dependency. In Region 3, many partners including the National Forest Foundation, are bringing funds to the table. The Region's challenge is to ensure there are enough projects ready to go. One way they've been able to address this challenge is by having each forest create a restoration plan that identifies the highest priority work.

Steve Andringa explained that the people of the Yakima Nation were among America's first stewards, and the Tribe has a history of natural resources management. For years, the Yakama Nation has addressed restoration and resiliency with regulatory and technical tools, and looked for innovations within the legal frameworks of the Endangered Species Act (ESA), National Environmental Policy Act (NEPA), and others. Many federal lands are adjacent to tribal lands. The federal and tribal governments can create sustainable systems by focusing on social, economic, ecological, spiritual, and cultural balance.



## Lessons

- The Forest Service is experiencing a paradigm shift in terms of the national vision for restoration. Not everyone is singing the same song. Quality of work is just important as quantity. Communities may care about economic contributions and board feet or acres of fuel reduction and community protection.
- Though we're focusing on increasing the pace and scale of restoration, we're still trying to figure out how to quantify the ecological changes across a landscape. We should aim to have a broader conversation that includes water, species diversity, economic markets, and sustainability.
- Forest Service leadership and Congress have provided the agency with many new tools that will help increase the pace and scale of on-the-ground work.
- It's important that local communities know what a healthy forest looks like, and understand why we take certain management actions. Forests can share successes through field trips, community dialogues, showing people "before and after" pictures, and communicating the need for restoration and collaboration. We must improve how we tell our stories.
- Each speaker discussed the challenges and opportunities associated with cross boundary management. The lines among management jurisdictions are blurring as programs like Montana's Forests in Focus initiative gain traction.
- Many are wondering how to get a restoration economic going, feed it, and continue it over time. In the face of catastrophic fire and adversity, how do you maintain and expand a restoration economy? The Forest Service doesn't have a lot of practice at this yet, but the field of knowledge and experience is growing.
- Plans are great, but flexibility is necessary to have backup options when unexpected events like fires affect those plans. It's critical that we learn how to adapt.



## Future of Collaborative Stewardship | Plenary Session: Where Have We Come from and What Does It Mean for the Future?

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### Speakers

- **Tony Cheng**, Director, Colorado Forest Restoration Institute, Professor, Colorado State University
- **Laura McCarthy**, Senior Policy Advisor for Fire and Forest Restoration, NM, The Nature Conservancy
- **Mary Mitsos**, Executive Vice President, National Forest Foundation
- **Russ Vaagen**, Vice President, Vaagen Brothers Lumber

### Overview

In this plenary session, agency partners from a university, conservation organization, non-profit partner, and wood products industry discussed the following questions: What have we learned from 25 years of collaborative engagement in public lands? How do models for collaboration vary based on the regional context in which they originate?

### Summary

Tony Cheng focused on the human components of collaborative engagement in public lands - people and their lands and resources. From the start of collaboration in the 1990s, we've seen three themes: (1) place-based pragmatism, born out of noteworthy historical events like the timber wars in the Pacific Northwest, (2) the Clinton administration's Forest Summit, and (3) the formation of the Quincy Library Group and the Communities Committee, which gave birth to the Community Wildfire Protection Plans and Collaborative Forest Landscape Restoration Program. All of this was part of government transition in the 1990s; the idea of "reinventing government" and devolution of responsibility were strong themes.

Mary Mitsos spoke of shifts in agency culture, collaborative groups, and the scope and scale of collaborative projects. In 1995, Mary facilitated a network of Forest Supervisors from across the country that wanted to learn about collaboration. At that time many felt they could not talk about collaboration within the agency. Obviously, this is no longer the case. There has been a major shift in the way the agency thinks about collaboration. In the early years of collaboration citizen groups came together at a small scale to talk about 50-acre projects. The scale has since jumped dramatically, and across boundaries. Nationally and in local communities civil discourse has improved dramatically, increasing understanding of individual values. The Forest Service used to be considered the enemy, yet as the Collaborative Restoration Workshop demonstrates, the agency is now a strong partner. The willingness of line officers to collaborate and be transparent with partners has improved drastically since the 1990s, and continues to grow. Unfortunately, Forest Service capacity to participate in collaborative efforts is still a challenge; collaborative groups are growing, yet the agency's budget continues to shrink, and many Forest Service jobs remain vacant.

Laura McCarthy took the room back in time to the National Fire Plan meeting in 2002. She remembered how there were about twenty people from the Communities Committee at the meeting, and most were not interested in engaging with them. However, the meeting signified the beginnings of cross-boundary management for fire, which has evolved into the cohesive strategy. The participants at this Collaborative Restoration Workshop essentially represent a collaborative of collaboratives, and the next big question is, "What do we do with today?" Laura hoped that the workshop participants could discuss one or two specific actions to help the collaborative movement achieve mutual goals. Laura pointed out several needs going forward, including the importance of diversifying collaboratives (what



other agencies, water and agricultural communities, and business partners need to be at the table?), leveraging resources (accelerate the pace and scale of restoration by pooling our resources), and breaking down administrative barriers. This is one of the most exciting times in restoration and land/water management.

Russ Vaagen noted that we are now beyond the timber wars. The wars of the past don't exist because of great partnerships and collaborations. In Russ's mind, the next challenge is engaging business to help hold collaborative restoration efforts together. The existing toolbox is useful. For example, retained receipts can get more work done on the ground. However, if partners and the Forest Service do not increase the pace and scale of treatment, then the pace and scale of fire, insects, and disease *will* continue to increase. Moreover, if we don't carry out mechanical treatments, prescribed fire becomes less of an option. Russ asked if anyone feels like we are doing an adequate job managing our National Forests. No hands went up in the audience. "So, where is the urgency?" he asked. We need to start a new century of management, turn the talk into implementation, and use our collective resources to plot a new future.

## Lessons

- The Forest Service is a stronger collaborative partner than ever before. Since the 1990s, the willingness of line officers to collaborate and be transparent with partners has improved drastically. Forest Service support for – and involvement in – collaboration continues to grow. However, the capacity of the agency to participate in collaborative groups is still a challenge.
- Need to build collaboration capacity. Partner organization can help the agency increase capacity to collaborate. For example, in 2002 the National Forest Foundation started the Community Capacity and Land Stewardship grant program to build initial capacity in new collaborative groups, such as the Northeast Washington Forestry Coalition (which later became a CFLRP recipient). Small startup grants of \$10,000-\$15,000 did amazing things to kick-start collaboration around the country. The burden to managing public lands, however, needs more diverse support. Federal, state, and local partners need to put skin in the game in a more systematic manner. We also need philanthropic support for collaborative efforts. We need to redesign and rethink solutions to pool resources.
- Youth engagement is critical. The only way to sustain collaborative engagement and support for the National Forest System is to engage youth. The understanding that youth have about natural science is impressive. But understanding and caring does not necessarily translate into management and implementation. We need to engage youth in actual stewardship. Many agency partners are engaging youth through conservation corps, but these programs only reaches parts of the country.
- Implementation is an emerging area of needed capacity and expertise. The collaboration community is great at planning, but we need more experts in implementation. There are a growing number of collaboratives that are getting better, but as a collaborative community, we need to strengthen our expertise in project implementation.



## Future of Collaborative Stewardship | Understanding and Addressing Critiques of Collaboration

### Key Topics: Collaborative Process

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#### Speakers

- **Melissa Freeman**, Harvard Negotiation & Mediation Clinical Program
- **Heather Kulp**, Harvard Negotiation & Mediation Clinical Program

#### Overview

In 2016, the National Forest Foundation was a client of the Harvard Negotiation & Mediation Clinical Program (HNMCP). As part of the NFF project, a HNMCP student team studied recent critiques of collaboration across the United States through interviews and other analysis. During the workshop, the HNMCP team shared their findings, touching on themes related to the following questions: What are stakeholders' concerns with the current use of collaboration in the stewardship of national forests? How can the NFF address those concerns, including when NFF is directly involved and when it is not directly involved with a collaborative group? What are strategies and best practices that collaborative groups can use to make collaboration more effective and bring more parties to the table?

#### Summary

The HNMCP team conducted 42 interviews with many different forest stakeholders, including those who do and do not participate in collaborative groups. The team also studied group governance documents, statutes, academic articles, media articles, and blog posts. The team identified common themes and developed recommendations to address each. Findings focused on group procedures, group learning, agency communication, consensus, and stakeholder input. The following findings were presented to workshop participants:

- There is an inconsistent employment of procedural best practices in and across collaborative groups.
- Some interviewees found that meetings are often inefficient and unproductive.
- Some interviewees perceived facilitators as biased or ineffective.
- Disputes over substantive issues are a significant source of tension.
- Many groups do not have a fact-finding process, which often perpetuates disagreements around scientific information.
- Some stakeholders believe scientific viewpoints are only presented to promote certain interests over others.
- The U.S. Forest Service does not always effectively engage with collaborative groups.
- The Forest Service sometimes does not strike the right balance of involvement to empower group progress (and there are concerns both when the agency is over-involved and under-involved).
- The Forest Service sometimes does not effectively communicate helpful information to the group.
- Groups often disagree over decision making procedures.
- Stakeholders disagree over whether requiring consensus is positive or negative, and if a group uses consensus, they don't have clear procedures about when consensus should be reached.
- Some groups will change decision rules mid-way to exclude certain stakeholders.
- The collaborative process can result in certain voices not being heard.
- Some collaborative groups fail to represent a broad range of interests.
- Stakeholders disagree between the local interests and national interests.





- There is a concern that collaboration circumvents or weakens the National Environmental Policy Act (NEPA) process, or may do so in the future.

## **Lessons**

Following the presentation, workshop participants engaged in small-table discussions to answer the following questions:

- What ideas do you have for collaborative groups and their facilitators to better balance group ownership with effective management of group process?
- What ideas do you have for collaborative groups and their facilitators to better balance inclusiveness of the group with efficiency of group work?

A sample of the responses are below, categorized by theme.

### Structure

- Use third party facilitator with no bias
- Rotate facilitator every month when can't afford a paid one
- Build capacity of facilitators or people who can help gently lead the group
- Make training and/or funding for group facilitators available
- Use a respected local facilitator rather than a consultant from an urban center
- Use a steering committee made up of group-selected members
- Working groups should make recommendations to larger group to decide
- Use social network tools to increase participation and decrease costs
- Revisit and rewrite goals/objectives as needed
- Clearly identify sideboards and expectations from partners and the Forest Service up front (what are constraints, what is decision space, what are partner expectations and commitments)
- Agree on basic goals at the outset, then define membership

### Membership

- The group should determine who needs to be at the table and who is missing
- Membership should come with a commitment
- Understand that diversity adds strength to collaboration
- Adjust timeline to involve many stakeholders
- Continually evaluate group diversity
- Minimize exclusion to manage inclusiveness
- Revise and update contact list regularly
- Build one-on-one personal relationships as much as possible
- Must replace an interest if someone leaves the group

### Decision Rules & Outcomes

- Have a transparent decision-making process
- Revisit decision making frameworks
- Set mile markers or points where arbitration is then an option for non-participants
- Define "consensus" very early and use it consistently
- Procedural rules for when decisions can or cannot be obstructed
- Evaluate the process at key points along the way, then conduct a full evaluation at the end
- Allow for "consensus with concern"



### Agendas

- Collaboratively set the agenda, or at least allow input
- Have a good agenda with clear objectives and times
- Clearly identify decision points in the agenda, and desired outcomes, then review at the end
- Be clear in the agenda about which decisions are being made
- If more time is needed, take the time but don't forget that deadlines are still important

### **Resources**

- [HNMCP Workshop Presentation](#)
- [Peer Learning Session Recording – Understanding and Addressing Critiques of Collaboration](#)



## Future of Collaborative Stewardship | Plenary Session: Future of Collaborative Stewardship

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### Speakers

- **Karen Hardigg**, Rural Voices for Conservation Coalition
- **Phil Rigdon**, Intertribal Timber Council
- **Martin Blaney**, Arkansas Game and Fish Commission
- **Lindsay Warness**, Boise Cascade
- **Nils Christoffersen**, Executive Director, Wallowa Resources

### Overview

Reflecting on the workshop, collaborative conservation leaders shared “aha moments” and observations to carry forward. Leaders also discussed whether we are achieving desired restoration results on the ground and shared ideas about what we need to build collaborative momentum.

### Summary

Thinking back on “aha” moments, speakers focused on some of the need-based changes that participants could work towards in order to build collaborative momentum. For example, workshop sessions illustrated the need for:

- Investment from Forest Service leadership in collaboration;
- Forest Service leaders with more collaborative experience (and new mechanisms or programs to build the experience);
- Leadership in the Forest Service and partner organizations who are ready to be risk-takers and experiment with new projects, agreements, and other innovations;
- Policy advocacy on behalf of rural communities; and
- Strengthened relationships to each other and the land.

### Keynote Address from Nils Christoffersen

Nils Christoffersen, Executive Director of Wallowa Resources, delivered the closing keynote address. Nils reflected on the growth of Wallowa Resources in the context of community conservation, and shared his thoughts on structural and regulatory barriers that we must overcome to achieve collaborative goals.

Nils connected the deep historical roots of participatory governance to present-day collaboration. Focusing on the power and opportunities associated with a stewardship economy, Nils spoke of the need to coordinate transformation from the bottom up (grassroots, community approaches) and the top down (policy and regulatory approaches). Though overreliance on legal frameworks can provide a false sense of certainty, adaptation and policy processes will drive the success of such a restoration economy. Sharing examples from Wallowa Resources, Nils illustrated how collaboration enhances democracy and the engagement of local citizens. Adaptive governance is being tested with some success. We’ve realized benefits to ecosystems through restoration and benefits to social and economic systems as well.

Place-based collaboratives – where federal, local, state, and tribal governments come together – are driving experimentation, adaptation, and new thinking across the United States. As a community, we need to follow their lead and approach the next decades of natural resource management with the same innovative thinking.



Finally, Nils explained that a strong collaborative provides meaningful returns for each member. The collapse and reorganization of governance has occurred throughout history. Nils characterized our current time as an opportunity for reorganization, noting, “Now is the time to pick up the stones together.” We can prove that, as a society, we are able to create resilient, participatory government.



## Planning | Building Momentum and Planning for Restoration Through Five-Year Plans and Other Endeavors

### Key Topics: Cross-Boundary Partnership

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#### Speakers

- **Alex Dunn**, Environmental Coordinator, Beaverhead-Deerlodge National Forest
- **Mark Corrao**, Hydrologist, Northwest Management
- **William Carromero**, Invasive Species Specialist, Rangeland Management, U.S. Forest Service

#### Overview

The panelists described different approaches to determining where and how to select forest projects on the landscape, and shared advice, strategies, and lessons from engaging collaboratively in mid-range planning efforts.

#### **Alex Dunn – Transparency in Forest-Scale Restoration Action Plan Development: Opening the Black Box**

Alex shared a case study in Southwest Montana where the Beaverhead-Deerlodge Working Group (Working Group) and Beaverhead-Deerlodge National Forest (BDNF) are working together to create a multi-year action plan for accelerating restoration projects across the 3.3 million acre BDNF. The existing process for project prioritization was not transparent, internally or externally. This contributed to a low-trust condition and precipitated the need for additional transparency in the project prioritization process. The BDNF worked with the Working Group to develop a new process using agreed-upon criteria to evaluate projects. Once the criteria were identified, the BDNF shared information about each project under consideration in a day-long workshop with the Working Group. Following that, both the BDNF and the Working Group rated projects, resulting in a relative comparison of different project attributes. Finally, the evaluations were used to populate a multi-year restoration action plan for the Forest. Benefits of the process include a shared understanding of specific constraints affecting the pace of restoration, building of trust through transparent processes, and joint ownership of the entire restoration project portfolio across the BDNF.

#### **William Carromero – Ozark Highlands Collaborative Forest Landscape Restoration Planning**

The Ozark-St. Francis National Forests worked with the Oak Working Group through the Collaborative Forest Landscape Restoration (CFLR) project to compare the impact of compartment-level planning with landscape-level planning. They realized that smaller-scale (compartment) planning was not achieving desired conditions on the forest, so they changed the approach to landscape-level. A challenge with working across the landscape is that multiple activities are occurring, often at the same time, so it is very important to be sure your team is well-integrated in order to reduce conflict.

#### Lessons

- Stakeholders can be extremely helpful in prioritizing where and when to work, and stakeholder involvement is crucial to project success.
- Landscape scale analyses provide more flexibility when determining program of work.
- Small projects will not get to desired conditions.
- Landscape level planning requires more involvement from program managers to avoid conflict between activities.



## **Mark Corrao – Anchor Forests: Improving Forest Ecosystem Function through Balanced Social, Economic, and Ecologic Management**

The forest crises we now face are too large and complex to be addressed at a local level or by any single ownership. Nationwide we are losing our ability to maintain resilient forests as a result of insects, disease, and wildfire impacts, forestry infrastructure reductions, and economic uncertainties. This is further exacerbated by an increasing urban population culturally removed from the natural environment. In the western U.S. nearly ten percent of the 740 million acres of forest lands are in a hazardous condition resulting from historic wholesale fire suppression and a lack of management. As a result, we are now faced with degraded forest conditions and increasingly severe wildfires that devastate forest ecosystems, burn homes and impact communities. The purpose of the Anchor Forest Project is to evaluate the-state-of-the-industry, successes and challenges of forest collaboratives, stakeholder sentiment, monetized ecosystem services, and available funding for eastern Washington. The results present treatment acres needed to address deteriorating forestland conditions and estimate the benefits these treatment acres would generate in the form of jobs, wages, product-sale revenue, and avoided-costs. The Anchor Forest concept is an innovative framework with the potential to leverage collaborative efforts against the challenges facing landscape-scale forest management.

### **Lessons**

- How do you resolve conflicts when setting priorities? Look for areas of overlap and agreement. If conflict is present, it is important to carefully navigate it so that the conflict is acknowledged but enthusiasm and momentum is supported while figuring out a solution.
- Forest management activities should be implemented at sufficient spatial and temporal scales to significantly impact the landscape.
- Identify direct and indirect impacts of management actions through long-term monitoring.

### **Resources**

- [The Anchor Forests Project](https://nationalforests.org/crw)





## Planning | Forest Planning Under the 2012 Rule: Early Lessons in Planning and Collaboration

### Key Topics: Collaborative Process

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#### Speakers

- **Susan Jane Brown**, Western Environmental Law Center (WELC), Planning Rule FACA Committee
- **Karen DiBari**, Director of Conservation Connect, National Forest Foundation
- **Michelle Nuttall**, Senior Project Manager, Environmental Policy & Sustainability group at Southern California Edison.
- **James Melonas**, Deputy Forest Supervisor, Nantahala & Pisgah National Forests

#### Overview

Forest planning under the 2012 rule has expanded the role of public participation and collaboration. Instead of reserving public participation only for the National Environmental Policy Act (NEPA) process, the 2012 rule encourages public engagement throughout all stages of forest planning. National forests have learned worthwhile lessons as they have started engaging the public in forest planning processes.

#### What has changed and what are the benefits

- The standards for public engagement require that the U.S. Forest Service include diverse stakeholders throughout all phases of the planning process. The public is to be involved in the *development* of the plan, not simply in the review process. Public input should play an important role in:
  - Assessments
  - Plan Development
  - Commenting on the Draft EIS
  - Objection process
  - Development of the monitoring program
- Public engagement in planning can improve the robustness of the plan, allow for corrections along the way, and build understanding around areas of conflict and amongst stakeholders.
- Above all, public engagement provides an opportunity to build strong relationships between the Forest Service and stakeholders.

#### Types of Public Participation

There are many ways the Forest Service can engage the public in the planning process. These strategies form a spectrum of public engagement, from collaborative workgroups to information dissemination. Collaboration is to be used where feasible and appropriate, but other types of public engagement are important where in-depth collaboration is not applicable.

Level	Examples of Agency Activities and Tools
<b>Collaborate</b>	Directly engage the public to exchange information with each other and work together on one or more issues during the planning process. Identify where there is agreement and disagreement. Potential tools: Facilitated or mediated discussion among public participants, Federal Advisory Committee Act (FACA) groups, and partnerships.



<b>Involve</b>	Work closely with interested members of the public to clarify concerns and seek feedback on how to meet challenges presented by the planning process. Potential tools: workshops, partnerships, and public meetings.
<b>Consult</b>	Provide information to the public and seek suggestions as well as feedback on potential issues and concerns. Potential tools: open house, public meeting, notice and comment, news release, and website.
<b>Inform</b>	Provide sufficient objective information to the public to convey an understanding of intended actions, processes, and preliminary issues. Potential tools: fact sheet, newsletter, mailing, news release, and website.

### Tips for Constructive Public Engagement

- Process education is very important.
  - New stakeholders are often inexperienced with forest planning processes and collaborative meeting processes in general. Take the time educate stakeholders on the process and introduce them to relevant features of the Forest Service's work.
  - Stakeholders often view planning as a very high stakes process, determining the fate of their interests in the forest. Participants may come ready to express their dissatisfaction with previous management actions and prepared to stringently defend their interests. High pressure situations can often be diffused by explaining the planning scope and process in more detail.
- Allow for time. When seeking a response from stakeholders, give them early notification and ample time to develop feedback. Recognize that sudden comment deadlines can be flashpoints for conflict.
- Narrow the focus of the engagement. Feedback will be far more useful if it is restricted to specific topics and objectives of the planning process.
- Provide proposals and options. Rather than simply asking for recommendations, stakeholders can provide more in-depth feedback when they are asked to respond to specific proposals or to choose between detailed options.
- Be transparent. Sharing information about the planning process and Forest Service restrictions helps to build trust and focus the conversation on the most beneficial topics.

### Resources

- [USFS 2012 Planning Rule Proposed Directives, Forest Service Handbook, Chapter 40, Public Participation](#) – pp. 16-34
- [Nantahala and Pisgah National Forests Plan Revision Home Page](#)
- [San Gabriel Mountains Community Collaborative](#)



## Planning | Innovative New Tools for Planning & Prioritization at Different Scales

### Key Topics: Modeling and GIS, Cross-Boundary Partnership

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#### Speakers

- **David Seesholtz**, Research Liaison, Pacific Northwest Research Station, U.S. Forest Service
- **Alan Ager**, Research Forester, Rocky Mountain Research Station, U.S. Forest Service
- **Rob Campellone**, Landscape Conservation Design Policy Advisor, U.S. Fish & Wildlife Service

#### Overview

This session introduced innovative and emerging tools to prioritize and plan restoration projects, including: Integrated Landscape Analysis Program (ILAP), production possibility frontiers, and new planning strategies for landscape conservation design.

#### David Seesholtz – Integrated Landscape Analysis Program (ILAP)

Resource managers, policy makers, and stakeholders are increasingly trying to collaborate across boundaries to achieve broad landscape goals. These efforts require an understanding of how alternative management approaches might interact with natural disturbances and other drivers to accomplish landscape restoration. The Integrated Landscape Assessment Program (ILAP) produces information, maps, and models to help land managers, policymakers, and others conduct mid- to broad-scale (e.g., watersheds to states and larger areas) prioritization of land management actions, perform landscape assessments, and estimate cumulative effects of management actions for planning and other purposes. ILAP has recently been updated to support project level planning, and can be used for National Environmental Policy Act (NEPA) analysis (i.e., to analyze wildlife habitat) at finer scales. In the future, ILAP may expand to areas, including forest plan revisions and “pay to play” arrangements.

State-and-transition models cover all major upland vegetation types in a four state area (Arizona, New Mexico, Oregon, and Washington), and integrate vegetation development, management actions, and natural disturbances to allow users to examine the mid- and long-term effects of alternative management and disturbance scenarios. New linkages to wildlife habitat, economics, aboveground carbon pools, biomass, and wildfire hazard have been developed and integrated through decision-support systems.

#### Alan Ager – Using Production Possibility Frontiers (PPF) to identify Tradeoffs

The broad mix of socioeconomic and ecological goals of federal forest restoration programs creates a complex prioritization problem for land managers. Restoration programs in non-forest ecosystems face a similar challenge where finite resources need to be allocated to most efficiently meet long-term goals. One way of prioritizing projects involves the use of production possibility frontiers (PPF).

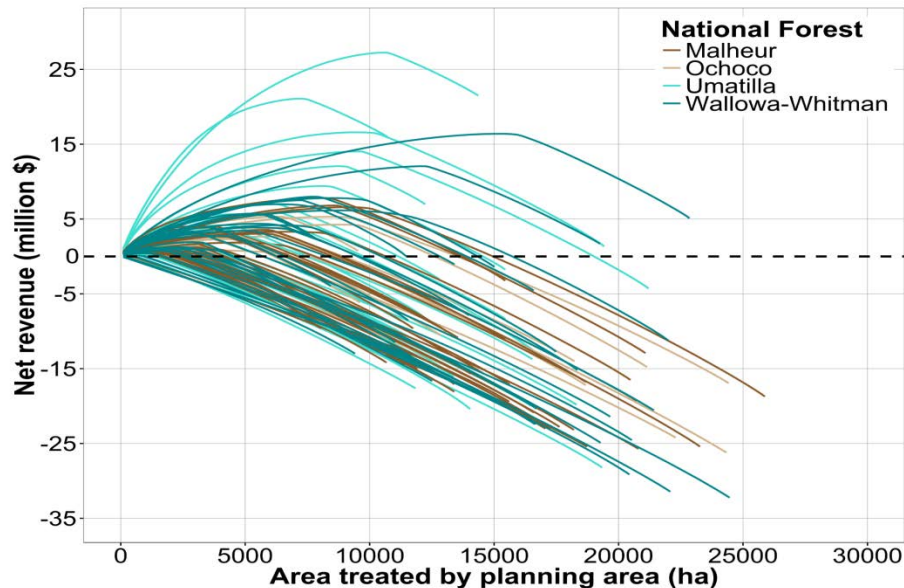
A production possibility frontier (PPF) is a standard mathematical tool in economics. A PPF is a graphical representation (as a curve) depicting all maximum output possibilities for two goods, given a set of inputs consisting of resources and other factors. In the case of forest restoration, the goods compared are the diverse goals of restoration projects, e.g., WUI risk reduction versus merchantable timber, or cumulative revenue versus the total forest area treated. PPFs can help land managers and stakeholders identify the tradeoffs and understand the cost associated with particular ecological versus socioeconomic priorities. Production frontiers can also be used to analyze the efficacy of current restoration efforts.

#### Example PPF:

- Planning areas are optimized for revenue under a range of treatment intensities



- As stands are added to the project, revenue peaks then declines



The results of this research on the national forests in the Pacific Northwest can be found in the articles listed under resources. The research illustrated unique restoration storylines for individual national forests. These PPF results could be combined with stakeholder preference surveys to find socially optimal and economically efficient pathways to achieve efficient long-term forest restoration goals.

Benefits of using PPFs:

- Shows that tradeoffs between restoration goals can be optimized.
- Facilitates dialog about tradeoffs.
- Allows managers to compare stakeholder preferences with production frontiers.

### Rob Campellone – Landscape Conservation Design using the iCASS Platform

Science is clear that human activity has led us into a transformational time in Earth's history. The environment is rapidly changing on a global scale. Traditional governance structures and planning processes cannot adequately address many contemporary environmental challenges, especially planning for ecosystem resilience and connectivity in an uncertain future. International agreements and national-level policies call for the development of new approaches that commit to multi-stakeholder planning and coordinated adaptation strategies. In recognition that no single agency or organization is equipped to tackle the breadth of environmental challenges alone, the U.S. Fish and Wildlife Service developed the iCASS Platform to foster transformation and integrated co-governance.

iCASS is an innovative systems platform for implementing landscape conservation design. A full description of the planning platform is forthcoming in *Landscape and Urban Planning* (Campellone et al.). The planning steps are below.

*i* = Integrated + Interdisciplinary + Informative + Inclusive + Iterative = Innovation

*C* = Convening Stakeholders

*A* = Assessing Conditions



Explore more: [nationalforests.org/crw](https://nationalforests.org/crw)

*S = Spatial Design*

*S = Strategy Design*

## Lessons

- Landscape models can inform collaborative group discussions. However, new tools aren't always a good replacement for collaborative deliberation (some fear the models could represent a sort of black box). Modelers struggle the most with creating multiple management scenarios to aid collaborative dialogue; it can be challenging to create three or more scenarios.
- We've been developing maps for a long time. Now we must figure out how we are going to collectively implement what the maps represent.
- New tools and models must incorporate cooperative governance. Other approaches won't work in the future. The whole conversation of prioritization is driven by policy at multiple scales.
- Data must be accompanied by a strategic plan for how we will use the data.
- Many agencies are working on landscape conservation design in a stovepipe. In the nature of effectiveness and efficiency, we should be working together.
- Social learning must support landscape conservation design.

## Resources

- [Integrated Landscape Assessment Program \(ILAP\) summary](#)
- [Landscape Treatment Designer – Overview and Example Application](#)
- Two academic papers on forest restoration Production Possibility Frontiers:
  - Ager, A.A., Day, M, Vogler, K. 2016. Production possibility frontiers reveal socioecological tradeoffs for restoration of fire adapted temperate forests. *Journal of Environmental Management* 176 (2016) 157-168
  - Vogler, K, Ager, A.A., Day, M. Bailey, J. 2015. Prioritization of forest restoration projects: tradeoffs between wildfire protection, ecological restoration and economic objectives. *Forests*: 4403-4420



## Planning | Large Landscape & Regional Planning

### Key Topics: Cross-Boundary Partnership

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#### Speakers

- **William C. Aney**, Eastside Restoration Coordinator, Region 6, U.S. Forest Service, Blue Mountain Restoration Strategy
- **Genevieve Johnson**, Coordinator, Desert Landscape Conservation Cooperative
- **Jim Capurso**, Regional Fisheries Biologist, Region 5, U.S. Forest Service, Salmon Super Highway

#### Overview

This session focused on strategies, opportunities, constraints and complexities of planning at the landscape scale.

#### **William C. (Bill) Aney – Eastside Restoration Strategy**

Recognizing the current trends in forest growth, wildfire effects, and climate change in eastern Oregon and Washington, the Pacific Northwest Region of the USFS chartered the Eastside Restoration Strategy in 2013. The strategy includes the Collaborative Forest Landscape Restoration (CFLR) project, Cohesive Wildfire Strategy projects, coordination with states, shared learning, and the Blue Mountains Restoration Strategy (BMRS).

The Eastside Restoration Strategy is a response to the fact that the pace of needed restoration has not been keeping up with the need. Planning has been the greatest constraint due to the lack of “shelf stock” (projects ready for implementation due to the completion of environmental analysis). The Region established a dedicated interdisciplinary team to focus for three years on vegetation management. The team will build partnerships, complete planning at a large scale, and design projects that can gain broad support.

#### Challenges/Opportunities

- Changing the way the Forest Service operates
- Changing the approach to National Environmental Policy Act (NEPA) analysis
- Learning best practices for large landscape-scale planning
- Learning best practices for working across forests, districts and collaborative groups
- Embracing the risks of experimentation
- Changing expectations internally and externally
- Effectively communicating about innovations, opportunities, and what is possible

#### **Genevieve Johnson – Planning for Restoration at the Landscape Scale: Desert LCC Case Study**

Resource managers concerned with conservation of natural and cultural resources are faced with increasing management challenges such as land-use conversion, sensitive species protection, invasive species, water scarcity, and a range of other complex issues — all of which are amplified by climate change. In response, the Desert Landscape Conservation Cooperative (LCC) is working to define priority resources and associated conservation goals, objectives, and targets that are of interest to multiple partners and to collectively identify solutions that can help manage change on the landscape.

#### Lessons

- At the landscape scale, it is helpful to have programmatic NEPA that can be applied at the watershed or project level.
- Link project-level impact to the landscape level to show broader context of work.





- When working together, partners need to respect each other's priorities. Start with "what are your priorities," identify commonalities, and build trust from there.
- Need dedicated infrastructure and support for people to focus their time in LCCs.
- It is people, not institutions, that matter - find connectors and a shared focus.
- Repeatable, applicable practices lead to success.
- Very important to talk about decision space openly – be clear about when the group is providing *input* versus when the group is *collaborating*.
- *Time* is needed to move from talking to decisions and implementation.
- Not every project is a collaborative one.

### **Jim Capurso – Salmon SuperHighway: Fish, Habitat, and Community Connections at a Landscape Scale**

The Salmon SuperHighway (SSH) partnership was formed to prioritize fish passage at multiple scales, concentrate restoration resources, and develop and use a passage barrier database to prioritize where fish passage restoration would have the greatest impact on the landscape and in benefitting salmon. Program managers from several federal and state agencies and stakeholder partners gathered to apply these concepts to a common priority subbasin in the Pacific Northwest, the Tillamook and Nestucca River Drainages of the Oregon Coast. They identified important criteria for selecting drainages: high quality habitat, fish species diversity, landownership mix, and an existing active restoration partnership community. Using the APASS model, the SSH partnership identified that out of 270 anthropogenic barriers, treatment of 63 barriers would return access to 95% of the blocked fish habitat. Considered a demonstration project, the SSH includes implementation, validation and effectiveness monitoring to facilitate learning and future application elsewhere. The SSH places a special emphasis on the human dimension of the watersheds with coordination at all levels of the partnership, facilitating ownership from key community members, and enhancing fundraising and marketing capabilities.

### **Lessons**

- Need to work at all scales to benefit salmon: project, stream, watershed, basin – the SSH developed a passage "portfolio" that sets priorities at a landscape scale, which is tied to measurable biological outcomes at the population level.
- Need to be problem-solving and exchanging data at multiple scales.
- This is not only about science. The human dimension and connecting stakeholders is an important investment of time and effort.

### **Resources**

- [Eastside Restoration Strategy](#)
- [Desert LCC Conservation Planning Atlas](#)
- [Salmon SuperHighway](#)



## Planning | Planning & NEPA at the Project Level

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### Speakers

- **Liz Johnson-Gebhardt**, Executive Director, Priest Community Forest Connection
- **Ryan Foote**, Deputy District Ranger, Idaho Panhandle National Forest, U.S. Forest Service
- **Rebecca Bartol**, Environmental Coordinator, Superior National Forest, U.S. Forest Service
- **Russ Vaagen**, Vice President, Vaagen Brother's Lumber

### Overview

Speakers in this session described innovative National Environmental Policy Act (NEPA) projects with collaborative components, including the Mill Creek A to Z Stewardship Project on the Colville National Forest, Bottom Canyon on the Idaho Panhandle National Forest, and the North Shore Restoration Project on the Superior National Forest.

#### **Ryan Foote and Liz Johnson-Gebhardt – Bottom Canyon Project, Idaho Panhandle National Forest**

The Bottom Canyon project is an 11,000-acre restoration project on the Idaho Panhandle National Forest (IPNF) aimed at improving resiliency, contributing to socioeconomic sustainability, and improving watershed health. The project is one of the first in the country developed using authorities from the 2012 Farm Bill. IPNF staff developed the project with the Panhandle Forest Collaborative (PFC), with facilitation assistance from the National Forest Foundation. Through successful collaboration, the PFC developed an alternative to the original proposal, in which they recommended that the IPNF expand the treatment area from approximately 1,400 to 3,830 acres. During the process, the District Ranger held the PFC accountable to come prepared to meetings and adhere to the timeline, which increased the PFC's ownership in the project and increased public access to the project development process.

#### **Rebecca Bartol – North Shore Restoration Project, Superior National Forest**

The Superior National Forest (SNF) developed the North Shore Restoration Project through a collaborative effort with the North Shore Forest Collaborative (NSFC). To address challenges related to management across public land jurisdictions and private lands, collaborative members came from organizations that have management, assessment, or regulatory functions in the project area, or own land within or near the North Shore collaborative area on the Superior National Forest. The NSFC wanted to address the need for greater diversity on the landscape. The SNF used an adaptive management framework, focusing on innovative “if, then” statements and including more monitoring than usual. The SNF's interdisciplinary team streamlined development of the proposed action, and as a result was able to treat 2-3 times more acres than originally considered.

#### **Russ Vaagen – Mill Creek A-Z Project, Colville National Forest**

Through *experimental* stewardship contracting on the Colville National Forest (CNF), the Mill Creek A-Z Project represents a new way of thinking. The Northeast Washington Forestry Coalition developed the project, along with the CNF, as a way to expand the capacity of the CNF by treating more acres – within the existing legal framework – without larger budgets and additional pressure on Forest Service staff. In 2013 the CNF located the project area, created an RFP for NEPA analysis, and selected Vaagen Brothers Lumber's proposal as the best value. Vaagen Brothers contacted with Kramer Fish Science as a 3<sup>rd</sup> party contractor to complete the NEPA analysis and sale prep work on 54,000 acres. The CNF recently signed the decision notice. There were some objections; objectors hoped for an Environmental Impact Statement (EIS) instead of an Environmental Assessment (EA). Vaagen Brother's Lumber is still



optimistic that work will start in the summer of 2016, and believes that Kramer Fish Science has been held to a very high standard.

## Lessons

- Through mutual accountability, clear communication, and strong trust, leadership from the IPNF and PFC successfully collaborated on one the first 2012 Farm Bill projects in the county.
- A joint fact-finding panel helped the PFC discuss through science-based concerns and ultimately recommend a larger treatment area than originally proposed.
- The PFC designed one point of contact from the group and one from the Forest Service to allow for clear and effective communication.
- Frequent field trips helped the PFC and IPNF build relationships.
- Patience and persistence is important when navigating the relationship between two agencies, such as the U.S. Forest Service and the Natural Resources Conservation Service.
- The North Shore Restoration Project was litigated because of a lack of specificity about the adaptive management monitoring measures (specifically the trigger points) in the NEPA analysis. However, monitoring information was included in the implementation guide. The lesson is to include all of the necessary detail in the NEPA documentation – the information that the litigators wanted had already been developed.
- It is important to stay knowledgeable of the National Forest's priorities and potential future direction when designing projects.
- Collaboration is not always the best tool; not every project needs collaboration. However, collaboration does have the potential to expedite the NEPA process.

## Resources

- [Climate Change Adaptation Workbook – Short Form](#) (From the North Shore Restoration Project)
- [Adaptive Management and Monitoring – Appendix E with trigger points](#) (From the North Shore Restoration Project)
- [Climate Change Response Framework](#) (From the North Shore Restoration Project)
- [North Shore Forest Collaborative](#)
- [Panhandle Forest Collaborative](#)
- [Northeast Washington Forestry Coalition](#)



### Speakers

- **Lee Cervený**, Research Social Scientist, Pacific Northwest Research Station, USFS
- **Megan Matonis**, Biological Scientist, Rocky Mountain Research Station, USFS
- **Mike Petersen**, Executive Director, The Lands Council

### Overview

In this session speakers introduced examples of the role of science in collaborative processes. Below are three successful examples, followed by advice for collaboratively engaging in science.

#### **Lee Cervený – Human Ecology Mapping – Mt. Baker-Snoqualmie National Forest, WA**

Human ecology mapping was developed as an approach used in public engagement efforts to gather information about forest destinations, special areas, and routes that matter to people. These spatial data are digitized to develop maps that collectively convey a group or community's relationship with a landscape and can be analyzed alongside other geo-spatial data layers for planning purposes.

A recent human ecology mapping project has aided one national forest's planning process for travel management. In the Mt. Baker-Snoqualmie National Forest, citizens and stakeholders shared information about their favorite forest destinations and the forest roads that mattered most to them. These data were gathered in multiple community workshops and an online survey. Resulting data was used in the development of the Mt. Baker-Snoqualmie's "Sustainable Roads Strategy." The project also served to train a cadre of local stakeholders and citizens in human ecology mapping techniques that expanded local capacity to conduct social science research and to recognize its benefits.

#### **Megan Matonis – Citizen Science Data-Collection – Uncompahgre Plateau, CO**

The Uncompahgre Plateau Collaborative Restoration Project (UP CFLRP) was born from relationships and successes established through various partnerships and past collaborative projects between the Uncompahgre Partnership, U.S. Forest Service, local and county governments, interest groups, industry and others. While planning a 10-year restoration project covering over 500,000 acres, the Forest Service initiated a citizen scientists program to train volunteers to collect important data for planning and monitoring restoration efforts.

This citizen scientist program involves stakeholders in collecting data that then informed restoration treatments and monitoring. Researchers from Colorado State University helped the group establish a research methodology for reconstructing pre-European settlement ponderosa pine forests on the plateau. Volunteers mapped the location of old ponderosa stumps burned in historic fires. The data collected in this effort showed a forest that was much less dense than is currently found on the plateau, and has informed current restoration efforts. Ongoing monitoring efforts have then measured the effect of treatments on invasive species, forest density, and native plant establishment.

#### **Mike Petersen – Collaboratives Incorporating Science – Colville National Forest, WA**

Timber and conservation interests came together in Northeast Washington nearly 15 years ago and discussed guidelines for silviculture. It was critical to run those guidelines through a model that would show what volume might come off the forest and it was also critical that the guidelines were using the best available science.



Agreeing on the science is a large part of making collaboration work. Instead of debating only as competing interests, various parties can find common ground concerning the science of what conditions and types of intervention foster the most sustainable forests. Once the focus is on the science it becomes clear that there is valuable expertise and forest knowledge on all sides of the table.

### **Lessons from Panel Discussion**

- Citizen-science projects should keep things simple – do not overly complicate information and tasks. Offer clearly defined and easily accessible ways to be involved in the process. Be ready to explain the finer points of a project and the methodology behind it, but offer quick and simple ways for anyone interested to participate.
- Be aware of how often you engage the public. Make sure they are aware of project timelines and when they can expect to hear from you. Delays in communication are detrimental to sustaining public involvement.
- If you are engaging the public, welcome all interest groups that want to be involved. It may seem intuitive that keeping interest groups to a minimum could create a more neutral environment. However, it can often create animosity or give the appearance of bias.
- Take the time to learn the values and history of each member of the collaborative. This helps the whole group expand their understanding of the forest. Moreover, when the group does appeal to scientific research, they can do so in ways most relevant to the values and interests of the other group members.

### **Resources**

- [A Pocket Guide to Pocket Science](#)
- A scholarly introduction to Human Ecology Mapping: [Making sense of human ecology mapping: an overview of approaches to integrating socio-spatial data into environmental planning](#)



## Science & Action | Restoration as Science in Action

### Key Topics: Adaptive Management

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#### Speakers

- **Amy Waltz**, Program Director of Science Delivery, Ecological Restoration Institute
- **Frank Lake**, Research Ecologist, Pacific Southwest Research Station
- **Paul Rogers**, Director, Western Aspen Alliance, Adjunct Associate Professor, Department of Wildland Resources, Utah State University

#### Overview

This session presented examples of applied ecological science from different biomes that have integrated science and restoration action among groups with diverse social, economic, and personal values.

#### **Amy Waltz – Four Forests Restoration Initiative, Arizona**

The Four Forests Restoration Initiative (4FRI) is a collaborative, landscape-scale initiative designed to restore fire-adapted ecosystems across the Kaibab, Coconino, Apache-Sitgreaves, and Tonto National Forests.

The Four Forest Restoration Initiative (4FRI) stakeholder group developed the adaptive management and monitoring plan for the first million-acre restoration planning area of the 4FRI. Over the course of four years a small working group developed a monitoring plan that could assess how well the stakeholders' desired conditions will be met, while meeting U.S. Forest Service National Environmental Policy Act (NEPA) requirements, planning and project-level specificity. The group included Forest Service staff in their meetings and review.

At each step of the planning process the group sought to unify stakeholder input and expectations with scientific research. The key steps in this process included (1) identifying science-supported indicators for stakeholders' desired conditions, (2) prioritizing which indicators were most important and feasible to monitor, and (3) defining measurable triggers and thresholds for each indicator to provide guidance for adaptive management. This process was not simply a matter of bringing scientific research into the planning process; rather, the plan worked to incorporate the social values, local knowledge, and desired conditions of stakeholders into a rigorously measurable management plan.

#### **Frank Lake – Incorporating Traditional Ecological Knowledge (TEK)**

Working with the Forest Service, the Western Klamath Restoration Partnership (WKRP) is creating a path toward collaborative fire management in the Klamath Basin of northern California. The planning area is 1.2 million acres that includes or adjoins five ancestral territories of the Klamath Tribes, which overlap both the Klamath and Six Rivers National Forests. The central aim of this project is to re-introduce fire to areas where it has been excluded, and to do so in an ecologically sound way that preserves or restores habitats and resources valued by the tribes.

Fire treatments can be beneficial or harmful to rural or tribal uses of the land. The WKRP has been working together to bring scientific and community knowledge and values into a unified adaptive management plan. The key to this collaborative approach has been taking the time to identify shared values and building the trust to ensure all parties that the management principles can accurately capture these values.





This process has included many collaborative research methods:

- Engaging tribes and tribal organizations as research partners.
- Identifying questions and science support needs for the tribes to address.
- Tribal participation in organizing research methods, analysis, results, and how data is shared with the public.
- Tribal participation assisting with the creation of the best available science to inform policy development and management of landscapes and resources.

Incorporating land-user knowledge of ecological condition and indicators requires a process of translating that knowledge into formal scientific language to be incorporated into management planning. This requires a good deal of time to listen and ensure that all parties understand each other. It takes time, but the process builds trust.

### **Paul Rogers – Managing the Pando Aspen**

The "Pando" aspen (*Populus tremuloides*) clone located in central Utah is thought to be the largest living organism on earth, weighing an estimated 5.8 million kilograms and spanning 43 hectares. Because of its immense size Pando not only garners international attention, but it is highly visible to public scrutiny. This nearly pure aspen community is rapidly collapsing due to a combination of aging overstory and chronically browsed vegetative suckers.

Starting in 2013, a sub-group of the Utah Forest Restoration Working Group collaborated on a treatment and monitoring plan. The plan consisted of fencing, experimental treatments (including burns and juniper removal), and repeat monitoring to test efficacy of prescriptions. Soon after the fence was erected aspen ramets began to appear and attain up to 0.5 m growth. To test response and survival rates, the team established a total of 27 monitoring plots paired as treatments and controls outside and inside the fence. Animal feces were counted and browsing levels were measured to determine cause and level of herbivory.

While fenced areas did see increased stem growth, it is impractical to use fencing as a large scale management practice. The high level of experimental planning and monitoring, however, is yielding valuable information for understanding aspen restoration. Successful restoration of Pando will provide insight for similar threats to aspen at landscape and regional levels across the West.

### **Lessons**

*Establishing Consensus* – Even when there is broad scientific consensus on an issue, it can be difficult to create consensus in a local group. People often fall back to positional statements. Some ways of moving past disagreement include:

- Identify shared values. Progress can be made and relationships can be built by first spending time to share what all stakeholders find valuable about the land and highlighting areas of agreement.
- Instead of only asking about desired forest conditions, try identifying *undesirable* conditions. There is often broad agreement about what is undesirable. This can form the foundation of what a restoration plan will address.

*Good Monitoring* – Effective monitoring is critical to adaptive management. In order to get the most out of monitoring:

- Utilize multiple parties to increase monitoring capacity, including NGO's, citizen-science programs, universities, etc.
- Be sure to standardize data collection between parties at the beginning of the process.



*Translating Science and Values* – In order to foster buy-in from stakeholders and to encourage partnership in planning and monitoring it is important to translate how scientific metrics relate to each stakeholder's interest in the forest. More than simply creating stakeholder buy-in, land managers also benefit from taking the time to discuss how local interests relate to scientific metrics. Local knowledge is vital for identifying which metrics and which locations can be most feasibly and effectively monitored.

## **Resources**

- [4FRI Stakeholder Group Website](#)
- [4FRI Monitoring Plan, pp. 747-857](#)
- [Collaboration in National Forest Management](#)
- [Sociocultural Perspectives on Threats, Risks, and Health](#)
- [The WKRP plan can be found here](#)
- [Pando Aspen Clone Restoration Project – Decision Memo](#)
- [Guidelines for Aspen Restoration on the National Forests in Utah](#)



## Science & Action | Restoration Under a Future Climate

### Key Topics: Adaptive Management, Cross-Boundary Partnership

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#### Speakers

- **Cynthia West**, Director of the Office of Sustainability and Climate Change, U.S. Forest Service
- **John Stanturf**, Senior Scientist, Southern Research Station, U.S. Forest Service
- **Matt Williamson**, Conservation Scientist, University of California-Davis

#### Overview

The panel discussed how information about the impact of climate change, and potential responses, can be shared with managers to support restoration decision-making.

#### Cynthia West – Understanding and Managing Climate Change Effects on Federal Land

The Office of Sustainability and Climate Change is working to increase the U.S. Forest Service's tools and capacity to respond to climate change through the Climate Change Scorecard, which scores

1. Organizational capacity (employee education, designated climate change coordinators, program guidance)
2. Engagement (science and management partnerships, other partnerships)
3. Adaptation (assessing vulnerability, identifying adaptation actions, monitoring)
4. Mitigation & sustainable consumption (carbon assessment and stewardship, sustainable operations)

At the forest level, important elements of this are **vulnerability assessments** (evaluation of the degree to which systems are susceptible to the effects of climate change, being conducted by national forests), followed by **adaptation** (adjustment to planning documents and management approaches to mitigate harm or exploit benefits of climate change). In other words, this is where the managers can take steps to build in resilience to change. Forest Service Research Stations and others have developed many resources and partnerships to support managers (see resources).

#### John Stanturf – Restoration under Climate Change

The key questions for managers are “When should I change from adapting to current conditions (which project the future from the past) to managing for adaptation to future conditions?” and “What if future conditions are radically different from the past, and from projections of the future?” Three strategies are helpful in answering these two questions: *incremental, anticipatory, and transformational adaptation*.

- *Incremental* adaptations are often characterized as “no regrets” approaches where the benefits are realized under current climatic conditions, as well as maybe adapting to future conditions. They involve extensions of current practices to respond to variations in climate and extreme events which could also reduce vulnerability or avoid loss under current conditions.
- *Anticipatory* approaches may use many of the same techniques as incremental approaches but with a greater emphasis on adaptation to future climate, thereby tolerating more ecological novelty. Management focused on resilient forests under future climate conditions aims to maintain ecological function and capacity for change, rather than specific species composition or habitat conditions for particular animals.
- *Transformational* approaches anticipate larger shifts in climate requiring significant changes to management and management in the longer term. Transformational adaptation arises spontaneously as novel ecosystems emerge or it may be intentionally planned.



	Strategies for Adapting to Climate Change		
Features	Incremental	Anticipatory	Transformational
Vulnerability Target	Reduce vulnerability to current stressors	Reduce vulnerability to current and future stressors	Reduce vulnerability to current and future stressors
Restoration Paradigm	Ecological restoration: historic fidelity	Functional restoration	Intervention ecology
Species	Native	Native, or exotic with functional equivalencies	Native, exotic, or designer species
Genetics	Local sources, natural evolution	Conventional breeding or biotechnology for clones or provenances with adaptive traits	Transgenic for keystone species, cloning extinct species
Invasive Species	Prevent or remove	Accept those that are functional analogs to extirpated natives	Accept as novel
Novel Ecosystems	Prevent or avoid	Accept and manage neo-native (emergent) assemblages	Manage novel and emergent ecosystems (exotics dominate)

### **Matt Williamson – Opportunities and Obstacles for Incorporating Climate Information into Forest Restoration**

The John Muir Institute of the Environment, in a partnership with others, have studied where managers access information about climate change through a large-scale survey of people in the National Park Service, Forest Service, and U.S. Fish & Wildlife Service. The research found it is challenging for people to integrate climate change data into their decision-making due to “information overload.” The many online portals and other sources of data often aren’t used to their potential because people prefer to get information through “consultation with experts.” Who those experts are, however, isn’t known, although indications are that most people look within their own organizations for expert advice. Climate change information is usually relevant to forest restoration projects, but only about half of projects use it. People list a variety of reasons why they don’t use it, and there is no clear answer. Matt discussed the importance of collaborative groups in providing access to a broader suite of expertise and capacity; providing context to ensure credibility and utility; and altering the sociopolitical context for decision-making.

#### **Lessons**

- When gathering data, be sure to identify questions first before gathering data or spending money on technology.

#### **Resources**

- [Intermountain Adaptation Partners](#)
- [Northern Institute of Applied Climate Science](#)
- [USDA Climate Hubs](#)



## Science & Action | Using Science to Make Durable Decisions

### Key Topics: Modeling and GIS

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#### Speakers

- **Sherry Hazelhurst**, Director, State & Private Forestry, Region 5, USFS
- **Conor Phelan**, Conservation Analyst, Chesapeake Conservancy
- **Jenny Briggs**, U.S. Geological Survey

#### Overview

This session reviewed examples of where science modeling and cost/benefit analysis are beneficially guiding collaborative restoration design and implementation.

#### Sherry Hazelhurst – Valuing Ecosystem Services – Mokelumne River Watershed

One way of using science to direct decisions is to identify and understand the value of *ecosystem services*. Ecosystem services are the benefits people obtain from ecosystems. These typically include provisioning services such as food and water; regulating services such as flood and disease control; cultural services such as spiritual, recreational, and cultural benefits; and supporting services, such as nutrient cycling, that maintain the conditions for life on earth.

An interagency team assessing ecosystem health of the Mokelumne River Watershed in Central California collaborated to value ecosystem services toward understanding how to avoid costs of wildfires and serve as an example for telling the story of a forest's worth. Identifying ecosystem services allowed this team to effectively use ecological data to tell compelling stories. The team both understood their forest better and developed a shared way of easily and specifically communicating the forest's value to the larger community.

#### Benefits

- Assigning values to ecosystem services helps demonstrate the ecological connection of people to forests, even in farther removed and urban communities.
- Presenting ecological information this way elicits care and concern for the ecosystem.

#### Conor Phelan – Sharing Geospatial Data

The Chesapeake Conservancy's Conservation Innovation Center (CIC) works to change the way geospatial data is created and used to better inform on-the-ground restoration and conservation efforts. The CIC is helping inform practices at the parcel, and even sub-parcel, scale through the creation of high-resolution information and cutting-edge modeling and geospatial analysis techniques. Recognizing the common divide that exists between those with geospatial data and those who are actually implementing management practices in the field, the CIC also focuses on creating easy-to-use web tools that allow any individual to be able to conduct customized, high-level geospatial analysis at the click of a button.

#### Benefits

- Land managers have much easier access to tools to support a better understanding of specific aspects of the land, changes over time, and relationship to other areas.
- Collaborative projects can more easily build a shared vision of the land and their project goals. Being able to actually visualize a restoration project in detailed maps and models clarifies the planning process and provides easy ways to communicate it with others.



## Lessons

- If we want science to inform collaborative efforts it has to be linked to land management plans.
- Present data in a way that is accessible to the lay person.
- Using science to inform restoration and create ecosystem value assessments is highly important in urban areas. One good tool for this process is *i-Tree* (listed below under Resources).
- When available, traditional ecological knowledge is an important part of our best understanding of a landscape. Scientific data can support traditional knowledge and help achieve desired conditions when a community is offered easily-accessible data and invited into the management process.
- Provide data-sets to jump the divide between people with data and those who need data to support better project design and develop a more comprehensive understanding of impacts.
- To make the most scientifically-guided decisions, take the time to build a thorough, linear decision-making process, where relevant data can be gathered and processed to most beneficially inform the process.

## Jenny Briggs – Diverse Roles of Ecological Science in Decision-making in the Front Range CFLRP

The scale and severity of disturbances in the Front Range ponderosa pine has increased since the 1990s. Following the Hayman Fire, in 2002 the Front Range Forest Roundtable formed and became one of the first CFLR projects in 2010 in an effort to apply landscape restoration. As a collaborative, the Roundtable has identified a wide range of perspectives on key variables and targets, as well as trends to monitor. Early treatments were more fuel reduction prescriptions than restoration. Over time it has become clear that the timing of reports and science is not always helpful to managers, and this is a barrier. Other challenges are turnover, limits to time and energy, and lack of applicability of the national ecological indicators. The Front Range is using adaptive NEPA and integrating adaptive management.

## Lessons

- The science-based decision-making process is non-linear on the Front Range.

## Resources

- [Ecosystem Services – USFS FAQ](#)
- [The Chesapeake Conservancy's Conservation Innovation Center](#)
- [i-Tree – tool for urban and rural forestry analysis](#)
- [Front Range Roundtable](#)



### Speakers

- **Daniel Williams**, Research Social Scientist, Rocky Mountain Research Station, USFS
- **Courtney Schultz**, Assistant Professor, Forest & Rangeland Stewardship, Colorado State University
- **Anne Carlson**, Climate Associate, The Wilderness Society

### Overview

This session reviewed multiple issues surrounding integrating science into action. Presenters discussed theoretical issues about the social learning involved in collaboration, reviewed current research topics in collaborative management, and highlighted examples of collaborative use of science in planning and implementation.

### Daniel Williams – Place-Based Collaborative Learning

Place has emerged as a significant topic within conservation research and practice. In particular, Place-oriented inquiry and practice from the social sciences can help us understand and overcome persistent gaps between science and practice.

#### *The Problem – An inadequate idea of science and knowledge*

The pursuit of integrated science often starts with poor assumptions about the nature of science. One is that scientific knowledge is “universally” true regardless of time, place, and the position (e.g., cultural background, world-view) of the knower. In other words, it is assumed that people can, in principle, objectively observe the world. If this were the case, then scientific knowledge would come to us like pieces of a puzzle, where results from different disciplines could be collected and pieced together cleanly. Collaborative conservation, then, would simply be a matter of stakeholders collecting the appropriate data to put together the puzzle.

In reality, knowledge of a place is far more complicated than this. People know a place from multiple viewpoints and through the lens of differing values. This diversity in how a landscape is known leads to complex problems and deep disagreements.

#### *A Way Forward – Place-based collaborative social learning*

The challenge is to create the social conditions for social learning. Collaborative tools try to structure dialogue in a way that brings people together on the basis of their shared interest in the place, even if they share little else. Recognizing the positionality of human knowing helps bring legitimacy to the different viewpoints, ideally fostering mutual learning.

In such contexts, the governance of complex adaptive systems depends on bringing together the partial knowledge and combined actions of many practitioners and stakeholders, each familiar with and responsible for various parts of the overall system. In sum, place-based social learning addresses the inherent uncertainty and complexity of knowledge, bridges the epistemological divide between local and generalizable scientific knowledge, and validates knowledge-creation among stakeholders.

Two pieces of advice from social science:

- I. Be sensitive to the view from somewhere – that is what is subjective, actor-oriented research brings to light.





2. Different domains of knowledge (e.g., social, ecological, moral, experiential) are not easily integrated. A governance system which takes this into account will benefit from the involvement of diverse stakeholders.

### **Courtney Schultz – Social Science Research of CFLRP**

A network of researchers studying the implementation of the Collaborative Forest Landscape Restoration Program (CFLRP) formed in 2012 to coordinate research efforts, reduce overlaps and identify possible synergies. CFLRP is interesting to researchers as a national movement towards collaborative and adaptive forms of governance. Moreover, the program provides a ready-made set of cases on similar timelines. Studying how each project site manages to address the task of collaborative planning and monitoring offers great insight into what produces successful collaboration.

Current research is still evaluating if the promise of CFLRP has come to fruition and if the program should be extended. Social science research helps to identify the issues encountered in various forms of collaboration and governance structures. More than just monitoring outcomes on the forest, much can be gained from better understanding the dynamics of the collaborative process. Topics for future social science research include:

- How do we define collaboration and do we need to?
- How do we sustain collaboration and build trust?
- How do we create an organization capable of learning, sharing lessons learned, and supporting new forms of governance?
- How can we capture and diffuse lessons learned about collaborating, using science, building effective monitoring programs, creating restoration objectives, and defining desired conditions to other contexts, like forest planning?

### **Anne Carlson – Crown Adaptation Partnership – Crown of the Continent (Montana/Canada)**

‘Taking action on climate change’ is a strategic initiative of the Crown Adaptation Partnership (CAP), led by the Crown Managers Partnership, Crown Conservation Initiative, the U.S. Forest Service’s Northern Rockies Adaptation Partnership, and The Wilderness Society. CAP brings together the expertise of a broad suite of government and conservation representatives, tribes and First Nations, universities, and community stakeholders to implement coordinated climate change adaptation strategies across the Crown of the Continent ecosystem based on the best available science.

In late 2013, CAP began working to identify a ‘Big Tent’ framework for collaboratively addressing climate change across the Crown of the Continent. The group agreed that components of the new ‘Big Tent’ model included: (1) working at the landscape-scale, (2) using the best available science, (3) diverse and inclusive collaboration, but with (4) a solid understanding of the priorities and directives of each jurisdiction in the Crown, (5) sharing effective management actions across the landscape, (6) establishment of adaptive management frameworks, and (7) engaging a mixture of senior-level managers, middle managers, and on-the-ground biologists and partners. By the end of the first workshop, participants had identified multiple opportunities for collaboration, including: aquatic invasive species; five needle pine restoration; cold-adapted native salmonids; terrestrial invasive plants; and prescribed fire in mixed severity fire regimes. A final category of mesocarnivores was added after follow-up meetings with Forest Service staff and additional partners.

### **Lessons**

- Science can sometimes act as a conflict-mitigator, but it can also add to conflict.
- Differing values and perspectives toward wildlife species can be a challenge.
- There is no magical, “right” scale.



- Tracking CFLRP ecological impact is slow. Progress on social science is out in front of other reporting.
- Need to recognize that there are impacts on non-federal land managers and non CFLRPs.

### **Resources**

- [Daniel Williams' academic papers of Place-Based Conservation](#)
- [CFLRP Research and Resources compiled by the National Forest Foundation](#)
- [Pinchot Institute Meta-Analysis of Research on CFLRP](#)
- [Crown Managers Partnership](#)



## Collaboration & Engagement | Problem Resolving and Preventing: Working Together Effectively

### Key Topics: Collaborative Process

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#### Speakers

- **Jerry Ingersoll**, Forest Supervisor, Siuslaw National Forest, USFS
- **Nolan Colegrove**, District Ranger, Six Rivers National Forest, USFS
- **William Butler**, Assistant Professor, Florida State University
- **Alan Harper**, Resource Manager, Idaho Forest Group

#### Overview

This session provided examples of the challenges and successes of collaboration from the U.S. Forest Service and partner perspectives.

#### **Jerry Ingersoll – The Siuslaw National Forest, Oregon**

For more than twenty years the Siuslaw National Forest in western Oregon has been known for collaboration and restoration. The story of collaboration on the Siuslaw has its origins in the spotted owl crisis of the early 1990s and the Northwest Forest Plan. In the face of dramatic changes in forest management, including a drastic decrease in timber sold, the collaborative came together to negotiate a way forward that aligned with new management ideals and benefited local economies. The resulting collaborative efforts reflect the unique ecosystem, human communities, economy, and management history of the Coast Range.

In 2016 collaboration is rapidly becoming an expectation across the Forest Service. The Siuslaw story provides insight on sustaining and nurturing a mature collaborative over time, as players and expectations change and relationships are tested.

#### **Lessons from Sustaining Collaboration**

- Trust is precious, can be lost, and sustaining trust can't be taken for granted.
- Collaboration is enduring work, and requires community and institutional capacity to sustain.
- Collaboration is founded on personal relationships, but sustainability requires grounding those relationships in institutions.
- Sharing leadership and credit is essential.
- There must be work to do and something to keep people engaged once the crisis is past.
- There must continue to be something in it for everyone.
- Initiation may be about courageous leadership, but sustainability is about articulating culture and vision.
- In the end, it's about sustaining a brand – a recognizable ideal of what collaboration is and what the group stands for.

#### **Nolan Colgrove – Western Klamath Restoration Partnership**

This planning effort explores a path toward collaborative fire management in the Western Klamath landscape. It arose from a desire by the Karuk Tribe, the Mid Klamath Watershed Council, Forest Service, area Fire Safe Councils, environmental groups, and other community-based stakeholders to explore what fire management could be like using a collaborative paradigm.

The WKRP utilized a two-pronged approach to shape the planning effort: GIS-based fire modeling and an open and interactive planning process. Each prong engaged multiple stakeholders and multiple



ecological and social values. Cash and in-kind funding for the effort included multiple local, regional, and national sources. Ultimately, the combination of approaches led the group to envision three integrated fire management projects that occur at the landscape- scale.

A hallmark of this effort was the intensive participation by individuals and organizations with diverse and sometimes conflicting perspectives about how to shape fire management. Partners had to work to overcome a long history of unsatisfactory wildfire events, mistrust, and failed attempts to work together. Three things that helped foster a new level of trust and partnership include:

- Facilitated meetings, which brought diverse stakeholders together to listen to each other.
- Transparency and inclusiveness at every step of the planning process.
- A teachable attitude, realizing that the Forest Service does not have all the answers and can really benefit from stakeholder input.

### **Alan Harper – Panhandle Forest Collaborative**

When the Panhandle Forest Collaborative (PFC) first met in northern Idaho, most of the conflict was between the environmental community as one group and the Forest Service and industry together as another. Over time, the environmental community and industry started to trust one another by finding compromises that both parties could live with. Conflict then shifted, and the environmental community and industry started working together as one, often in conflict with the Forest service.

After several years of meetings and countless trips to the woods the group completed its first project, a 10,000 mbf Stewardship sale. At some point during the development of that first project all parties involved started listening and trusting one another. Key elements of that first project have now been used in several other projects on the forest. It is important to know that none of these projects have met 100% of the goals of any one group, but each group found acceptable compromises.

Three lessons from this successful collaboration:

- Bring in all stakeholders possible and listen to their interests.
- Strengthen relationships with the conservation community and leverage their political capital for mutually beneficial outcomes.
- Show how retaining infrastructure adds value as a tool for forest restoration.

### **William Butler – 10 CFLRPs**

Although Forest Service personnel have experience engaging in collaborative planning, the Collaborative Forest Landscape Restoration (CFLR) program requires collaboration throughout implementation and multi-party monitoring. Through a series of qualitative interviews with participants in the first ten landscapes enrolled in the CFLR program, William Butler sought to identify the ways in which collaborative participants and agency personnel conceptualize how stakeholders can contribute to implementation on landscape-scale restoration projects. Butler found that groups can collaborate during implementation by conducting field reviews, providing ongoing prioritization, and other activities.

These interviews found that collaborative implementation in the context of CFLRP,

- Leads to largely indirect influence on agency implementation of projects,
- Creates opportunities for expanded accountability through informal and relational means, and,
- Creates feedback loops for robust opportunities to engage in adaptive management across time and space.

### **Lessons**

- Don't let the Federal Advisory Committee Act (FACA) scare you. Let it be your guide.



- Match your collaborative structure to expectations in terms of outcomes, meeting frequency, topics of discussion, etc.
- As trust builds, projects may be able to grow in size. Collaboratives that focus on larger scale work tend to involve more agencies.
- Sometimes new leadership on a National Forest results in the brakes going on. Other times turnover leads to a new vision and fresh perspective. Embrace turnover – it’s not always the worst thing! *In some places, collaborative groups interview candidates for leadership position. Participants thought this sounded like an idea worth pursuing in more places.*
- Collaborative groups fund operations in different ways:
  - Each group may contribute funds so that one person can attend who wouldn’t otherwise.
  - Members may pay annual dues to serve as seed money for larger grants.
  - Forest Service provides funds in some cases.
- Mature collaborative groups may choose to dissolve interest-based labels, so that the “label” boils down to people who care about management. This system does not always work for tribes, who have been treated differently historically, but for some people it works well.

## Resources

- [Siuslaw Collaborative webpage](#)
- [Western Klamath Restoration Partnership – history and plan](#)
- [Western Klamath Restoration Partnership – Facebook Page with history and updates](#)
- [Panhandle Forest Collaborative webpage](#)
- William Butler article of CFLRPs: “Responding to a policy mandate to collaborate: structuring collaboration in the Collaborative Forest Landscape Restoration Program,” *Journal of Environmental Planning and Management*. Volume 59, Issue 6, 2016. Pages 1054-1072



## Collaboration & Engagement | Launching and Nurturing a Collaborative Group – Colorado Front Range Roundtable

### Key Topics: Collaborative Process

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#### Speakers

- **Megan Davis**, Policy Analyst, Boulder County
- **Sara Mayben**, Renewable Resources Staff Officer, Region 2, USFS
- **Mike Lester**, State Forester & Director, Colorado State Forest Service
- **Heather Bergman**, Facilitator/President, Peak Facilitation Group

#### Overview

This session was a panel discussion of the Front Range Roundtable's story. Conversation topics included how the group formed, important considerations made by members while launching and nurturing the effort, the decision-making and governance structure, and thoughts on the group's future.

#### About the Front Range Roundtable

The Front Range Roundtable (FRR) was established in 2004 with the goal of reducing wildfire risk to forest-based communities and restoring forest health across Colorado's ten Front Range counties. The forerunner to the FRR was the Front Range Fuels Treatment Partnership, an effort organized by the U.S. Forest Service's Regional Forester to increase coordination of hazardous fuel reduction efforts across state and federal agencies after Colorado's 2002 record wildfire season, which included the 138,000 acre Hayman Fire.

When the FRR began meeting, the group members identified four priority issues - community engagement, ecology, economics and policy - and established working groups to address these issues. These working groups developed the scientific basis and social consensus that led to the 2006 report, *Living with Fire: Protecting Communities and Restoring Forests*. This vision document identified a 1.5 million acre area for treatment on Colorado's Front Range. The Living with Fire document allowed the Front Range Roundtable to focus its efforts on promoting treatments on these identified areas and to pursue additional policy and economic solutions to increase treatments.

The Front Range Collaborative Forest Landscape Restoration (FR-CFLR) project proposal was one of the first ten in the U.S. to be selected in Fall 2010. The objective of the FR-CFLR project is to reduce risks by focusing forest treatments in areas where community protection, watershed restoration, and habitat improvement goals can be achieved in conjunction with forest restoration objectives. The FR-CFLR project intends to concurrently create socioeconomic benefits through job creation, increased wood utilization, and increased levels of collaboration.

#### Lessons

Each panelist discussed their involvement in the group and what they've learned along the way. A number of lessons and keys to success emerged in the discussion. More information on group governance and policies can be found on their webpage, listed below under Resources.

- Develop a detailed mission and vision, including a map of priorities and accomplishments.
- Be bold and ambitious, but realistic.
- Shifts in membership can create chaos; develop protocols to make transitions smoother.
- Collaboration is messy; be prepared for conflict and develop an issue resolution policy.



- In the face of conflicting science and opinions, focus on experimenting and monitoring to create greater consensus on an issue.
- Field trips are a good qualitative evaluation process.
- Take the time to listen. This means working to understand why each member has come to the table. In this process, listen for and identify collective values.
- Build relationships and trust between members and partners.
- Adapt the collaborative for who shows up.
- Hire a facilitator who has the skills you need at the time.
- Focus on where the group has agreement first and then focus on areas of disagreement.

### Questions to the Panel

- What kind of facilitator do I need to hire – what are the qualities and skillsets to look for?
  - It depends on what you need at a given time. Ask your group what they think they need.
- What is the distinction between the “members” and the “public” in the FRR?
  - The group is open to all, but to be a member a person must be willing to actively participate.
- How did the Front Range Long Term Stewardship Contract integrate with the CFLRP?
  - The Stewardship Contract was a means for accomplishing the treatments under the CFLRP.
- How do you create a well-balanced collaborative group?
  - Make meetings interesting and exciting.
  - Invite potential members to come speak to the group.
  - Seize opportunities when the time is right.
- How does the Forest Service participate in this process, and does it cause concern re: FACA (Federal Advisory Committee Act)?
  - Compliance with FACA is not difficult. It is good to remember to keep the group open to the public, allow feedback on materials created, keep notes and processes transparent.
  - The Forest Service usually determines where to draw the line on the level of participation on its own. Members do not draw the line for the Forest Service.

### Resources

- [Roundtable webpage, including group information and publications](#)





## Collaboration & Engagement | Stories from the Front Lines: Nurturing a Collaborative Effort

### Key Topics: Cross-Boundary Partnership, Collaborative Process

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#### Speakers

- **Darrin Kelly**, Partnership Coordinator, Monongahela National Forest, USFS
- **Gary Berti**, Director, Eastern Home Rivers Initiative, Trout Unlimited
- **Keith Fisher**, Director of Conservation Programs, West Virginia, The Nature Conservancy
- **Todd Miller**, Director of Aquatic Restoration, Canaan Valley Institute

#### Overview

This session covered the story of the West Virginia Restoration Venture (WVRV). Presenters shared their experience in the project, including how the stakeholders came together, important considerations made by members while launching and nurturing the effort, the decision-making structure, the role of the Forest Service, overcoming challenges, and thoughts on the group's future.

#### Origins of the Project

In 2014, three U.S. Forest Service leaders in the Northeast and Midwest along with the President of the Northeastern Area Association of State Foresters signed a statement of intent to collaborate across land ownership and organizational boundaries on conservation projects. That same year, the Forest Service and the Natural Resources Conservation Service (NRCS) began funding projects through the Joint Chiefs' Landscape Restoration Partnership. The West Virginia Restoration Venture (WVRV) was one of the first projects funded through this initiative, and has successfully implemented a variety of land management activities across ownership boundaries.

The West Virginia Restoration Venture (WVRV) provided the opportunity for the Monongahela National Forest to expand ongoing collaborative work with Natural Resources Conservation Service (NRCS) to leverage a strong network of existing partnerships to maximize landscape-scale restoration projects. NRCS and the Forest Service are working with Trout Unlimited (TU), The Nature Conservancy (TNC), Canaan Valley Institute (CVI), the West Virginia Division of Forestry (DOF), and other organizations to expand their efforts to restore ecosystems. The partners are pursuing restoration activities that address habitat connectivity, soil health, climate resiliency, carbon sequestration, water quality, at-risk species habitat, early successional habitat, wetlands, aquatic habitat, and watersheds. The WVRV is working to build a stronger restoration economy, both by providing economic opportunities and engaging local communities in learning about all aspects of their local forests and the restoration goals.

This project has been a culmination of partnerships that have been building over the last 10 years. As each organization investigated landscape-scale ecological issues, especially the spread of invasive species and the restoration of watersheds, they began to see the need to coordinate restoration efforts across boundaries and jurisdictions. Their partnerships achieved new levels of cohesion and coordination as they focused on learning together through experimental management and supported each other with on-the-ground projects.

#### Project Activity

Specific descriptions of project activities can be found in the resources below, especially in "WVRV Restoration Success Stories." Many of the same initiatives are carried out throughout the forest, and often by different partner organizations. Projects include:



- Red Spruce planting throughout the forest to restore former red spruce ecosystems.
- Restoration of heavily timbered and coal-mined lands, including deep ripping of compacted soils, wetland creation, and native vegetation planting, especially red spruce.
- Rangeland Improvements, including fencing riparian areas to decrease erosion and reclaiming overgrown pasture land. Reclaimed pastures are managed to create a variety of early successional habitats that blend gradually into forested areas.
- Native tree and shrub planting along deforested riparian areas. Efforts focus on providing stream shading and stream bank stabilization, and restoring cold-water habitats for native brook trout.
- Adding large woody material (LWM) to streams and riparian areas to mimic ecosystem processes that naturally create and sustain healthy aquatic habitats.
- Restructuring road stream crossings to improve connectivity for aquatic organism passage.
- Road decommissioning and restoration of hillslope contours.

## Lessons

- Successes have been a result of:
  - Planning toward clear landscape-scale goals, particularly for high-elevation spruce forests.
  - Incorporating science and stakeholders into ongoing decision-making.
  - A high level of trust and cooperation between partners.
  - The flexibility to work under agreements in which each partner carries out its organizational mission, rather than only partnering through individual project contracts.
  - Creative problem-solving through partnerships based on an understanding of strengths and weaknesses.
- The partners identify the WVRV as a landscape-scale partnership, not a collaborative restoration effort.
- Capacity of the partners has grown over time by hiring great staff, using sound science, and providing great service.

## Resources

- [Joint Chiefs' Landscape Restoration Partnership Project, FY 2015 Progress Report](#)
- [WVRV Restoration Success Stories](#)
- [The Central Appalachian Spruce Restoration Initiative \(CASRI\), Year-End Review](#)
- [The Potomac Highlands Cooperative Weed and Pest Management Area \(CWPMA\), Year-End Review](#)



## Collaboration & Engagement | Tools to Collaborate Successfully & Build Capacity

### Key Topics: Collaborative Process

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#### Speakers

- **Emily Olsen**, Conservation Connect Associate, National Forest Foundation
- **Luna Latimer**, Director, Mid-Klamath Watershed Council

#### Overview

Speakers in this session shared tools and resources available to aid collaborative groups and build collaborative capacity. Through on-the-ground examples from the Mid-Klamath Watershed Council and National Forest Foundation, participants discussed how to work through capacity-related challenges.

#### Emily Olsen – NFF Tools to Build Collaborative Capacity

The National Forest Foundation (NFF) Conservation Connect program is a learning network for collaboration. Conservation Connect staff develop and share best practices, lessons, and other resources to build capacity in collaborative groups and community-based organizations. For example, tools include evaluation surveys to measure success, best practices to deal with transitions in the Forest Service and collaborative groups, examples of groups building credibility in their communities, and tips for collaborating before, during, and after the NEPA process. The NFF is always looking for new tools and examples as well. If your group or organization has created something innovative or new, the NFF would like to spread the word.

#### Lessons

- It's important to re-evaluate collaborative efforts often to measure success, identify priorities and gaps, and plan next steps.
- Embrace transitions in the Forest Service and collaborative groups. You'll set yourself up for success if you prepare for an assume change. Use in-person meetings, as well as memos and guides, to transfer institutional knowledge and rebuild relationships.
- There are several document templates (i.e., memos and guides) to aid staff and collaborators during transitions; however, in-person meetings are perhaps the most important tool to re-establish relationships after transitions.
- Presenting to and sharing project updates with local community organizations (Rotary Club, County Commissioners, School Board, etc.) can help build your organization's credibility.
- With good sideboards, pre-NEPA collaboration is a key element of collaborative project development.

#### Luna Latimer – Fire-Related Learning and Capacity in the Klamath River Watershed

The Mid-Klamath Watershed Council has been working to restore the threatened Klamath River in Northern California and the upslope habitats upon which the river depends. The Council manages a variety of programs that also build community capacity, including a fire and fuels program. Additionally, the Western Klamath Restoration Partnership is a new initiative designed to mitigate wildfire threats in the Watershed and improve understanding about fire. The fire and fuels program, part of the Fire Learning Network, focuses on collaborative capacity at a landscape level. Landscape-level work is critical, especially the Mid-Klamath Watershed, where 98% of the land is federally owned. As part of this work, the Council engages community members in restoration efforts and landscape planning, particularly those with a fire component. The Council provides training opportunities for local citizens to participate in prescribed fire activities with the Forest Service. Through training, community members receive the same fire qualifications as federal employees, adding valued capacity. Through the training



and collaboration, local citizens understand the economic, environmental, and health reasons why prescribed fire and fire mitigation is important.

### Lessons

- Prescribed burning can be contentious, with collaboration and local empowerment, understanding of the need for prescribed burning may grow, and eventually be carried out with local support.
- Shared learning and outside facilitation paves the way for better relationships and “honorable acts” within a local community. Honorable acts may create, for example, fire-related job opportunities and support for prescribed fire.

### Resources

- [National Forest Foundation’s Tools Search and Learning Topics websites](#)
- NFF tools shared and discussed during this session:
  - [Factors Influencing Successful Collaboration](#)
  - [Best Practice: Building Local Support & Credibility](#)
  - [Dealing with Transitions](#) (peer learning session with discussion and sharing of multiple tools)
  - [A Roadmap for Collaboration Before, During and After the NEPA Process](#)
- [Mid-Klamath Restoration Partnership](#)
- [2015 Pocket Guide – Wisdom from the Field: Principles and Best Practices of the Fire Learning Network](#)



## Collaboration & Engagement | Unpacking Collaboration – What Time Is the Right Time, and What Are the Sideboards?

### Key Topics: Collaborative Process

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#### Speakers

- **Mike Anderson**, Senior Policy Analyst, The Wilderness Society
- **Tera Little**, Team Leader, R1 Farm Bill Strike Team, U.S. Forest Service
- **Connie Lewis**, Senior Partner, Meridian Institute
- **Bob Christensen**, Sustainable Southeast Partnership

#### Overview

Speakers in this session shed light on the legal and policy context for collaboration. Speakers also shared insights and experiences around the question of collaboration “ripeness,” and knowing when collaboration is the right tool to address conflict.

#### Mike Anderson – Collaboration in Public Law

Collaboration has become an important, and sometimes controversial, way of doing business in many national forests. Starting as a bottom-up solution to legal and political stalemates, it is appearing in federal legislation and regulations. Congress has sometimes made collaboration a prerequisite to qualify for special funding and for less demanding environmental analysis, such as in the 2009 Forest Landscape Restoration Act and the 2014 Farm Bill. A number of authorities support and impact collaboration. A goal of the 2012 Planning Rule is to make the national forest planning process more collaborative, and the 2012 planning rule encourages collaboration “where feasible and appropriate,” using the Council on Environmental Quality spectrum of public engagement.

While the Forest Service has broad discretion to develop and participate in collaborative processes, there are notable legal sideboards. In particular, all federal environmental laws still apply and the Forest Service makes all final land management decisions. Collaborative groups and processes generally need to be diverse, balanced, transparent, and non-exclusive. The Federal Advisory Committee Act’s (FACA) requirements apply to collaborative groups that are established, managed, or controlled by the Forest Service and give collective advice to the agency. However, the Forest Service can participate in and legally seek advice and recommendations from collaborative groups that are independent of the agency. Key to complying with FACA is how the group is “established or utilized.”

#### Tera Little – Collaboration and the 2014 Farm Bill

The 2014 Farm Bill gave the Forest Service a new categorical exclusion (CE) to use to reduce the risk or extent of, or increase resilience to, insect or disease infestations. However, use of the CE came with a requirement to develop and implement projects using a collaborative process that is transparent, non-exclusive and includes multiple interested persons representing diverse interests. Many want to know what the “bar” is for meeting these requirements and if it can be done without a formal collaborative group. The 2014 Farm Bill allows the use of NEPA (National Environmental Policy Act) Categorical Exclusion for certain projects when a collaborative process is used. The Forest Service Washington Office also developed standards to define a collaborative process.

It is important to focus on “collaborative” as a process, rather than a thing (group). The Forest Service has recently applied best practices for developing and sustaining a collaborative *process* that meets the requirements specified in the 2014 Farm Bill to Farm Bill CE projects in the Northern Region.



### Best practices for collaborative processes (Based on the Jasper Mountain Project)

- Establish roles, expectations, and sideboards up front
- Create meaningful engagement through field tours and in-depth discussion at workshops
- Provide written background information for review as “homework” for collaborative members
- Listen carefully
- Provide an explanation of how input was or was not used

### **Connie Lewis – Tongass Advisory Committee**

It is important to determine when the timing is right (or not) for collaboration. Using the Tongass Advisory Committee (TAC) as one example, there are advantages and downsides to an advisory committee when contrasted with an independently formed collaborative. The Secretary of Agriculture mandated that the Tongass move from old growth to young growth forestry, and established a Federal Advisory Committee to provide advice throughout this process. The scope and sideboards were well defined and somewhat narrow, which were very important aspects of the TAC’s success. The right people were also at the table, including bridge builders. Sideboards can make or break a collaborative – these can be effective, or not effective – depending on the situation. Diversity within and between collaborative efforts brings richness. Finally, timing is important. Key indicators that a situation is ripe for collaboration:

- People care about the issue.
- Agency is ready and receptive to collaborative input.
- The set of personalities is able to work together.
- Resources are available to support the process.
- Need for some kind of organizing spark

### **Bob Christensen – Tongass Advisory Committee**

Bob has been involved with the TAC, and with development of the collaborative stewardship group that has emerged as part of the Hoonah Native Forest Partnership (HNFP). In terms of ripeness, collaboration is the right tool when stakeholders realize that conflict will not lead to the desired endpoint. Collaboration also takes a lot of time, which may not in peoples’ work plans, but also provides *more* of everything – brainpower, heart, money, resources, etc. Make sure YOU are ready for a collaborative before you engage.

### **Lessons**

*How can we avoid the NEPA and collaboration “black hole”?* Collaboration doesn’t need to stop with NEPA; the CEQ Collaboration in NEPA handbook clearly explains that collaboration can continue within the NEPA process. There are examples for how to provide feedback and information to during the NEPA process, creating a continuous and transparent process.

- *How can we improve the Endangered Species Act Section 7 consultation process?* Forest Service staff can engage the U.S. Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA) Fisheries as part of the collaborative process. In Region I, the Forest Service has been prioritizing the consultation process with USFWS and state agencies to make the process go smoother
- *How do we deal with agency staff turnover and how it affects collaboratives?* There needs to be a smoother handoff process between agency staff members. There are also innovations occurring; for example, Region I is developing Farm Bill “strike teams” to support more efficient and consistent NEPA analysis.
- *Should collaborations have a lifespan?* Having a defined lifespan can be beneficial in cases such as the Tongass Advisory Committee. In other situations, having an indefinite lifespan is important. Collaboratives often shift and evolve; it’s difficult to intentionally plan how that evolution occurs.



## Resources

- [2014 Farm Bill Collaboration Resource Document](#)
- [A Citizen's Guide to Forest Planning](#)
- [Tongass Advisory Committee](#)





## Implementation | Connecting Planning to Effective Implementation

### Key Topics: Modeling and GIS

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#### Speakers

- **Jeffrey Underhill**, Regional Silviculturist, USDA Forest Service Rocky Mountain Region
- **Travis Wooley**, Forest Ecologist, The Nature Conservancy
- **Sandra Mack**, Blackfoot-Swan Landscape Restoration Project Team Leader, Northern Region, USFS

#### Overview

This session focused on strategies for increasing efficiency in restoration implementation. Specifically, presenters addressed the benefits and concerns of utilizing Designation by Prescription to guide restoration work.

#### Jeffrey Underhill – Methods of Designation

Jeffrey Underhill described implementation methods that have been utilized for the Colorado Front Range Initiative on the Pike National Forest. The problem Underhill's project has faced is how to implement complex and diverse treatment goals most effectively across a large landscape. Restoration treatments in dry forest types are often focused on the development of complex structures through spatially heterogeneous treatments.

*Individual Tree Marking (ITM)* is a method of designating specific trees to be left that has the highest level of accuracy and accountability. It is not practical and often very costly to implement this strategy over large landscapes.

One newer implementation method is *Designation by Prescription (DxP)*. This is a method of designating trees for removal by describing the desired end result of the treatment; for example, retain 60 percent basal area.

- **Benefits** – This method is far more efficient and saves a great deal of time and money that would be used on the preparatory work of designating individual trees for removal.
- **Concerns**
  - This method relies heavily on subjective decisions made by the contractor. If a contractor is experienced with the landscape and familiar with the project goals, this may be a good option. But limited experience and high turnover may mean contractors lack the capacity to implement the project consistently with less specific guidance.
  - The more complex a treatment goal is, the less likely a designation by prescription will offer specific enough guidance.

In projects with complex restoration goals there has been success in using DxP together with ITM only in the highest priority areas. By identifying areas with highly complex structures, ITM can be utilized where it provides the most important guidance.

#### Lessons

- There is no “one size fits all” implementation method
- Rule of thumb: Designation by Prescription may be too complicated to implement with more than three key prescription criteria.
- An emphasis on heterogeneity should be at the project / watershed / landscape scales.



- Prioritize areas where highly-complex structures are desirable and implementation methods may require more time and money.
- Heterogeneity at the stand scale is a process that may take multiple entries. First entries often reduce structural complexity in order to shift species composition and reduce densities

### **Travis Woolley – Digital Restoration on the Four Forests Restoration Initiative, Arizona**

Travis Woolley presented on efforts of The Nature Conservancy, working alongside collaborative stakeholder groups, to increase the pace and scale of implementing forest restoration across four of Arizona's National Forests. Like the restoration projects in Colorado, the Forest Service in Arizona is considering the benefits of *Designation by Prescription* (DxP) over the lengthy and costly method of *Individual Tree Marking* (ITM). DxP is clearly cheaper and more efficient, but it has the downsides of decreased reliability and accountability. One method of addressing issues with DxP while keeping costs low and increasing both efficiency and accuracy is through the use of portable GIS mapping technologies.

The Nature Conservancy has started using GIS mapping applications on portable devices that allow project planners, contractors, and monitors to share detailed information about a landscape and the restoration process. Rather than marking trees by hand, a project plan can be mapped digitally over a landscape, with specific instructions attached to different locations. Operators have access to this detailed project map while on the job. Moreover, operators can seamlessly document their work, including maps of each tree harvested. This technology has already increased efficiency, lowered preparation costs, and increased trust and communication between planners and contractors.

### **Sandrah Mack – Southwest Crown of the Continent**

Sandy Mack discussed the process the Forest Service conducts between completion of the NEPA analysis and implementation, which is a question collaborative groups sometimes ask. Collaboratives often spend a great deal of time in the planning phase, creating a vision for what a project will achieve and developing a description of objectives and treatments. Then there is the feeling that post-NEPA and pre-implementation, the project goes into a “black box” and implementation doesn't necessarily reflect what the collaborative envisioned. Sandy recommended asking clarifying questions to ensure a common understanding of the project and the plans.

### **Resources**

- [Digital Restoration Guide - by the Nature Conservancy](#)



## Implementation | Cross Boundary Implementation: All Lands Approaches

### Key Topics: Cross-Boundary Partnership

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#### Speakers

- **Alan Clark**, Watershed Program Director, Utah Department of Natural Resources
- **Karl Welch**, Timber Program Manager, Chequamegon-Nicolet National Forest

#### Overview

This session reviewed two examples of cross-boundary, interagency projects. Working across boundaries in ways that involve multiple parties can greatly increase project capacity and better achieve ecological goals across a landscape.

#### **Alan Clark – Working Across Boundaries in Utah – Watershed Restoration Initiative**

Landscape-level restoration, including watershed improvement and post-fire rehabilitation, often requires projects that cross boundaries between state, federal, tribal, and private land. The Utah Watershed Restoration Initiative (WRI) was created to build partnerships, leverage funding, and unify restoration efforts across the state.

WRI achieves cross-boundary implementation by involving partners from the very beginning. WRI is a bottom-up initiative where project planning occurs at a local level. Five regional teams elect their own leaders, establish focus areas, score and rank project proposals, and assist their members in implementing projects.

Besides working across boundaries, these partnerships allow for increased funding for projects. The core funding for WRI comes from an appropriation by the Utah Legislature to the Department of Natural Resources (DNR), but this is matched many times over by contributions by partners. Since its inception, WRI partners (now 122 partners) have completed over 1,450 projects, treating over 1.22 million acres of watersheds with an investment by all partners of over \$169 million. Many projects completed by the partnership are cross-ownership boundary, particularly when it comes to fire rehabilitation. The Forest Service has been involved in 178 completed projects through WRI as a funder, landowner, or project manager through 2015.

#### **Karl Welch – Good Neighbor Agreement between Wisconsin Department of Natural Resources (DNR) and Chequamegon-Nicolet National Forest (CNNF)**

The Good Neighbor Authority provides the opportunity to work across jurisdictional boundaries and manage forestlands in a mixed ownership setting. It can leverage state resources to increase capacity for work on national forest lands.

Before signing a Good Neighbor agreement the CNNF was short of stated objectives and desired future conditions in its 2004 forest plan. As of October, 2015 the forest had National Environmental Policy Act (NEPA) analysis completed for approximately 320 MMBF of volume ready for implementation, but with little prospect of increasing implementation schedules. The Good Neighbor agreement with Wisconsin's DNR allowed the CNNF to greatly increase capacity to fulfill its forest plan objectives while also offering great benefits to the state agency and the local economy.

#### Lessons from Panel Discussion

- All parties need to be empowered by their agency to make decisions.



- Be prepared to clearly communicate, be willing to listen, and negotiate in good faith to achieve mutually desired outcomes.
- Internal communications describing what is expected and why (as well as what is NOT expected) need to occur early and often to avoid confusion and the spread of misinformation.
- Large cross-boundary partnerships can create an incredible amount of administrative work. Here are some ways to streamline this work:
  - Determine which partners are best at different tasks, i.e. federal agencies may be able to more quickly leverage funding; state agencies may be skilled at writing contracts, etc.
  - Keep NEPA simpler (possibly) by reviewing large-area projects all at once, rather than repeating the NEPA process on very similar smaller projects throughout the forest.
  - When possible, empower local and regional authorities to make decisions.

## Resources

- [Watershed Restoration Initiative](#)
- [Good Neighbor Authority introduction](#)
- [Good Neighbor Authority peer learning session recordings](#)



## Implementation | Innovative Funding Mechanisms for Restoration

### Key Topics: Cross-Boundary Partnership

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#### Speakers

- **Chad Davis**, Senior Policy Analyst, Oregon Department of Forestry
- **Dana Coelho**, Program Manager, Urban & Community Forestry, Region 2, U.S. Forest Service
- **Claire Harper**, Program Manager, Water Partnerships & Forest Legacy Programs, Region 2, U.S. Forest Service
- **Marcus Selig**, Director, Southern Rockies Region, National Forest Foundation

#### Overview

This session provided examples of innovative approaches to funding the implementation of restoration projects.

#### **Chad Davis – Oregon’s Federal Forest Health Program**

In 2013, the Oregon State Legislature took an innovative step to allocate state resources to increase the pace, scale, and quality of forest restoration on Oregon’s federal forests. This initial investment was included in the Oregon Department of Forestry’s 2015 budget as the Federal Forest Health Program (FFH). The program was allocated \$5 million for funding projects from 2015-2017.

The FFH Program provides grants and technical assistance for the state’s 25 place-based collaborative groups and partners with the U.S. Forest Service and Bureau of Land Management to complete data collection for environmental analysis and conduct pre-sale activities to increase the pace of implementation.

The underlying premise of state funds is to evaluate new business practices to find efficiencies while meeting existing environmental laws and procedures. The efforts of the FFH Program have positioned Oregon well to springboard into implementation with the Good Neighbor Authority (GNA).

#### **Dana Coelho and Claire Harper – Collaborative Fundraising on the South Platte Watershed, Colorado**

The Rocky Mountain Region is working collaboratively with partners and communities in the South Platte watershed. This watershed supplies approximately 80% of the drinking water to the 2.5 million residents of the Denver metropolitan area and comprises national forest, state, private, and municipal/county owned landscapes. The impetus for innovative partnerships came from wildfires burning close to Denver’s drinking water reservoir and the consequent flooding. The flooding deposited forty years’ worth of sediment into the reservoir.

Two significant partnership groups have created funding opportunities for restoration work on the Upper Platte watershed, the Coalition for the Upper South Platte and the South Platte Urban Waters Partnership. With many overlapping partners, these groups encompass more than 60 organizations, including government agencies, businesses, and national, regional, and local non-profit organizations. Direct partnerships with water providers created some of this funding. Water rates in the Denver area were slightly raised to support many projects.

These partnership groups were pivotal in reaching out to raise funds for project implementation. Showing the importance of watershed restoration for a sustainable water supply motivated private funding. The National Forest Foundation and The Nature Conservancy also helped secure funding.



## **Marcus Selig – The Northern Arizona Forest Fund**

Developed by National Forest Foundation, in partnership with the Salt River Project, the Northern Arizona Forest Fund (NAFF) provides an easy way for businesses and residents of Arizona to invest in the lands and watersheds they depend on. Like the South Platte Watershed, the Northern Arizona Forest Fund stresses the importance of forest health and the need for forest restoration in order to keep water clean and available for residents and businesses. With declining forest health and tighter federal budgets, local partnerships and active stewardship are more critical than ever.

The NAFF's projects reduce wildfire risk, improve streams and wetlands, enhance wildlife habitat, restore native plants, and limit erosion and sediment into Arizona streams, rivers, and reservoirs. The NAFF's projects also create jobs and provide volunteer opportunities in local communities through partnerships with local conservation and stewardship groups.

The NAFF works in four steps:

- NAFF partners identify priority projects.
- Downstream beneficiaries invest in projects. Many corporations donate, but also individuals, cities, and other organizations.
- The NFF and partners organize project implementation. This implementation also provides opportunities for volunteerism and in-kind contributions.
- NFF coordinates monitoring and reports monitoring findings and accomplishments to partners and supporters.

## **Lessons**

- The Urban Waters Federal Partnership is not taking applications any longer. The EPA has a small waters grant program. There is an Urban Waters Network (listed in Resources below) to offer lessons learned and advice.
- An avoided cost analysis wasn't necessary to pitch the Northern Arizona Forest Fund to businesses. There are examples where the cost of post-fire work is clear from past fires.
- Increasing the water rates for Denver water users required outreach and public communication, but not a lot of process. The board approved it without a public process and it was part of a larger rate increase.
- The Northern Arizona Forest Fund is still very early in its lifespan, and will hopefully continue indefinitely. It is still early for the municipalities. Monitoring and communication is key to inform and increase the support. *Participants also asked exploratory questions about the State of Arizona and Forest Service potentially providing matching funds.*

## **Resources**

- [Oregon's Federal Forest Health Program – 2015 summary document](#)
- [Northern Arizona Forest Fund – NFF webpage](#)
- [Northern Arizona Forest Fund – informational video and webpage](#)
- [Northern Arizona Forest Fund – Tap to Top video promotion](#)
- [Coalition for the Upper South Platte webpage](#)
- [South Platte Urban Waters Partnership webpage](#)
- [Urban Waters Learning Network](#)



## Implementation | Removing Biomass: Utilization and Market Opportunities

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### Speakers

- **Dylan Kruse**, Policy Director, Sustainable Northwest
- **Brad Worsley**, President, Novo Power
- **David Schmidt**, Owner, Integrated Biomass

### Overview

This session reviewed the benefits and challenges of emerging biomass technologies and markets. Partnerships with forest restoration projects could be an important benefit for emerging businesses and the U.S. Forest Service, as the raw material for woody biomass is produced from the small trees and forest fuels removed in most restoration projects.

### Dylan Kruse – Woody Biomass Energy Production

“Woody Biomass” is made from leftovers and byproducts from various processes. It includes branches, treetops, and slash left over from logging, as well as bark, sawdust, chips and residuals from sawmills. It also includes the products of forest thinning, the small trees and forest floor fuels that are removed in forest restoration and fire treatments. Most mill residuals are sold into a market for products such as paper and particleboard and have long been used to help power paper mills. Other forms of woody biomass have traditionally had little value. Slash and thinnings are often piled and burned in the woods. However, with the right infrastructure, biomass can be used for various products, including heating and energy production. Woody biomass is compressed into pellets or wood “bricks” that can be efficiently transported, stored, and burned.

### Dylan Kruse – Biomass Policies

The plummeting costs of oil and gas in the past two years have significantly affected the economics of domestic wood biomass energy production. However, the need to develop markets for small diameter biomass and forest products residuals is necessary to sustain active management and economic development in rural communities. To address this discrepancy, state and federal legislatures and agencies are exploring and implementing a variety of policy tools to develop wood bioenergy markets and enhance competitiveness with fossil fuels and other renewable energy sources.

The cost of creating energy from biomass is sometimes competitive with fossil fuels, and sometimes not. There are many variables and obstacles. To overcome them, government can continue to encourage and support the businesses and communities that are building these young markets. With time, they will learn to operate more efficiently, and the markets can begin to sustain themselves.

The biomass energy production industry has opportunities to grow if certain policies are pursued, including:

- Continued pursuit of distributed energy generation; that is, a network of smaller local power plants rather than large, concentrated sources of power.
- Policies to support utilities’ purchase of biomass power, especially from existing in-state plants that are not running at full capacity.
- Policies that recognize and monetize the public benefits of local biomass-fueled electricity, such as improved air quality and reduced fire risk.
- Streamlined permitting processes and better education of state and local permitting officials.





### **Brad Worsley – Novo BioPower, Arizona**

Arizona has the largest ponderosa pine forest in the country. Due to a number of causes, this forest has seen catastrophic wildfires over the last 15 years. This imminent wildfire danger has led to the largest restoration project in the nation (the Four Forests Restoration Initiative). Novo Power helps mitigate fire danger by thinning stands for biomass. Removing biomass from the forest provides many of the same benefits as prescribed low-intensity fires. Moreover, when the removed biomass is burned in a power plant, rather than in prescribed or natural fires, it produces less atmospheric carbon. Biomass power plants use scrubbers and bag systems to reduce carbon emissions. In effect, producing energy with biomass duplicates the forest management practices of thinning forests while reducing the overall carbon emissions that would result from forest burning. Novo Power's forest thinning has saved the Forest Service more than \$1-million per year that would have been spent on forest thinning projects.

### **David Schmidt – Integrated Biomass Resources, Oregon**

Using small logs, as well as logging slash from private-land timber harvests, Integrated Biomass Resources started making products they could sell: firewood, compressed logs to be burned in woodstoves, posts and poles for fencing, and landscaping timbers. These are existing markets that can be accessed by those who collect and process forest biomass. Wallowa Resources and Integrated Biomass Resources have also helped create a new market for coarse wood fuel, known as "hog fuel," to heat a school and other buildings in the town of Enterprise. With the help of federal and state grants, Integrated Biomass Resources has constructed a small 100-kilowatt cogeneration plant to produce electricity to run the campus. Whatever material cannot be used to make the company's other products can be burned for heat and electricity. Nothing is wasted, and the campus powers itself.

## **Discussion about the Benefits of Biomass Energy Production**

### **Cleaner Energy**

- Yes, biomass emits pollutants like any other source of fuel, and at a lower volume than some sources (i.e., coal, wood stoves), though not as low others (i.e., natural gas). However, there is debate about whether biomass energy actually reduces net carbon emissions. Arguably, by removing biomass from the forest and burning it in controlled settings that limit emissions we are lowering the overall amount of carbon that would otherwise be released through prescribed burning and wildland fire.

### **Baseline Energy Production**

- Other renewable energy sources (solar and wind) offer intermittent production that fluctuates depending on conditions and often requires energy storage to supplement times of low production. Biomass offers reliable baseline energy production.

### **Local and Renewable**

- Woody Biomass produces affordable, local, renewable energy and other products of value by using material that would otherwise be wasted.
- It can stimulate rural economies, providing jobs and keeping dollars in the community by collecting, processing, and using the resource locally.
- The process supports needed forest restoration projects by offsetting some of the costs and using market forces to leverage the federal dollars spent on forest health to bring broader benefits to the community.

## **Lessons**

- Scaling – biomass markets for energy and other products are hard to predict. The success of the biomass business will depend upon scaling production to a size that matches market demand.



- Support – Public and political support and partnership are critical for this new market. Our current centralized energy grid is as much a political creation as a market-driven one. Renewable energy production has clear advantages over the current system. Still, it requires an immense amount of public and political support to re-organize such an entrenched system.
- Transportation – The cost of getting biomass out of the woods and trucking it even as little as 40 miles can push the cost of producing electricity higher than the price utilities can pay for it. This is a problem of scale and infrastructure. Energy production will become more competitive as it is scaled up, its infrastructure is improved, and policies incentivize more sustainable energy production.

## Resources

- [Novo Power website](#)
- [Integrated Biomass Resources website](#)
- [Infographic of Biomass Energy production by Sustainable Northwest](#)
- [Infographic of Thermal Biomass technology by Sustainable Northwest](#)
- [Report by Oregon Forest Resources Institute, \*Powered by Oregon – Woody Biomass Offers Potential for Heat, Electricity and Fuel\*](#)



## Implementation | Using Stewardship Authority to Advance Restoration

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### Speakers

- **Mae Lee Hafer**, Stewardship Coordinator for Regions 8 and 9, USFS
- **Rebecca Barnard**, National Forestry Programs Manager, National Wild Turkey Federation
- **James Mordica**, Timber Management Assistant & Region 8 CFLR Coordinator, USFS

### Overview

This session introduced Stewardship Contracting and Agreements and offered two successful examples. The resources included at the end of this document provide more information on Stewardship processes.

### What is Stewardship Authority?

Stewardship Authority is a strategy of natural resource management that seeks to promote a closer working relationship with local communities in a broad range of activities that improve land conditions. Stewardship projects not only strive to shift the focus of federal forest and rangeland management towards a desired future resource condition ecologically, but they are also a means for federal agencies to contribute to the development of sustainable rural communities, increase public collaboration in project planning and implementation, and provide a continuing source of local income and employment.

The seven land management goals of Stewardship:

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 habitat, and
7. Control of noxious and exotic weeds and reestablishing native plant species.

There are a number of factors that suggest when stewardship authority is the right tool to use, including,

- Ability to bundle several contracts into one and treat at a larger landscape scale
- Ability to trade goods for services
- Contract terms of up to 10 years
- Up-front collaboration with government (Federal, State, local), Tribal governments, local communities, non-governmental organizations, and interested groups or individuals
- There are organizations interested in completing restoration treatments through a mutually beneficial agreement.

### Two Stewardship Examples

#### 1. The National Wild Turkey Federation (NWTF)

The NWTF was an early adopter of the stewardship agreement tool. They have partnered on more than 85 projects nationally. Below are some of the benefits they have found to using stewardship agreements

Overall, stewardship authority:



- Enhances the pace, scope, adaptability, and financial feasibility of restoration projects
- Harnesses collaboratives to build trust and community support to accomplish stewardship work

#### Community Involvement

- The NWTF has partnered with local communities to plan and implement work in National Forests. This type of local management fosters local pride and care for public lands.
- The stewardship authority can directly enlist volunteer labor and in-kind donations, decreasing cash costs while increasing local involvement.

#### Increased Funding

- Projects can combine the timber value, Forest Service funds, and partner match to leverage more funds for restoration work.

#### Increased Efficiency and Adaptability

- The stewardship authority administers both timber and service work, which increases project efficiency and coherence.
- Coupling timber and service work under one agreement also adds administrative efficiencies for Forest Service.
- Timber money can be used outside of sale area boundary.
- Agreements can last 10 years, but they allow for annual modifications.

## 2. Camp Shelby, Mississippi

Camp Shelby is the largest state-owned military training site in the nation, much of which lies in the DeSoto National Forest. In a unique partnership between the Forest Service, the Mississippi National Guard, and The Nature Conservancy, an immense amount of restoration work has been carried out that has improved forest conditions and benefited rare species habitat, while also improving space and conditions for military training.

#### Lessons

- Partnerships with the Forest Service and other agencies is very important in making an all lands approach work.
- Stewardship is not the right tool everywhere.
- Partners cannot profit from stewardship contracts. This is a common misperception.
- Stewardship can enable significant leverage in funds and other resources.
- Stewardship contracts allow restoration projects to be flexible.

#### Resources

- [Stewardship Authority Overview, from NFF](#)
- [Forest Service presentation on Stewardship End Result Contracting](#)
- [Forest Service Handbook 2409.19 – Renewable Resources Handbook, Chapter 60 – Stewardship Contracting](#)



## Monitoring | Adaptive Management: Thinking Outside the Box

### Key Topics: Adaptive Management

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#### Speakers

- **Ayn Shlisky**, Eastside Restoration Team Lead, Umatilla National Forest, USFS
- **John Stanturf**, Senior Scientist, Southern Research Station, USFS
- **McRee Anderson**, Fire Restoration Program Director, The Nature Conservancy
- **Gregg Simonds**, Consultant and Ranch Manager, Open Range Consulting

#### Overview

The panel explored the benefits and barriers of Adaptive Management (AM). At its best, AM is a management process that can effectively change methods and schedules in response to conditions encountered during implementation. This level of flexibility in management requires a great deal of preparation, including a process of problem-framing, documentation and monitoring procedures, and assessment and evaluation processes. Below is a summary of common points made by the panel.

#### What is Adaptive Management?

- Not a single strategy – AM is about embracing learning. It is not a matter of applying one specific implementation strategy. Rather, adaptive management is about including robust monitoring and implementation flexibility into every strategy.
- Experimental – Effective AM treats each new management strategy as an experiment. This means designing the implementation process with very clear goals, measurable objectives, and relevant monitoring practices built-in throughout. However, AM is often more flexible than a strict research project. AM is about quickly responding to good feedback, not simply documenting it for research.

#### Collaboration in Adaptive Management

- Better monitoring through collaboration – In practice, AM is largely based on agency-specific monitoring systems and reporting required by policy, law, regulation, or funding availability (e.g., CFLRP monitoring). However, using facilitated, multi-party learning networks that go beyond requirements to focus on key ecological and social assumptions underlying project decisions can greatly improve adaptive management.
- Fostering Collaborative Monitoring – Robust monitoring will often require partnerships in order to increase monitoring capacity. To build these partnerships and create community buy-in for the monitoring process, it is important to show how monitoring results will be incorporated into management decisions. The more managers can show that decisions will be adaptive in response to monitoring, the more likely it will be for partners and the larger community to support the process. Field trips to project areas and quantified reports are great tools for communicating the AM process to partners.
- Better Relationships – In addition to a better monitoring process, engaging the community and partners in the learning process also brings stakeholders together in a shared understanding and shared purpose. This can help resolve planning issues and build trust.

#### Barriers to Adaptive Management

- Lack of resources or will to go beyond monitoring required by policy, law, or regulation
- Resistance to change or risk aversion
- Poor communication in the agency and with partners
- Lack of accountability for learning



- The size, budgeting processes, and culture of the agency makes it difficult to be flexible – change takes time, effort, and sometimes pushing back on agency norms.

### **General Advice brought up in the Discussion**

- Be Inclusive – Bring in diverse perspectives from everyone who cares about the project. Many issues are around social conflict, miscommunication, and misperception. The more AM becomes a public discussion, the more likely common ground will be found.
- Be Clear – The AM process must define clear goals, measurable objectives, and research protocols. More effort should go into defining goals and objectives and getting commitment on the front end of the collaborative process. One promising approach is *systematic review* of management techniques. There are very explicit methods already in place for conducting systematic reviews.
- Be Precise – How well you measure determines how well you manage. Moreover, it determines how well you are able to communicate effectiveness and adaptability to partners.



## Monitoring | Keys to Success: Integrating Partner and Collaborative Monitoring on Federal Lands

### Key Topics: Collaborative Process, Adaptive Management

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#### Speakers

- **Cory Davis**, Monitoring Coordinator, Southwestern Crown Collaborative CFLRP, University of Montana
- **Mary O'Brien**, Utah Forests Program Director, Grand Canyon Trust
- **Judith Dyess**, Assistant Director of Rangeland Management, Region 3, USFS

#### Overview

This session reviewed successful collaborative monitoring processes, providing advice for initiating and sustaining monitoring work.

#### **Cory Davis – Southwestern Crown of the Continent Collaborative, Montana**

The Southwestern Crown of the Continent collaborative (SWCC) set aside 10% of its Collaborative Forest Landscape Restoration (CFLR) project funding to support monitoring efforts. They established a monitoring committee organized into four subgroups: Aquatics, Vegetation / Fuels, Wildlife, and Socioeconomics. All monitoring is considered at three scales: local (citizen science), landscape (project area), and larger Northern Rockies region. The citizen science programs engage students, community members, and NGOs in the SWCC's monitoring process. More information and tools about the monitoring program are available in the resources below.

All data collected as part of the SWCC monitoring effort is synthesized in adaptive management reports, and the SWCC convenes meetings to discuss findings and how those findings may affect management. Additionally, the SWCC and partners organize workshops to compare information from the project area with trends across the larger northern Rockies region and discuss strategies to ensure that monitoring informs future management.

#### SWCC's Monitoring Lessons

- Start locally and then scale up the results of the monitoring to a regional level.
- Be flexible; check egos and expectations.
- Establish clear goals and get all partners to agree before work begins.
- Be as realistic as possible about time commitments and capacity, and build monitoring around capacity.
- Get collaborative work written into position descriptions and programs of work. This reinforces participation.

#### **Mary O'Brien – Monroe Mountain Working Group, Utah**

Monroe Mountain Working Group has recently designed five collaborative monitoring projects, each designed to answer specific questions that will provide recommendations for the restoration of beleaguered aspen around the Fishlake National Forest.

These monitoring projects were planned and implemented by the Monroe Mountain Working Group (MMWG). With its members and partners, the MMWG designed monitoring to be carried out by subgroups, members, community volunteers, and Brigham Young University doctoral students. The projects were funded by organizations and agencies belonging to the MMWG, including members, the U.S. Forest Service, and Utah Partners for Conservation and Development.



The monitoring plans were designed around specific questions the MMWG prioritized, such as, “Who is eating all the aspen sprouts and when?” and “What is happening to seral aspen stands (aspen-conifer) after a fire?”

The MMWG has identified multiple benefits to this collaborative process. Consensus and trust are built by working to answer questions together. Benefits of collaborative monitoring include:

- The process builds a shared understanding of a complex issue across diverse perspectives.
- Monitored information replaces assumptions.
- Seeing how the Forest Service values the information fosters partner support of Forest Service management.
- In-depth monitoring supplements what the Forest Service can do, allowing for research and not just monitoring project implementation.

### **Judith Dyess – The 10 Commandments for Collaborative Monitoring on Federal Rangelands**

Collaborative monitoring can increase the success of planned management as well as lay a foundation for management during a crisis or through changing conditions on the landscape. Collaborative monitoring can also integrate new partners into the process. Judith shared the following “10 commandments” from lessons learned while organizing collaborative monitoring projects.

- 1) Recognize building a program will take time.
- 2) Work with county and state level cooperative extension if possible.
- 3) When at all possible utilize common data elements across jurisdictional boundaries.
- 4) Ensure that everyone owns the data and accepts the data.
- 5) Use technology as a tool for data management *and* communication.
- 6) Bring everyone to the field to collect and review the data together---at least in the beginning.
- 7) Provide training and educational opportunities.
- 8) Let the resources do the talking, not agendas.
- 9) Recognize other’s leadership abilities.
- 10) Be honest, transparent, and open to the ideas of others. Recognize some may be coming to the discussion with anger, fear and trepidation.
- 11) ... and offer food!

### **Resources**

- Guide for Citizen Science Monitoring of vegetation and fuels: [A Citizen Science Approach to Forest Monitoring and Assessment](#)
- [Southwestern Crown Collaborative – Monitoring Webpage](#)





## Monitoring | Monitoring for Resilient Ecosystems: Developing Indicators and Metrics

### Key Topics: Adaptive Management

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#### Speakers

- **Tom DeMeo**, Ecologist, Region 6, USFS
- **Brett Wolk**, Research Associate, Colorado State University
- **Peter Nelson**, Defenders of Wildlife

#### Overview

This session reviewed broad monitoring initiatives that focus on ecosystem resilience and the emerging questions, struggles, and challenges they involve.

#### **Peter Nelson – Ecosystem Resilience as a measure of Ecological Integrity**

The restoration and enhancement of ecosystem resilience is a management priority on U.S. public lands. Adaptive management and ecological monitoring have been identified as fundamental mechanisms to evaluate the impacts and effectiveness of management approaches, test assumptions, and reduce uncertainty in the face of rapid environmental change. Operationalizing the emerging idea of resiliency for management and monitoring currently presents a challenge.

The concept of ecological integrity, which has been adopted as an ecosystem management objective in the U.S. Forest Service's 2012 planning rule and the 2014 Farm Bill's insect and disease provisions, provides a framework for establishing indicators and metrics for the assessment, management, and monitoring of ecosystem resilience.

Ecological integrity can be defined as the structure, composition, function, and connectivity of an ecosystem operating within the bounds of its natural or historic range of variation. Measuring relevant features of a historically intact ecosystem can provide a reference condition for evaluating the ecological integrity of a planning area. Simply put, a planning area is moving towards *resiliency* insofar as it aligns with the historic range of variation found within a relevant reference condition.

#### **Tom DeMeo – Developing Adaptive Management plans for CFLRP, Pacific Northwest**

Five collaborative landscape restoration (CFLR) projects were established in the Pacific Northwest: Tapash, Northeast Washington Vision 2020, Southern Blues, Lakeview, and Deschutes. Early on there was a recognized need to incorporate monitoring into the CFLRP efforts.

The Forest Service in Region 6 designed a monitoring process based on the full engagement of partners in an adaptive management context. The leaders emphasized CFLRP projects as a learning process, where results would be used to adjust to findings over time. Monitoring questions for each project were carefully vetted for cost, efficacy, support, and utility. Collaborative groups working on the projects endorsed and committed to each monitoring plan, helping to insure learning, rigor, accountability, and practicality rather than unachievable wish lists. Although challenges of agreement and emphasis continue, the process appears to be working, as evidenced by complete monitoring plans and subsequent progress reports.

#### 10 tips for developing an adaptive management plan:

- I. Clearly understand and convey your goals and objectives.



2. Organize your monitoring as a set of questions – e.g., are our activities making our landscapes more resilient or sustainable?
3. Involve your stakeholders in developing the monitoring questions.
4. Keep your monitoring plan simple and commit to it. Failures in monitoring arise because we do not answer simple questions well, not because our methods are not complex enough.
5. Match your monitoring questions to your monitoring capacity (available resources). Do not make long lists of questions you will never be able to answer.
6. Understand the continuum of evidence of increasing complexity and rigor. *Limited resources often mean a reliance on the first three: (a) expert panel, (b) photo monitoring, (c) landscape assessment (mapping methods), (d) quantitative ground data.*
7. Often a triage concept works well. Use less intensive monitoring methods in general and reserve data-intensive methods for areas of high interest or controversy.
8. Understand the right scale for your question. For example, questions on fire regimes normally are assessed at landscape scale.
9. Only after the questions are precisely decided should the group clarify monitoring methods and logistics.
10. Involve Forest Service leadership in developing the monitoring plan.

### **Brett Wolk – Monitoring Program Comparison, Federal CFLRP and state WRRGP in Colorado**

Partners and the Forest Service recently implemented two monitoring programs that span a large geography and diversity of management actions in Colorado. We can learn from comparing the diverse monitoring plans of the CFLR program and the Colorado Department of Natural Resources Wildfire Risk Reduction Grant Program (WRRGP). The CFLR program started a collaborative process to create a monitoring plan for projects on federal lands. The WRRGP used an independent third party organization, the Colorado Forest Restoration Institute, to conduct monitoring on private lands. Both of these monitoring programs were seeking the same field-based metrics (e.g., tree basal area, canopy cover, fuels abundance, understory plant cover, etc.), but they developed very different programs for monitoring these metrics.

On the one hand, the CFLR process has proved to be overly complicated and inefficient. There was a great deal of science and input in the planning stages. Rather than bringing clarity, the wealth of input led to complicated monitoring methods and an unmanageable number of metrics to measure. After 5 years, the monitoring program is struggling to answer basic questions about achieving inputs. The main lesson is that the monitoring was too complex to offer timely feedback for adaptive management.

On the other hand, the third-party WRRGP monitoring program was designed around simple questions that could be quickly measured and translated into reports. This ability to produce timely reports increased adaptive management possibilities (because there were timely results to discuss and learn from). Collaboration was not left out. Simple metrics and streamlined reports focused conversation between all parties and gave landowners and managers easy ways to provide feedback.

### **Lessons**

- Getting to a small list of precise questions is very difficult, but worth it.
- To reduce tensions and build trust, emphasize a learning process we do together.
- We continue to struggle with the amount of rigor and resources to dedicate to a question.
- Time matters. Frequent (at least yearly) reporting is essential to maintain momentum and credibility.
- No monitoring program needs to reinvent the wheel.



## Resources

- [Tracking Progress: The Monitoring Process Used in Collaborative Forest Landscape Restoration Projects in the Pacific Northwest Region](#)
- [Socioeconomic Monitoring Report for the Deschutes Collaborative Forest Project](#)
- [Wildfire Risk Reduction Grant Program Effectiveness Monitoring Program](#)



## Monitoring | Remote Sensing Tools for Collaborative Monitoring

### Key Topics: Modeling and GIS

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#### Speakers

- **Lynne Bridgford**, GIS Developer, Ecosystem Management Coordination, U.S. Forest Service
- **Matt Trager**, NEPA Planner, National Forests in Florida, U.S. Forest Service
- **Karen Honeycutt**, Natural Resources Program Manager, Colville National Forest, U.S. Forest Service

#### Overview

This session introduced data modeling tools and metrics that have been successful in monitoring large scale forest projects. Remote sensing data continues to improve and modelling tools are becoming increasingly accessible. Large-scale monitoring tools not only assist in identifying management opportunities and priorities, they also add transparency and shared knowledge to collaborative efforts.

#### Lynne Bridgford – FSVeg Spatial Data Analyzer (DA)

FSVeg Spatial Data Analyzer (DA) is a GIS-based application for project and landscape-level analysis. The DA incorporates the Forest Vegetation Simulator (FVS) as the primary modeling tool to model current and future conditions on USFS lands.

This tool and others are currently available to Forest Service staff, but outside users can access them with assistance from agency staff. The DA is based in ArcGIS, but there is a wizard to help make it easy to use for non-technical people. The tool allows people to play “what if games” in terms of exploring different situations without affecting corporate data. In addition, the tool enables visualization of the data on a map. Natural Resource Manager staff provide technical support to Forest Service staff. Efforts are underway to make the Data Analyzer tool even more accessible outside the Forest Service. Other tools and data sources are described on the NRM webpage.

#### Matt Trager – Ecological Condition Modeling in Apalachicola National Forest

The National Forests in Florida developed a new tool called the *ecological condition model* (ECM) for the long leaf pine communities. This geospatial planning tool incorporates Forest Service stand data along with Light Detection and Ranging (LiDAR) and Landsat data to estimate vegetation structure of 0.52ac cells throughout the ~600,000ac forest. The Forest Service then compared the structure estimates to desired conditions for longleaf pine communities, generating a simple condition score (1-5, ranging from excellent to very poor) that can be used to assess forest health, identify project areas, and provide information to identify appropriate management actions.

The Forest Service validated ECM by field verification. One important validation factor for the model was comparing the ECM to the known territories of the red-cockaded woodpecker, which were found to be well aligned. This indicates that the model is credible and applicable for more in-depth research and management of this iconic species, and many others.

#### Lessons

- The agency is imprecise in data analysis. Rigorous historical data is necessary, but is not often used.
- Ground-truthing is important because the model doesn’t always catch specific details of a stand. It provides a general picture.



## **Karen Honeycutt – LiDAR and the Northeast Washington Forest Vision 2020**

The Colville National Forest (NF) has been working with the Northeast Washington Forest Coalition, which established Vision 2020 (now a Collaborative Forest Landscape Restoration project). Vision 2020 set specific goals to restore most of the landscape to Condition Class I, rebalance structural stages toward the historic range of variability (in particular, increasing Old Growth Structure), and balance the road system needs with hydrologic and fisheries concerns. After initiating treatments across the landscape, the Colville and the collaborative were faced with a big picture, multi-scale question: *Did we shift the pattern, structure, and composition of vegetation at the stand, watershed, and CFLRP scale towards desired targets?*

The Colville NF identified 12 sites representing four different forest types for on-the-ground monitoring, and also used LiDAR technology to look at the landscape level. The resulting data has been extremely helpful in developing a joint understanding about the impact of treatments and planning for the future. LiDAR was originally funded through CFLR, but has now been made a priority for future use.

### **Lessons**

- Collaboratives should not be afraid to ask the Forest Service for Geographic Information System (GIS) support in answering important questions.
- Universities can be extremely helpful – Derek Churchill at the University of Washington ran the GIS data analysis.

### **Panel Discussion**

- The 2012 Planning Rule requires all forests to revisit their plans and monitor nine items every two years (terrestrial, water, rare species conditions).
- Questions are coming up about what level of precision and accuracy in data is required for this monitoring.
- While models are not 100% accurate, they provide a basis to get started over large spatial areas.
- Remote sensing is getting better, more accurate and cheaper. Techniques are always changing.

### **Resources**

- [Natural Resource Manager \(NRM\) webpage, with links and descriptions of database tools](#)
- [LANDFIRE: LANDFIRE is a program that provides over 20 national geo-spatial layers \(e.g. vegetation, fuel, disturbance, etc.\), databases, and ecological models that are available to the public for the US and insular areas.](#)
- [Forest Service Document “Considerations for Using LIDAR”](#)
- [Forest Service LIDAR information page](#)



## Monitoring | Socio-Economic Monitoring: Methods to Measure and Tell the Story

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### Speakers

- **Jonathan Kusel**, Executive Director, Sierra Institute for Community and Environment
- **Gina Knudson**, Executive Director, Salmon Valley Stewardship
- **Matt Piccarello**, Community Forestry Coordinator, Forest Stewards Guild
- **Cassandra Moseley**, Associate Vice President for Research, Research Professor & Director, Institute for a Sustainable Environment, Director, Ecosystem Workforce Program, University of Oregon

### Overview

This session reviewed current efforts to monitor the socioeconomic impact of forest restoration projects.

#### **Jonathan Kusel – Research and Development on Socioeconomic Monitoring**

The Sierra Institute is creating a long term socioeconomic monitoring methodology for the Dinkey Creek Collaborative Forest Landscape Restoration Program (CFLRP). The Institute has also recently released a study on the status of socioeconomic monitoring on CFLRP project sites across the country.

Compared to ecological monitoring, there is less agreement regarding socioeconomic monitoring indicators and protocols. Consensus regarding how to best monitor socioeconomic conditions within the context of forest restoration projects does not exist, but studies of current programs are leading to the identification and dissemination of best practices for socioeconomic monitoring.

Sierra Institute reports on socioeconomic processes are listed below under Resources.

#### **Gina Knudson – Getting the Whole Story**

The Lemhi Forest Restoration Group has been tracking social and economic measurements for 10 years. The group has found that in rural communities which are dependent upon public lands, economic impacts greatly influence social measures. Collecting quantitative data is important, but understanding the social context for the findings is just as important.

Gina Knudson of Salmon Valley Stewardship described the significant social benefits that accompanied a relatively minor economic benefit on a Central Idaho collaborative project, including:

- Cross-training turned seasonal workers into nearly year-round employees.
- Gaining knowledge on the benefits of the project motivated community members to become ambassadors for forest restoration.

Socioeconomic monitoring can also play a role in adaptive management. Regular check-ups on economic and social measures help ensure that project outcomes are in alignment with collaborative objectives. When designing a socioeconomic monitoring plan, list clear objectives and define ways of monitoring progress and correcting management processes.

#### **Matt Piccarello – Monitoring in New Mexico**

Matt Piccarello introduced the socioeconomic monitoring programs for two CFLRP projects in New Mexico, the Southwest Jemez Mountains and Zuni Mountains. Both projects are striving to improve both ecological and socioeconomic resiliency. Matt introduced a series of questions that help managers



and partners form a vision of building resiliency. By defining what socioeconomic resiliency is for a given landscape, a monitoring plan can set clear objectives and identify options for adapting management practices along the way.

1. Defining the focal system
  - E.g., “How do we define the Zuni Mountain Landscape?”
2. The resilience of what?
  - Natural resource uses – economic, cultural, recreational, etc.
  - Helps answer question #1
3. The resilience to what?
  - Natural and socio-economic disturbance
4. Identifying thresholds
  - Consistent supply of timber
  - Transportation costs
5. Governance systems
  - Flexible, adaptive?
  - How is conflict resolved?
  - Bottlenecks impacting decision making?

## Lessons

- Defining “local” is critical
- Include measures of social conditions and impact
- Engage in integrated monitoring early in the process
- Pitfalls of monitoring are a lack of clarity about what people want to monitor, starting too late, and collecting data that doesn’t answer the questions about which people want to learn

## Resources

- [Tracking the Economic Impacts of Restoration data collection form](#)
- [Quick Guides on Assessing, Planning, and Monitoring to Increase Local Economic Opportunities From Restoration and many other topics](#)
- [Monitoring Socioeconomics within Collaborative Forestry Projects](#)
- [The Burney Creek – Hat Creek Community Forestry Project](#)
- [The Dinkey Forest Landscape Restoration Project](#)
- [Zuni Mountain CFLRP](#)
- [Southwest Jemez Mountains Landscape Collaborative Monitoring Portal](#)



# Collaborative Restoration Workshop: Working Toward Resilient Landscapes and Communities

History Colorado, 1200 Broadway, Denver, CO

Tuesday, April 26th

TIME	EVENT/TITLE		LOCATION
6:30-8:00 AM	Registration & Check-In		Main Lobby
7:00-8:00 AM	Continental Breakfast		4th Floor Gallery
8:00-8:55 AM	<b>Opening Remarks &amp; Plenary Session</b> <ul style="list-style-type: none"> <li>Welcome from the National Forest Foundation</li> <li>Welcome from Daniel Jirón, Region 2 Regional Forester, USFS</li> <li>Keynote: Tom Tidwell, Chief, USFS</li> <li>Keynote: William J. Possiel, President, NFF</li> </ul>		4th Floor Gallery
9:00-10:30 AM	<b>Concurrent Sessions</b> (Choose One)		
	Large-Landscape & Regional Planning	Planning	MDC Room
	What's Working, What's Not: Integrating Science and Action	Integrating Science & Action	Ballantine Classroom
	Unpacking Collaboration – What Time is the Right Time, and What are the Sideboards?	Collaboration & Engagement	Colorado Room
	Connecting Planning to Effective Implementation	Implementation	Martin Room
	Remote Sensing Tools for Collaborative Monitoring at Large Scales	Monitoring	Boardroom
10:30-10:45 AM	Morning Break		
10:45 AM-12:00 PM	<b>Concurrent Sessions</b> (Choose One)		
	Building Momentum and Planning for Restoration through Five-Year Plans and Other Endeavors	Planning	MDC Room
	Using Science to Make Durable Collaborative Decisions	Integrating Science & Action	Ballantine Classroom
	Tools to Collaborate Successfully & Build Capacity	Collaboration & Engagement	Boardroom
	Using Stewardship Authority to Advance Restoration	Implementation	Martin Room
	Adaptive Management: Thinking Outside the Box	Monitoring	Colorado Room
12:00-12:55 PM	<b>Lunch &amp; Keynote:</b> Robert Bonnie, Under Secretary for Natural Resources and Environment, U.S. Department of Agriculture		4th Floor Gallery
1:00-2:30 PM	<b>Concurrent Sessions</b> (Choose One)		
	Forest Planning Under the 2012 Rule: Early Lessons in Planning and Collaboration	Planning for Restoration	Martin Room
	Collaboratively Engaging in Science	Integrating Science & Action	Ballantine Classroom
	Stories from the Front Lines: Launching & Nurturing a Collaborative Group – Colorado Front Range Roundtable	Collaboration & Engagement	Colorado Room
	Cross Boundary Implementation: All Lands Approaches	Implementation	MDC Room
	Socio-Economic Monitoring: Methods to Measure and Tell the Story	Monitoring	Boardroom
2:30-3:00 PM	Afternoon Break		4th Floor Gallery
3:00-4:30 PM	<b>Plenary Session</b> – Collaborative Restoration: Local Implementation of the National Vision		4th Floor Gallery
4:40-5:00 PM	Day I Wrap-up		4th Floor Gallery
5:30-7:00 PM	Evening Reception		Hamilton Hall / Main Floor



# Collaborative Restoration Workshop: Working Toward Resilient Landscapes and Communities

Wednesday, April 27th

History Colorado, 1200 Broadway, Denver, CO

TIME	EVENT/TITLE		LOCATION
7:00-8:00 AM	Registration & Check-In		Main Lobby
7:00-8:00 AM	Continental Breakfast		4th Floor Gallery
8:00-9:00 AM	<b>Opening Plenary Session</b> – Where Have We Come from and What Does that Mean for the Future?		4th Floor Gallery
9:05-9:30 AM	Morning Break		4th Floor Gallery
9:30-11:00 AM	<b>Concurrent Sessions</b> (Choose One)		-----
	Planning & NEPA at the Project Level	Planning for Restoration	Colorado Room
	Restoration as Science in Action	Integrating Science & Action	Boardroom
	Stories from the Front Lines: Launching & Nurturing a Collaborative Effort – West Virginia Restoration Venture	Collaboration & Engagement	MDC Room
	Removing Biomass: Utilization & Market Opportunities	Implementation	Ballantine Classroom
	Monitoring for Resilient Ecosystems: Developing Indicators and Metrics	Monitoring	Martin Room
11:00 AM-12:00 PM	Poster Session		4th Floor Gallery
12:00-12:55 PM	<b>Lunch:</b> Presentation by Harvard Negotiation & Mediation Clinical Program – Understanding and Addressing Critiques of Collaboration		4th Floor Gallery
1:00-2:30 PM	<b>Concurrent Sessions</b> (Choose One)		-----
	Innovative New Tools For Planning & Prioritization at Different Scales	Planning for Restoration	Boardroom
	Restoration Under a Future Climate	Integrating Science & Action	Martin Room
	Problem Resolving and Preventing: Working Together Effectively	Collaboration & Engagement	MDC Room
	Innovative Funding Mechanisms for Restoration	Implementation	Colorado Room
	Keys To Success: Integrating Partner And Collaborative Monitoring on Federal Lands	Monitoring	Ballantine Classroom
2:30-3:00 PM	Afternoon Break		4th Floor Gallery
3:00-4:30 PM	<b>Plenary Session</b> - Future of Collaborative Stewardship		4th Floor Gallery
4:30-5:00 PM	Closing Remarks		4th Floor Gallery



COLORADO FOREST RESTORATION INSTITUTE



NORTHERN ARIZONA UNIVERSITY

Southwest

Ecological Restoration Institute

RVCC  
Rural Voices for  
Conservation  
Coalition



Meridian Institute  
Connecting People to Solve Problems

