

Science and collaborative decision-making: A case study of the Kew Study

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Diverse stakeholders and land management agencies are increasingly working together in “forest collaborative” groups to meet ecological, economic, and social goals on Oregon’s public lands. Many collaboratives focus on science-based ecosystem restoration. One such group is the Deschutes Collaborative Forest Project (DCFP) in central Oregon, which seeks to increase forest resiliency and reduce wildfire risk on a 257,000-acre landscape.

In 2014, the DCFP participated in a research project on the history and future management needs of mixed-conifer forests in central Oregon. This research is directly informing their dialogue and future agreements about mixed-conifer forest types. We provide a brief case study of this project, as other collaboratives, managers, and scientists may wish to consider lessons learned.

PROJECT CONTEXT

The USDA Forest Service’s Pacific Northwest (PNW) Research Station and The Nature Conservancy (TNC) partnered with the DCFP to design a research project (hereafter, the “Kew Study”) that would assess historical conditions and disturbance regimes in dry and moist mixed-conifer forests in and around the Kew and Lex planning areas on the Deschutes National Forest, west of Bend. Funding was provided by the PNW and the Oregon Department of Forestry’s Federal Forest Health Program through an agreement with TNC. Specific objectives of the Kew Study were to (1) record current forest structure and composition and develop distinct forest types to provide a

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Phases of the Collaborative Research Project

- **Concept development:** Mixed-conifer management and restoration has been of interest for scientists and managers in eastern Oregon for several years, but only recently have collaboratives begun to discuss it. Collaborative members, scientists, and Forest Service partners in Central Oregon identified the upcoming need for research to inform and support collaborative work in mixed-conifer forest types. The opportunity to fund a study emerged through the state’s Federal Forest Health Program and The Nature Conservancy.
- **Research design:** The PNW Research Station (Thomas Spies and Andrew Merschel) and TNC (Pete Caligiuri) led the study design. The DCFP participated in developing research questions, and the scientists helped them identify which had already been addressed in previous research, and which could be addressed in this new study.
- **Data collection:** The DCFP was invited into the field to learn the sampling procedures and develop a shared understanding of the research process.
- **Presentation of results:** Preliminary results were presented in the field during fall 2014, and formal results were presented at monthly DCFP meetings from January to May 2015.
- **Development of management recommendations:** Currently, the DCFP is using the research results to develop management recommendations for mixed conifer forests at the stand and landscape scale.

framework for DCFP development of future desired conditions, (2) determine historical development of stand types and effects of logging and fire exclusion, and (3) determine how fire frequency and severity varied with environmental setting and landscape context. Sampling to understand forest development patterns and fire history was completed at 77 sites across the roughly 30,000-acre Kew Study area.

OUTCOMES AND CONSIDERATIONS

- **Plan far ahead:** The Kew Study was a “lucky” opportunity in that the Forest Service had established several years of future planning areas in the DCFP landscape as



part of the Collaborative Forest Landscape Restoration Program, and both the scientists and the collaborative were aware of the need for more information about mixed-conifer forests and additional local research on the subject. Collaboratives who wish to have current and relevant research will need to look ahead to identify expected future issues and topics with the Forest Service and identify researchers with whom they might work and potential sources of funding.

- **Ensure agreement and alignment:** This research project was designed to align closely with the DCFP's upcoming interests in mixed-conifer forests, and the members agreed to undertake it. Other collaboratives will want to ensure that any possible research studies are similarly designed to align with the group's future projects and mission and use their decision-making processes to clearly and collectively agree to pursue any research.

- **Set up multiple tie-ins:** The scientists in the Kew Study designed a transparent process with a clear timeline and multiple points of interaction with the DCFP, from study conceptualization through results sharing and use. This allowed the group to engage with and better understand the scientific process and build shared language with each other and the Forest Service for discussing structure, composition, and landscape conditions. The scientists also invested additional time in explaining "learning topics" (covering foundational ecological concepts and issues) to the group, increasing their capacity to utilize the research and engage the scientists. This unique research partnership requires researchers to be flexible and adaptable in tailoring their presentations to the unique learning needs of the collaborative. Further, neutral, third-party facilitation was both helpful and necessary to manage this socio-ecological research and learning process effectively.

- **Ensure fit and trust with scientists:** Scientists have a range of comfort in working outside of the academic realm, and their personalities and values also vary. Finding

scientists with whom there can be mutual trust is essential for facilitating collaborative dialogue and shared learning. In the Kew Study, the scientists had previous research experience in the East Cascades area and a track record of successful interactions and relationships with the Forest Service and collaborative stakeholders

- **Engage a science liaison/boundary spanner within the collaborative:** TNC's central Oregon field staff was a longstanding participant in collaborative efforts and provided technical assistance with scientific issues to the DCFP. This person was familiar with both scientific and collaborative processes and was able to help "translate" science to the group, as well as assist with study design to suit the group's goals. Other collaboratives may wish to engage a similar liaison type from a nonprofit organization, university Extension, or even perhaps an agency resource specialist who is trusted and perceived as neutral.

- **Understand scale:** At the scale of the Kew and Lex planning areas, which are moderately large landscapes, the researchers were able to examine how disturbance processes (particularly fire) had affected forest development over time, track how fire may have moved through the area, and interpret the effects of fire on forest structure and composition over time. Being clear on what kinds of questions are possible to address at stand versus landscape scales can help a collaborative better identify the appropriate scope of research needed.

- **Recognize the role of values:** While the Kew Study was underway, the DCFP also had extensive dialogue about the range of values in mixed-conifer forests among the various collaborative stakeholders. The scientific results of the study helped inform the collaborative's eventual decisions on recommendations, but the study did not replace or decrease the importance of stakeholder interests. Deliberately building time for conversations about values and interests, in parallel with ecological research, is an important step and can help collaboratives

maintain their commitment to incorporating diverse perspectives in their work.

- **Navigate "dueling science":** Early during the DCFP social-learning process, stakeholders identified a list of necessary educational topics for group learning on subjects central to developing mixed-conifer recommendations. These included forest vegetation classification systems, understanding fire regimes, historic forest vegetation, and policy and management for northern spotted owl. DCFP stakeholders, agency partners, and outside scientists were invited to present to the group to gain additional, diverse perspectives. "Dueling scientists" were also invited to share short written documents describing forest conditions and restoration needs (or lack thereof) in the Eastern Cascades. Although DCFP time and resource constraints limited the group's ability to spend much time on any one topic, this process was critical to provide opportunities throughout the process to explore divergent perspectives and alternative scientific approaches alongside the local data produced through the Kew Study. Although engagement with researchers and efforts to include all perspectives did not obviate conflict, it did a great deal to establish a transparent process in which the DCFP could place the Kew Study results in context with other (and sometimes) conflicting research and interests.

- **Create end goals and uses for the research:** The Kew Study will directly inform the DCFP's upcoming recommendations for mixed-conifer management and restoration, as well as create a common framework for understanding and incorporating mixed-conifer forest types in collaborative and Forest Service planning process. Other collaboratives engaging in primary research may wish to ensure that similar kinds of deliverables are produced and available to the collaborative before results are published in scientific journals. In the long run, however, it is valuable to have peer-reviewed science products to serve as a foundation for the restoration.

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