Collaborative Restoration Workshop
National Forest Foundation | April 2016

Science & Action | Using Science to Make Durable Decisions

Key Topics: Modeling and GIS

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