Ramping Up Restoration in Nevada's Schell Creek Range

Using FLN, CAP and LANDFIRE Data & Methods to Go to Scale

Proposed prescribed fire treatment areas for the southern portion of the Schell Range. Polygons represent concentrations of overabundant successional stages for aspen woodland and mountain sagebrush ecosystems.

Knowing the best places to apply various treatments, and deciding where to treat first, is a common challenge faced by land managers. For managers of public lands, an equally formidable hurdle is the public review process, which can be lengthy if some citizens oppose the proposed actions. A team focused on Nevada's North Schell Creek Range recently devised an innovative approach to priority setting that also helps facilitate the public review process. The approach combines the use of The Nature Conservancy's "Rapid Conservation Action Planning" framework, including a novel return on investment tool, with data and an analysis tool from the LANDFIRE project. The project generated a large volume of scientifically defensible documentation for the public review process.

The Schell Creek range is in the 1-million-acre Ely District of the Humboldt-Toiyabe National Forest. District Ranger Pat Irwin started discussing the project with Conservancy staff in 2006. "We wanted a better process to decide where to spend our limited treatment dollars," said Irwin. "We have pinyon-juniper vegetation encroaching into sagebrush everywhere. Much of our aspen is in decline, and some of our white fir too. And we have a large elk herd. Given all these needs, we had to figure out where we have the best chance of being successful."

Using Available Data & Analysis Tools

As regional leader for the Intermountain West Rangelands and Woodlands Fire Learning Network (FLN) since 2002, Louis Provencher has been developing a variety of spatial analysis tools for western shrublands and woodlands. In northwest Utah, Provencher and others are using GIS, remote sensing data and spatial modeling technology to inform the development of a community-based management plan for an area encompassing portions of the Grouse Creek Mountains and Raft River Mountains. Provencher quickly recognized that the assessment Irwin and the Conservancy were discussing was an opportunity to use some of the methods and concepts developed for the northwest Utah project and to deploy new LANDFIRE data at no extra cost to the Forest Service.

Susan Abele and Provencher (TNC Nevada) led the project for the Conservancy, with expert assistance from Greg Low of the California Chapter. The Conservancy's role was to facilitate the process, relying largely on local Forest Service staff for basic information on species and ecosystems of interest, threats and management strategies. (For more information about CAP and the FLN, see the February 2006 edition of the *FLN Dispatch*.)

Fortunately, a great deal of ecological information was also available from conservation plans

Montane sagebrush, aspen woodlands, and mixed conifers on the Schell Creek Range. Photo by Louis Provencher.

that had recently been developed for projects with similar ecosystems in Nevada, Utah and Idaho. For this reason, and also because LANDFIRE data and analysis tools were readily available, the team was able to move quickly through the CAP process.

Looking at the Economics

The team added a new step to the CAP process that allowed them to determine which ecosystem types the Forest Service could treat most efficiently both in ecological and financial terms.

The treatments under consideration were based on the ecosystem-specific management strategy information documented in the CAP workbook. For example, native plant seeding and herbicide application were two treatments considered to improve the condition of Wyoming and black sagebrush ecosystems, which had been invaded by cheatgrass. Fencing was the main treatment considered for wet meadows and springs that were suffering from a combination of incompatible elk grazing and browsing and livestock use. Prescribed burning, as well as several other treatments, were being considered for aspen woodlands and mountain sagebrush ecosystems because these ecosystems had very few early successional forms as a result

of a lack of fire, and because cheatgrass was not a concern at higher elevations.

This return on investment analysis revealed that treating four ecosystems— aspen woodlands, mountain sagebrush, wet meadows and riparian corridors— would give the Ely District the biggest bang for their buck. By comparison, mountain mahogany and pinyon-juniper woodlands were much less "out of whack" and, therefore, typically did not require management. These ecosystems were also much more expensive to treat.

Using an analysis tool and data developed as part of the LANDFIRE project, the assessment team mapped the various successional states of aspen woodlands and other ecosystems. Then they used the map to identify the 15 aspen and adjacent mountain sagebrush areas that were most in need of treatment. These areas, ranging in size from 200 to 5,000 acres, represent places where the Ely District will get the best return on its investment (see map, opposite page).

Scaling Up Further

In preparation for the public review process, Ely District staff are developing cultural resource, goshawk and sensitive plant surveys. They expect that most stakeholders will support the proposed

projects, in part because the CAP process generated a great deal of scientifically credible information. Once the Environmental Assessment is approved, the District will have 10 to 15 projects ready to be funded and implemented.

"Everyone here feels good about the process," said Irwin. "We knew we didn't want to produce a report that would just sit on the shelf. Instead we have actual projects delineated on a map."

But the story doesn't end there. The Forest Service has asked the Conservancy's Nevada Chapter to use the methods piloted for the North Schell Creek Range to help plan treatments for several other projects in Nevada. And the Conservancy plans to use the same approach to analyze treatment options to accomplish the objectives identified in Nevada's Wildlife Action Plan for the whole Steptoe Valley-Schell Creek Range.

LANDFIRE Data Quality

Because the LANDFIRE data available for this region of Nevada are relatively accurate, the North Schell assessment team was able to avoid the time and expense of buying and calibrating remote sensing data. The team has Ely Bureau of Land Management staff to thank, because in 2005 they contributed a massive amount of plot data that had been collected since 2002 to the LAND-FIRE project.

The LANDFIRE National project uses data collected on the ground from plots and satellite imagery to map vegetation. Many factors impact the accuracy of LANDFIRE vegetation maps, but the quality, distribution and number of ground plots is probably the most critical factor determining the quality of the final products. The more accurate the data, the more useful it is for mid-scale analyses such as the North Schell assessment. For more information or to download LANDFIRE products, visit http://landfire.gov.