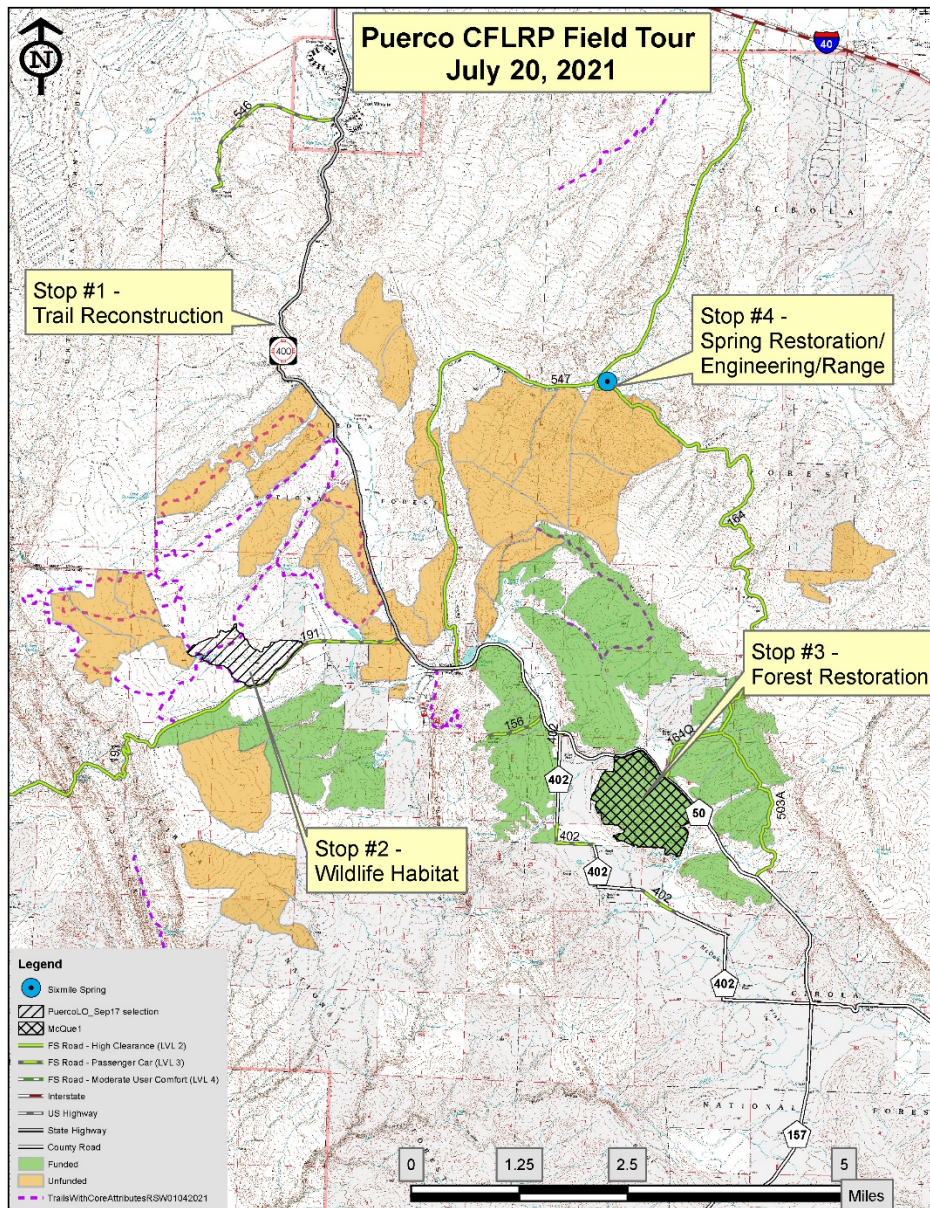


Notes from the Field: Zuni Mountains Collaborative Site Visit

July 20, 2021

On Tuesday, July 20th, 2021, more than two-dozen partners of the Zuni Mountains Collaborative representing the Native Plant Society, EMNRD Forestry Division, Department of Game and Fish, McKinley County, Bat Conservation International, Great Old Broads for Wilderness, and retired professionals convened for a site visit of the Zuni Mountains Collaborative Forest Landscape Restoration (CFLR) project. Led by the Forest Stewards Guild and USDA Forest Service staff members from the Mt. Taylor Ranger District, participants had the opportunity to view and discuss completed and ongoing project work within the Zuni Mountains CFLR landscape. At four different sites within the landscape, resource specialists shared their work and spoke about how project implementation has affected specific resources, touching on timber, wildlife, vegetation, recreation, prescribed burning, roads, and hydrology.



Trails

From the Milk Ranch Trailhead, Arnold Wilson, representing Recreation for the Mt. Taylor Ranger District, shared the evolution of the trails that are helping to make this part of the Cibola National Forest a popular destination among mountain bikers and hikers. The project began with the Range department, with a section of fence cut to make way for unofficial, “user-developed” trails. The Forest Service realized that these were uses and impacts they weren’t managing for, and they began bringing more people to the table to develop an official solution. They began with 26 miles of trail under an Environmental Assessment (EA), completed through partnerships with the NM Council of Governments and local users. With this conversion of unauthorized trails and decommissioned roads, an extensive non-motorized system was born.

When a new ranger came on board with a vision, the decision was made to replicate this approach across the Zuni Mountains with a total of 186 miles of trail ultimately cleared for completion. Cibola and McKinley counties have been integral partners in this work, allowing state funding to be allocated to this project. The U.S. Forest Service has contributed time and expertise but has had limited funding available for operations and maintenance. On this front, local partners have stepped up to take on maintaining the trails, making this a true collaborative effort. Today, the Zuni Mountains Trail Master Plan lays out implementation on a scale reaching from Gallup to Grants.

With a shift from user-developed trails to a permanent system, there has been an emphasis on building sustainable trails that will hold up against wear and erosion. Strategies such as building in undulations for natural water drainage help keep costs down by mitigating the need for water bars to be rebuilt on an annual basis. The project also takes into account sensitive species such as the Mexican Spotted Owl (MSO), as well as the federally protected Zuni Fleabane; if one of these plants is encountered, the trail being constructed traces a detour to avoid the plant. Furthermore, a new agreement with New Mexico Heritage will model fleabane populations to help with its conservation. In these ways, the Forest is looking to balance a restored landscape with the built environment in such a way that they complement each other.

Wildlife

For the second stop on the tour, participants gathered in a stand of Ponderosa pines and mature Gambel oak—one of the best examples of MSO habitat on the project. Looking around, Forest Silviculturist Shawn Martin pointed out that almost every pine was at least 18 inches in diameter. Another characteristic of prime MSO habitat is that Gambel oak of at least 5 inches in diameter make up a minimum of 20% of the stand’s basal area.

District Wildlife Biologist Consuelo Lemaire spoke about the thorough ecological monitoring required for MSO habitat. PACs, or Protected Activity Centers, are areas identified as prime owl habitat. PACs must be monitored yearly when any work is being implemented on timber, trails, springs, or other resources within the area. Out of the seven PACS in the forest, two of them had MSO pairs and successful young in 2021. In two of the remaining PACS, single male owls were identified. Three PACs yielded no response from owls during monitoring, but, as Consuelo pointed out, “there’s always a chance the owl just doesn’t want to talk to us.”

The strength of collaboration in the Zuni Mountains CFLR shone clearly during the MSO injunction. During this time, restoration thinning treatments on public land ground to a halt, even in areas not identified as potential owl habitat. With no wood coming off of the forests, Mt. Taylor Manufacturing faced severely reduced access to raw material for its products.

As the only mill in the area, the active operation of Mt. Taylor Manufacturing is crucial to restoration efforts. With this in mind, New Mexico State Forestry increased treatments on private land to help keep the mill open until the injunction was lifted.

The aftermath of the injunction is a much more stringent checklist ensuring that the Forest adheres to the monitoring specified under NEPA. New rules coming out of the MSO injunction settlement establish a transparent, standardized procedure and checklists for all necessary monitoring and analyses to guarantee that landscape treatments are carried out where and how they should be based on MSO habitat. At the same time, treatments carried out in areas that don't meet habitat criteria can contribute to moving those areas toward the desired conditions.

Zuni bluehead sucker, or Zuni mountain sucker, has been declared a state endangered fish by New Mexico since 1975, and is currently limited to isolated areas within Rio Nutria, Pescado, and Agua Remora – less than 10% of its presumed historical distribution. In the 1920s, the Radosevich brothers wanted to have fish in their small headwater stream and actually transported “minnows” from the Rio Nutria by bucket to Agua Remora which was the first documented effort to conserve the Zuni bluehead sucker, even if not intentional. In the 1960s, chemical treatments called piscicides were added to the Rio Nutria and Pescado by the US Fish and Wildlife Service to remove green sunfish, minnows, and suckers in an effort to open up habitat for rainbow trout to support sport fishing. Populations of Zuni bluehead suckers were decimated in the lower river reaches but survived in upstream reaches because private landowners in the upper areas did not allow access for these treatments. In the 1980s, Game and Fish fenced Agua Remora to exclude livestock. Habitat for the Zuni suckers consists of “largely shaded pool and riffle habitats with coarse substrates”. The primary threat to the sucker is sedimentation of the streams which can be exacerbated by livestock grazing. Surveying and data collection has been conducted in the Zunis since the early 1990s by several different groups such as Zuni Pueblo and The Nature Conservancy. Most recently, the Forest Stewards Guild has been collaborating with the Spring Stewardship Institute to monitor appropriate habitat. The Forest Stewards Guild conducts rapid riparian health assessments at Tampico Draw and Agua Remora to measure: streamflow, streambed geology, width/depth ratio, bank stability, riffle/pool ratio, buffer width, vegetation, canopy shading, and aquatic insects and additional water quality indicators such as temperature, electrical conductivity, dissolved oxygen, pH and total dissolved solids. These measurements help to evaluate the health of the riparian habitats over time. The data collected since 2012 informed the Rio Puerco CFRP NEPA process and the data collected by the Zuni Mountain Collaborative has also supported published graduate student research on desert fish habitat. The Zuni bluehead sucker was federally listed as an endangered species in July of 2014.

Timber and vegetation

As the tour arrived at the timber harvest site, a truck loaded with small-diameter logs passed through on its way to the mill. The group gathered in a thinned stand of Ponderosas in which the “leave trees”—those not harvested—had been designated by a stripe of orange paint and a dot at the base of the trunk. At this stop, Shawn Martin, Silviculturist, Jay Williams, TMA (Timber Management Assistant), and Jason Eakins, TPM (Timber Program Manager), went into detail about thinning, harvesting, roads, and shared stewardship. This treatment area consists of 677 acres, with eight to ten thousand acres slated to be treated with mechanical thinning over the next decade. Trees greater than 12 inches in diameter at breast height – 4.5 feet from the ground - qualify as lumber grade, while smaller material is used for products such as pellets and playground chips. Given their social importance and ecological value, trees greater than 18 inches in diameter are not cut but are retained on the landscape.

The treatment prescriptions look to remove about half of the volume of trees in any given stand; wood and slash left on the ground after harvest will be made available for public firewood collection. Ridges were thinned more heavily to mimic natural landscape variation and to counteract infestations of mistletoe affecting the trees. The prescription seeks to set the stage for healthy future forest conditions by maintaining at least two age classes of trees and by creating openings (patch cuts) on the ground to promote regeneration and tree species diversity. Monitoring carried out by the Forest Stewards Guild has yielded data demonstrating that after treatments, average tree size has risen while density has decreased, suggesting that stand conditions are moving in the right direction and that large trees are indeed being retained.

Some clarifications pertaining to roads and available log truck haul routes were made at this stop. In particular, the Wingate Bridge used to haul timber out of Sixmile Canyon is owned by the state, not the county. Ownership, as well as weight limits, of bridges such as this one can affect whether it may be used to transport logs and the fee which must be paid by the forest service to utilize it for commercial purposes. There are approximately 200 miles of unauthorized roads in the Puerco treatment area; apart from one road that will be maintained as a fire route, these roads are being decommissioned to help prevent erosion and to allow the movement of fire across the landscape.

Prescribed Burning

Edward Baca, Mt. Taylor District detailed Fire Management Officer, spoke to the group about the use of prescribed fire on the landscape. He pointed out that having some fuels (i.e. burnable vegetative material) on the ground is desirable, as it allows fire to move across the landscape.

Speaking from many years of experience as a fire practitioner, Eddie described the shift he's seen over time in fire behavior. The period between 1999 and 2007 saw small-scale ignitions that tended to burn 200- to 400-acre chunks, while fires since 2007 have taken out larger chunks. Speaking to the roughly 100 years of federally-mandated fire suppression on public lands, Eddie quipped "you can't take a vacuum cleaner out of the living room for 100 years and not expect stuff to build up". As wildfires have increased in size, so have the units which fire practitioners are striving to treat with prescribed fire and fires managed for resource benefit.

Fire operations can tap in to a large-scale NEPA analysis for vegetation to support the development of burn plans, and the Forest currently has burn plans in place through 2026. Some are Rx (prescribed) burn only, and others are written to treat an area with fire in combination with mechanical thinning. Spring burning occurs in mid- to late-April, while fall burn windows happen roughly from mid-September until the first snowfall. 5 or 10 years after the initial burn, a second entry is planned; these tend to be less intense and help move the landscape toward a return to natural ignitions and a more frequent fire regime. Eddie spoke to the diversity of approaches to restoration over time, saying "I've seen so many different prescriptions: 'clumpy-groupy', thin-from-below, burning for goshawk habitat, burning for MSO habitat... What I see now is that we've moved toward promoting what the ground wants to do."

Eddie and Eytan Krasilovsky of the Forest Stewards Guild discussed a recent fire success, the spring 2021 Copperton Rx. This treatment was implemented on about 1900 acres, or half of the total treatment area, and burned at low-intensity. Eddie indicated he wants to go back to finish burning the unit this fall. There was interest from Native Plants Society in participating in the VIP burn observer opportunity again in the future.

Hydrology and roads

On the final stop at Sixmile Spring, tour participants learned about the work that has gone into maintaining and improving roads within the CFLR landscape. Due to the high clay content, the road on which the group was standing used to become impassible with any rain and treatment with the regular road mix didn't last.

There were also major drainage issues on many of the roads where old culverts created huge gullies and erosion. As part of the Puerco project, this particular road has been paved with a three-inch gravel base which is replenished as it settles and is pushed down by haul trucks. Thanks to the extra investment, the district hasn't had problem calls about this road for the past two years. Culverts have been improved with the addition of steel aprons and riprap at their bases to prevent soil erosion. To address sedimentation into the stream running through the adjacent canyon, Livia Crowley, Forest Hydrologist, came up with a plan to add check weirs with permission from the Army Corps of Engineers. The district is now using capital improvement funds to prepare roads in the Puerco area, getting a head start on addressing road issues in anticipation of restoration implementation. These actions build on the development of two watershed action plans in the area.

Representative of Bat Conservation International took a break from surveying in the area and joined the group at the end of the day. This group is investing \$15,000 in the Zuni Mountains to improve and restore natural springs and riparian areas to build habitat for bats and their food sources – insects. Their investment and work is a cooperative effort with the Mt. Taylor Ranger District and other members of the Zuni Mountains Collaborative.

Final Notes

After more than a year of global and local disruption, partners are eager to be back in the field together, working through the challenges of management, and are energized by the fact that this CFLRP was the top ranked extension proposal. We are hopeful that with another ten years of funding we can continue the good work and environmental restoration seen on the field tour.