

Jemez Mountains Climate Change Adaptation Project

New Mexico

1.4 million acres

The Jemez Mountains Climate Change Adaptation Project is one of four linked climate change adaptation pilot areas in the Southwest Climate Change Initiative (SWCCI). SWCCI is a Conservancy-led four-state collaborative effort with a goal of developing and sharing practical strategies that help ecosystems adapt to expected changes in climate. Within the Jemez Mountains project area, the land is managed primarily by federal agencies and Native American tribes. The Santa Fe National Forest and Valles Caldera National Preserve manage most of the mountains; significant acreage is also managed by Bandelier National Monument, the Department of Energy (around the Los Alamos Scientific Laboratory) and the Pueblos of Jemez and Santa Clara. Support from the Fire Learning Network over the last nine years has helped Conservancy, federal and tribal managers build their expertise in forest restoration and fire management by bringing together scientists and local natural resource managers. In recent years, efforts have shifted to incorporate an emerging understanding of climate change and its effects in the Jemez Mountains. In 2009, Conservancy and SWCCI collaborators conducted a climate change adaptation planning workshop with 50 managers and local scientists to develop adaptation strategies to improve forest and stream resilience to the expected effects of a drying, warming climate in the Southwest. In 2010, this initial effort was expanded, with the Conservancy assisting the Carson and Santa Fe National Forests, and scientists from the Forest Service and USGS to design and deliver a week-long climate change workshop for the two national forests and key partners from other state and federal agencies.

Current work includes implementing a Collaborative Forest Landscape Restoration Program project, the SW Jemez Mountains Restoration Strategy, which was awarded Forest Service funding in 2010. This 210,000-acre project on the Santa Fe National Forest and the Valles Caldera Preserve will improve stream conditions, reduce the risk of large crownfires and restore the natural role of fire at an ecologically meaningful scale. The Conservancy is a primary partner in the monitoring strategy for the 10-year project, and serves on its steering committee.

The project was also awarded a New Mexico Collaborative Forest Restoration Program grant in 2010 and is working with the U.S. Fish and Wildlife Service, New Mexico Department of Game and Fish, U.S. Geological Survey, New Mexico Forest and Watershed Restoration Institute and the University of Arizona to address climate change threats to the unique Jemez Mountains salamander by conducting additional surveys and developing best management practices for forest restoration projects. Destructive crown fires are expected to become more frequent as the climate warms, and accelerated thinning and controlled burning in mixed conifer forests is important to reduce the threat to salamander forest habitat.



The Jemez Mountains, a volcanic range at the southernmost edge of the southern Rocky Mountains, form a sky island of water and forests in an arid land. They are an important center of biological diversity, and provide a critical source of water for major urban areas. Dark areas in the photo are forests and woodlands. Visible as lighter patches are the extensive high-elevation grasslands in the heart of the ancient volcano. These unique undeveloped grasslands are one of many features that make these mountains important to conserve.

NASA Earth Observatory image created by Jesse Allen and Robert Simmon, using United States Geological Survey Landsat data (May 22, 2002)

In 2011, the Conservancy and local resource experts began a “climate smart” Conservation Action Plan, designed to more systematically include climate change considerations into managing the watersheds and diverse species habitat throughout the Jemez Mountains.

Also in 2011, partners have responded to the human-caused Las Conchas Fire that devastated over 156,000 acres of the eastern Jemez Mountains. The Conservancy is helping agency partners work across boundaries by organizing sessions of the East Jemez Resources Council, giving participants the chance to share burned area assessment information and to develop joint response plans to this severe fire and the subsequent flood damage.

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map © 2011 Liz Rank/TNC

Project Goal

The Jemez Mountains Project goal is to develop science-based climate change adaptation strategies and on-the-ground projects that increase ecosystem resilience and native species conservation under a changing climate.



An outcome of the Jemez landscape's 2009 climate change workshop was an additional collaborative effort focused on adaptation strategies for the rare endemic Jemez Mountains salamander (*Plethodon neomexicanus*). Reducing uncharacteristic crown fire and improving current stand conditions were priorities actions identified by managers and scientists participating in two salamander workshops. To develop more specific strategies, Conservancy, federal, state, tribal and university partners are now working to develop reference conditions for Jemez mixed conifer forests and Jemez Mountain salamander habitat.

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Landscape Partners

Bureau of Indian Affairs
 Forest Guild
 Jemez Pueblo
 Los Alamos National Lab
 National Park Service—Bandelier National Monument
 New Mexico Department of Game & Fish
 New Mexico Energy, Minerals & Natural Resources Department
 New Mexico Highlands University—Forest & Watershed Restoration Institute
 New Mexico State Forestry Division
 New Mexico Trout
 Santa Ana Pueblo
 Santa Clara Pueblo
 The Nature Conservancy—Colorado, New Mexico
 Trout Unlimited
 University of Arizona
 USDA Forest Service—Santa Fe National Forest
 USDA Forest Service—Region 3
 USDA Forest Service—Rocky Mountain Research Station
 U.S. Fish & Wildlife Service
 U.S. Geological Survey
 Valles Caldera National Preserve
 Wildlife Conservation Society



Partners en route to the southernmost occurrence of bog birch (*Betula pumila*) in North America, in the Valles Caldera National Preserve © Anne Bradley/TNC

More information:

www.nature.org/ourinitiatives/regions/northamerica/unitedstates/newmexico/climate-change-in-new-mexico-jemez-mountains.xml