

Background Report

November 2005

Looking to the Future:

A Town Hall on New Mexico's Watersheds and Forests

Town Hall Convened by:

New Mexico First
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Albuquerque, NM 87102
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On Behalf of:

The New Mexico Department of Agriculture
The New Mexico Energy, Minerals, and Natural Resources Department
The New Mexico Forest and Watershed Restoration Institute

With Additional Funding from:

New Mexico Highlands University
USDA Forest Service

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Preface

This report was compiled in preparation for a statewide town hall deliberation entitled *Looking to the Future: A Town Hall on New Mexico's Forests and Watersheds*. The two-day town hall will bring people together to discuss watershed issues in general, review existing state watershed management plans, and make recommendations for policymakers.

Convened by New Mexico First, this event was sponsored by:

- New Mexico Department of Agriculture (NMDA)
- New Mexico Energy, Minerals and Natural Resources Department (EMNRD)
- New Mexico Forest and Watershed Restoration Institute

In order to deliberate about watershed issues in an informed way, **participants attending the town hall are asked to read this report in advance of the meeting**. The event will be held November 28-29, 2005 at New Mexico Highlands University in Las Vegas, NM.

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- Heather Balas, New Mexico First
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About New Mexico First

New Mexico First is a nonpartisan, nonprofit organization that engages citizens in public policy. Co-founded in 1986 by U.S. Senators Pete Domenici (R-NM) and Jeff Bingaman (D-NM), the organization brings people together for two- and three-day town hall meetings. These town halls use a unique consensus-building process that enables participants to learn about a topic in depth, develop concrete policy recommendations addressing that topic, and then work with fellow New Mexicans to help implement those recommendations with policymakers.

Introduction

Forests and watersheds provide renewable resources and quality environments to the citizens of New Mexico. Our forests and watersheds are threatened by an array of problems that have developed over the last century, including:

- Large wildfires in forests with too many trees that destroy homes and threaten water supplies;
- Invasive trees and shrubs along New Mexico's rivers and streams that displace native plants and animals, increase stream erosion, and use more water than native plants;
- Insect outbreaks stimulated by drought that kill large numbers of piñon and old ponderosa pines; and
- A loss of diversity of native plant and animal species.

These problems span the landscape and do not follow ownership or city, state, or county and other jurisdictional lines. Potential solutions affect rural communities, regional economic development, and the natural legacy left to future generations.

In response to these concerns, New Mexico has assumed a national leadership role in ecological restoration planning and watershed management. Among other things, the state has undertaken three major efforts, each summarized below and addressed in greater detail later in this report.

- **The Forest and Watershed Health Plan** was developed by New Mexico's Forestry Division, which is part of the Department of Energy, Minerals, and Natural Resources. It seeks to restore watersheds and forested lands to preserve ecosystems across broad landscapes, paying special attention to the cultural and economic fabric of the local communities.
- **The Non-native Phreatophyte/Watershed Management Plan** was developed by an inter-agency work group led by the New Mexico Department of Agriculture (NMDA) in consultation with the soil and water conservation districts. This plan seeks to restore riversides and streamsides overtaken by water-thirsty invasive plant species (such as Russian olive and saltcedar trees).
- **The New Mexico Forest and Watershed Restoration Institute** was established as part of a regional effort to assist land managers and states to thin and restore forests to make them healthier. The Institute seeks public feedback on how it can help integrate efforts associated with the two plans above and other watershed restoration activities.

Policymakers need guidance and support from the public for continued implementation of these three efforts. This report provides information that will enable town hall participants to help provide that guidance. It has three sections:

- **The Past**, which discusses human activities of the last 100 years that affected the region's forests and watersheds.
- **The Present**, which addresses the current condition of New Mexico's forests and watersheds and the two plans mentioned above.
- **The Future**, which identifies future needs of stakeholders and projected trends if restoration steps are not taken.

Definitions

To participate in the town hall, participants should be comfortable with some basic terms.

Watershed: A region or land area that is ultimately drained by a single stream, river or drainage network, and includes all of the land within the entire drainage area. Everyone lives within a watershed. An example of a large watershed would be the Rio Grande valley from Colorado to Texas. Examples of smaller watersheds within the larger watershed are the Chama River valley and the Rio Puerco valley.

Watershed Management Approach: A strategy for effectively protecting and restoring surface and ground water supplies and quality, as well as ecosystems and human health. This premise of this is that many water quality and ecosystem problems are best solved at the watershed level rather than at the individual water body or discharger level. Major features of a watershed management approach include: targeting priority problems; promoting a high level of stakeholder involvement; integrated solutions that make use of the expertise and authority of multiple agencies; and measuring success through monitoring and other data gathering.

Phreatophyte: A deep-rooted plant that obtains its water from the water table or the layer of soil just above it.

Restoration: Reestablishment of the structure and function of ecosystems. The restoration process reestablishes the general structure, function, and dynamic but self-sustaining behavior as closely as possible to pre-disturbance conditions and functions.

The Past

Fire Suppression

In the distant past, data indicates that the frequency of wildfires depended on the types of trees available in the area for fuel. Ponderosa pine forests would burn every two to ten years, while piñon and juniper forests would burn every ten to 30 years, and spruce/fir forests could go 150 years without a fire. These wildfires were relatively localized, burning up excess forest fuels before the area became hazardous. These fires were a part of the natural forest cycle.

As of the early 1900s, fire suppression was a widely adopted practice, considered good forest management. Fire suppression policies called for extinguishing fires as quickly as possible to protect communities and natural resources. The effect was to interrupt the natural restorative role of fire in the environment. Because forests were more dense, they permitted more "crown fires" (fires that reach the tops of the trees, spread more quickly, and burn a larger area). These fire suppression policies had the unintended consequence of creating more fires that burned a larger number of forested acres than before (Fig. 1 & 2).

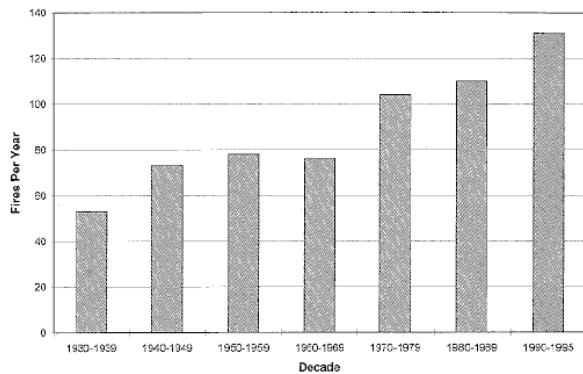


Figure 1: Average number of fires per year in the Southwest since 1930. Fires included are only those larger than 10 acres; annual data are reduced to an average for each decade or period. (USDA Forest Service 1996a).

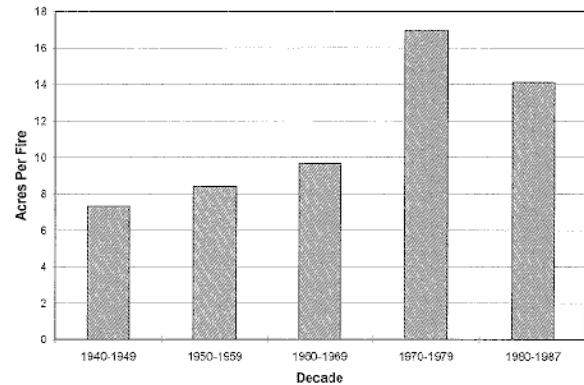


Figure 2: Average number of acres (in thousands) burned per fire in the Southwest from 1940 to 1987. (Swetnam 1988).

Other Human Impacts

Once settlers from the east coast began to arrive in western North America, the population of both humans and their animals grew swiftly, while native animals declined rapidly. The lands were increasingly utilized for timber, fuelwood, minerals, and livestock forage. Railroads and better technology developed in the region and further increased the range and rate of uses. As human populations increased native large mammals, like buffalo, elk and grizzly bears disappeared from New Mexico. Large herds of domestic sheep passed over the entire landscape, including alpine areas. The domestic sheep introduced diseases that decimated wild populations of mountain sheep. Cattle grazing in grasslands became a major industry. Grazing reduced the quantities of fine fuels for wildfires that normally passed through rangelands and forests.

Livestock grazing – including cattle, sheep, goats, and other animals – in grasslands became a major industry. Grazing reduced the quantities of fine fuels for wildfires that normally passed through rangelands and forests. However, this activity pushed many natural systems past their abilities to sustainably produce commodities (such as timber, water, and wildlife).

By 1912, foresters reported that mountains had much of their plant cover removed due to livestock grazing. Forests were in retreat, deep erosion gullies were starting to appear, and the drainage basins (intended to gather and conserve water) were no longer up to the task. Theodore Rixon (Roberts 1965), one of the first foresters in the Southwest, portrays the dismal situation:

"At the beginning the mountains and heavily timbered areas were used but little, but as the situation grew more acute in the more accessible regions the use of these areas became more general and in course of time conditions within them were more grave than elsewhere... The mountains were denuded of their vegetative cover, forest reproduction was damaged or destroyed, the slopes were seamed with deep erosion gullies, and the water-conserving power of the drainage basins became seriously impaired. Flocks passed each other on the trails, one rushing in to secure what the other had just abandoned as worthless, feed was deliberately wasted to prevent its utilization by others, the ranges were occupied before the snow had left them..." (from USDA Forest Service 1997 RMRS GTR-295)

Invasion of Non-Native Species

Another well-meaning act of early settlers had an enormous negative impact; they brought in trees from other parts of the world. Two trees in particular, both widely used to stabilize streambanks, have had a huge impact on regional environmental conditions: the Russian olive and the saltcedar. Both consume large amounts of water to thrive.

The Russian olive was introduced in the 1880s and is still sold in New Mexico today. It was often planted along streambeds to prevent erosion, but as part of that action, the Russian olive also caused those streams to dig deeper channels, which had an erosive effect of its own and caused high levels of sediment in the water.

Saltcedar (also known as tamarisk) was introduced to New Mexico in the 1800s, and it is now found along all major river and stream drainages below 6,000 feet. In the Southwest, saltcedar occupies about 1.5 million acres. The salt from which the tree takes its name is deposited into the soil and kills off native plants. It's also a heavy water-user, and it causes the same channel deepening and erosion described above for the Russian olive.

Research indicates that both these species are highly invasive, often entirely displacing cottonwoods and other native plants. Replacement of native plants by exotic (non-native) ones decreases the numbers of species of native birds, reptiles, and plants. Loss of suitable habitats may eventually lead to extinction of some native plants and animals.

The Present

The current conditions of New Mexico's forests and watersheds are relics from past events. Fire suppression has lengthened the period of time between fires far beyond the natural fire frequencies. Streamflows of major rivers have been changed by upstream dam construction that largely eliminates flood events that are crucial to natural streamside communities of plants and animals. Development has increased roads and buildings throughout most watersheds, which increases storm runoff and soil erosion.

Factors Affecting Watersheds Today

Forest Density

The majority of forests in New Mexico are 100 years old or less, making them young forests. These forests are the result of past events like timber harvesting, insects, and wildfires. The forests we see today are mostly regrowth after these disturbances. Key facts follow:

- Small trees have little economic value, so they are not harvested, resulting in forests that are too dense.
- Overly dense forests are less resistant to insect attacks and are more prone to wildfires.
- Densely forested areas support far less diversity of plant and animal species than areas where the trees are more spread out.
- The quantity of drinking water for communities in heavily forested areas may be reduced because the trees can decrease the amount of water flowing in rivers and streams.
- Drinking water supplies can be contaminated by the affects of forest fires (ash and sediments in reservoirs, rivers, and streams).

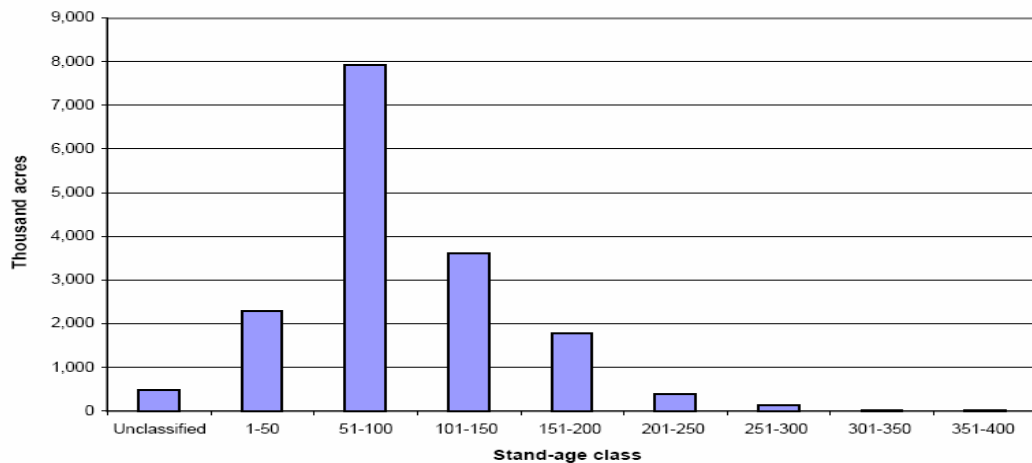


Figure 3: Area of forest lands in New Mexico by stand age class, 2000.

Human Actions That Affect Watersheds

Water quality and quantity in New Mexico is dependent on the condition of watersheds. Watersheds are increasingly affected by changes in the way people use the land in urban and rural areas.

- Scattered homes often entail the development of an unpaved road network, septic systems and wells.
- Established land-uses, like grazing and timber production, are in competition with residential land-uses.
- Roads increase erosion that eventually causes sediment loading in streams.
- Septic systems can contaminate drinkable well-water.
- Stream and riverside areas (riparian areas) have significant infestations of Russian olive and saltcedar causing reduced water flows, habitat loss, and fire hazards.
- Urban areas change the flow patterns for rivers and streams, and they prevent water from naturally replenishing ground water supplies.
- Storm water runoff from urban areas contains pollutants that may end up in streams, rivers, and ground water supplies.

Drought Conditions

While there is a perception that recent drought conditions are a modern phenomenon, research analyzing very old tree rings tells a different story. This research indicates that over the past 2,000 years, there have been multiple severe droughts, as bad as or worse than what we see today. Severe droughts kill vast numbers of trees, encourage severe wildfires, and have an enormous impact on both the human and wildlife population.

Three Efforts Under Discussion

Various efforts are underway to address watershed issues, including the following three:

- In March 2005, Governor Bill Richardson signed the Forest and Watershed Health Plan (FWHP), an innovative management framework with recommendations for ecological restoration of forests and watersheds.
- Five months later, in August 2005, the Non-Native Phreatophyte/Watershed Management Plan was released, focusing on restoration of lands that have been taken over by invasive plant species.
- In 2004, the New Mexico Forest and Watershed Restoration Institute (FWRI) was established, with the mission of assisting land managers and states to thin and restore forests to make them healthier. FWRI is part of an interstate workgroup that ties watershed restoration planning for New Mexico, Colorado, and Arizona together into one collaboration.

Forest and Watershed Health Plan (FWHP)

The FWHP was developed through a series of meetings held 2003-2005 with a broad-based planning committee of environmental, agricultural, tribal, governmental, and urban stakeholders, among others. The New Mexico Energy, Minerals and Natural Resources Department (EMNRD) conducted the meetings. The FWHP is intended to be the framework under which other efforts would be implemented. It is based on three different aspects of state work: supporting local efforts, doing strategic planning and coordinating, and managing and administering efforts.

In **supporting local efforts**, the FWHP advocates:

- Supporting and encouraging local efforts in watershed restoration;
- Developing a labor force and public support for implementation of watershed and forest restoration plans;
- Creating and maintaining a user-friendly information clearinghouse related to maintenance of New Mexico forests and watersheds, including monitoring techniques and guidelines for watershed restoration.

As a part of **state-level strategic planning and coordination**, FWHP advocates:

- Assessing watershed and forest health to form a comprehensive statewide picture of the situation;
- Facilitating the flow of resources to remove red tape from the watershed restoration process;
- Creating and continuing to implement a broad framework for prioritizing statewide efforts, including developing guidelines for measuring performance success.

In order to **manage and administer** watershed restoration efforts, the FWHP advocates:

- Creating an advisory group of stakeholders to provide direction, ensure coordination and outreach, and to update and revise the plan as needed.

(See appendix for FWHP chart illustrating collaboration plans.)

The Non-Native Phreatophyte/Watershed Management Plan (NNPP)

The NNPP is an initiative of the New Mexico Department of Agriculture that was devised with broad-based stakeholder consensus and developed in collaboration with five state agencies and the Soil and Water Conservation Commission. The NNPP has two main focuses:

- Removal of saltcedar, Russian olives, and other non-native phreatophytes (water-thirsty plants with roots in the water table) from the major watersheds of New Mexico.
- Riparian restoration and maintenance activities. The vision of the NNPP is for New Mexico to “become the national model for conservation and restoration of healthy functions to its ecosystems and watersheds through landscape-scale management of its watersheds, including invasive plant species.”

The NNPP recommends using the FWHP overall rehabilitation perspective for watersheds. This plan focuses only on that aspect of the watershed problem, guiding and supporting other organizations and citizens as they implement the needed restoration efforts; the plan covers funding, research, and monitoring, as well as coordinating efforts. The plan is designed to work with local entities, especially New Mexico soil and water conservation districts. (Soil and water conservation districts implement watershed restoration projects and are independent political subdivisions within state government – which means they have their own jurisdictions, elected officials, and authority.) This plan focuses on the restoration of riparian areas, guiding and supporting other organizations and citizens as they implement watershed restoration efforts. The plan covers funding, research, monitoring education and outreach, as well as coordinating efforts.

Some key elements of the NNPP include the following implementation actions:

- Identify and seek funding for long-term maintenance activities;
- Develop a prioritization and coordination framework for all program activities;
- Establish a broad-based technical advisory panel for the program
- Provide a statewide GIS-based landscape scale resource review to assist in development of watershed plans
- Establish performance-based measures based on the plan's templates and protocols.

NM Forest and Watershed Institute

The newly established Institute brings an unprecedented opportunity to help unite statewide ecological restoration efforts. It will help implement the FWHP and NNPP plans, as well as assist private, federal, and state land managers to use science-based treatments to restore ecosystems. The Institute operates in partnership with sister organizations in Arizona and Colorado, all funded under the same mandate.

The Institute's duties include:

- Developing, supporting and monitoring practical forest restoration treatments
- Taking scientific findings and interdisciplinary knowledge and making them feasible and realistic on a socioeconomic and environmental basis
- Collaborating with federal agencies on ecological restoration
- Assisting land managers in implementing ecological restoration techniques to reduce wildfires
- Providing technical assistance to collaborations between other entities
- Assisting with public information on the role of fire and fire management

Integration Between the Two Plans and the Institute

Both plans, as well as the workplans of the Institute, reference each other and are intended to work together as part of a multi-layered effort. However, little structure has been created to date to ensure smooth and productive collaboration. That is one of the goals of the November 2005 town hall. Common elements of the FWHP and the NNPP include:

- Restoration of healthy ecosystems
- Landscape scale management – watershed management
- Adaptive ecosystem management and monitoring
- Collaboration and cooperation between agencies and landowners
- Sustained funding
- Workforce, businesses, markets, and economic development
- Public outreach
- Technical assistance for projects
- Information transfer between practitioners, researchers, and partners
- Education of the general public and policymakers
- State office/ state function is needed

The Future

Future Needs

New Mexico's Growing Population

New Mexico's population has doubled since 1960, and that trend shows no sign of slowing down. The booming population will make extensive demands on the natural environment and its water supply, which many view as already fully appropriated.

Business Needs for Natural Resources

The resources provided by New Mexico's watersheds are a key element in many plans for both urban and rural economic development. This economic development has been identified as a critical component to the state's ability to function successfully for the benefit of its citizens in both short and long-term views.

Agricultural Needs

Farmers and ranchers face significant economic challenges. Watershed management and restoration plans that ask them to improve their lands (by removing saltcedars, for example) simply cannot be implemented without financial support for land owners. Agriculture is a critical part of New Mexico's economy and will remain so.

Increasing Concern for Environmental Issues

New Mexico's unique natural environment provides a focal point for environmental action on a wide variety of issues, from the Endangered Species Act to water rights litigation to hazardous waste disposal. Environmental issues will remain a key part of the public policy arena in New Mexico.

Predictions if No Action Taken

Overly Dense Forests

If overly dense forests are not treated, some scientists believe the following outcomes are likely:

- Larger areas of forest lands will burn at higher intensity, even with fire suppression that catches 95% of fires before they exceed 10 acres.
- Wildfires will place more sediment into streams that will clog municipal water intakes and reduce the capacity of reservoirs to hold water.
- Production of timber and other commodities in some rural areas will decrease, since the resource will be reduced by wildfires.
- Forests will continue to become more dense, and, if a drought occurs there will be widespread death of trees that increases wildfire risk.
- Large portions of currently forested lands will be replaced with brush after fires, and it will be a long time until forests return in some places.
- Diversity of plants and animals will decrease in many places.
- Forage for livestock will be less available in forests.

Saltcedar and Russian Olive

If saltcedars, Russian Olive, and other non-native phreatophytes are not managed, some scientists believe the following outcomes are likely:

- Larger stream-side areas will be occupied with non-native phreatophytes.
- Native plants and animals that reside near streams will have reduced amounts of habitat.
- Channel cutting of stream banks will increase.
- Sediments from channel cutting will clog municipal water intakes and reduce the capacity of reservoirs to hold water.
- Salts, along with crowded saltcedar stands, will decrease the forage production for livestock.
- Cottonwood gallery forests, like those in the Rio Grande Bosque, will disappear.

How the Town Hall Will Help Identify Next Steps

During the town hall, participants will discuss in depth the issues presented in this report. From those discussions will result concrete policy recommendations for elected and administrative officials. Discussions will focus on the following themes:

- What is the importance of watershed restoration to the future of NM? How is it important to you personally?
- What should NM's goals be for watersheds?
- Two plans were presented in your background document. What can administrators do to ensure that the plans are successfully implemented?
- What roles should the following stakeholders play in the implementation of the three plans and in watershed restoration efforts in general:
 - citizens
 - farmers, ranchers, and the groups who represent them
 - private land owners
 - the business community
 - environmental and conservation groups
 - acequia managers and users
 - the research community
 - tribal governments
 - soil and water conservation districts
 - state and local governments
 - the federal government
- How can we coordinate and integrate the activities of those stakeholders?
- How can New Mexico achieve political, financial, and citizen support to sustain *long-term* watershed restoration for future decades?
- How do we achieve "landscape level" long-term collaboration across government jurisdictions (such as city, county and state lines, water conservation districts, etc.)?

The town hall organizers look forward to a spirited and valuable discussion on these matters.

Glossary

Collaboration: Involving all affected stakeholders in a set of decisions that guide how ecological rehabilitation and maintenance is undertaken, supported, and evaluated.

Coordination: Making sure that those involved are aware of what other related activity is taking place. Coordination helps to maximize the efficient use of resources, promote consistency in process and standards where appropriate, and sequence efforts to achieve the greatest impact.

Disturbance regimes: The range of events, natural to an ecosystem, that temporarily change the structure and function of the systems, such as wildfire, drought, floods and insect or disease outbreak, to which the system is adapted.

Ecological capacity: The overall ability of an ecosystem to maintain its natural, original, or current condition and to produce goods and services. This includes both the current stock and the ability of an ecosystem to produce more of a specific resource. This includes surface and subsurface renewable resources.

Ecological processes: The natural cycles, disturbances and interactions of all parts of an ecosystem, such as nutrient and mineral cycles, fire or flood incidence, and species interactions.

Ecological restoration: A broad framework of activities for returning ecosystems to healthy functioning. Ecological restoration activities are based on specific landscapes and objectives, and should incorporate past experience as a guide to sustainable futures. These activities include, but are not limited to: reducing overly-dense woody vegetation, re-establishing native vegetation, repairing erosion and soil condition, restoring hydrological function, and monitoring all these activities for effective long-term maintenance.

Ecosystem: The complex of a community of organisms interacting with one another and with the chemical and physical factors of their environment. In New Mexico, the pinion-juniper forest is an example of an ecosystem.

Ecosystem functions: The collective life activities of organisms in an ecosystem and the corresponding effects these natural activities have on the physical and chemical conditions of their environment.

Economies: In New Mexico, economies take many forms, and include those that are amenity-based, such as tourism, recreation, real estate and other like industries; product-based, which refer to forest products, mining and other extractive industries; as well as those that are agriculturally based such as farming and ranching.

Ephemeral streams: Streams that flow only during or immediately after periods of precipitation.

Evapotranspiration: The combined diffusion of water vapor to the atmosphere from transpiration from plants and evaporation from soil and water surfaces.

Forest: Areas of land covered mostly by trees, including woodlands, riparian communities, shrub land, and other areas with woody plants, interspersed with meadows and grasslands.

Health: A condition where the system's parts and functions are sustained over time and where the capacity for ecological self-repair is maintained within a natural range of variability, allowing goals for sustainable uses, values and services to be met.

Hydrologic cycle: The continuum of the transfer of water from precipitation to surface water and ground water, to storage and runoff, and to the eventual return to the atmosphere by transpiration and evaporation.

Integration: Considering the other initiatives taking place, as well as the impacts of these on the larger ecosystem over the long term, and having this consideration inform the effort.

Landscape: A spatial mosaic of several ecosystems, landforms, watersheds, and plant communities that are repeated in a similar form across a defined area, irrespective of ownership or other artificial boundaries.

Landscape approach: The way the State will coordinate and manage ecological restoration and maintenance activities across New Mexico. The approach will be based on the scale at which natural processes (such as wildlife and flooding) occur, will encourage collaboration across jurisdictions and ownerships, and will consider causes of degradation to the specific ecosystem. This approach is intended to replace the isolated, smaller-scale, symptom-specific projects of the past.

Landscape scale: The size of the landmass in which an action is taking place. Landscapes can vary in size from a few to several thousand square miles and may continue across drainage divides to where the consistent pattern ends.

Phreatophyte: A deep-rooted plant that obtains its water from the water table or the layer of soil just above it.

Rehabilitation: Making the land useful again after a disturbance. It involves the recovery of ecosystem functions and processes in a degraded habitat. Rehabilitation does not necessarily reestablish the pre-disturbance conditions, but does involve establishing geological and hydrologically stable landscapes that support the natural ecosystem mosaic.

Restoration: Reestablishment of the structure and function of ecosystems. The restoration process reestablishes the general structure, function, and dynamic but self-sustaining behavior as closely as possible to pre-disturbance conditions and functions.

Riparian: The geographically delineated areas with distinct resource values that occur adjacent to rivers, streams, lakes, ponds, wetlands, and other water bodies.

Stakeholder: Inclusively, all those interests involved in ecological restoration and maintenance, including federal, State, Tribal, and local governments, private landowners, academia, public interest groups, citizens, and others.

Sustainable: A level of human use of a natural resource that can continue through time without diminishing the resource's productivity or resilience.

Tribes/Tribal: Collectively represents New Mexico's 22 individual Tribes, Indian Nations, and Pueblos and their respective governments.

Watershed: A region or land area that is drained by a single stream, river or drainage network, and includes all of the land within the entire drainage area. An example of a large watershed would be the Rio Grande valley from Colorado to Texas. Examples of smaller watersheds within the larger watershed are the Chama River valley and the Rio Puerco valley.

Woody biomass: Wood that has been produced as a result of forest thinning operations, primarily small diameter trees and slash that are not utilized for standard lumber production.

Background Citations

NM Forest and Watershed Health Plan: <http://www.emnrd.state.nm.us/emnrd/forestry/FWHPlan/FWHPlanMain.htm>

NM Non-Native Phreatophyte/Watershed Management Plan:
<http://nmdaweb.nmsu.edu/DIVISIONS/APR/TAMARISK/tamariskhome.html>

An Assessment of Forest Ecosystem Health in the Southwest: http://www.fs.fed.us/rm/pubs_rm/rm_gtr295.html

USDA Forest Service, 2003, New Mexico's Forests, 2000: http://www.fs.fed.us/rm/ogden/pubs/pdfs/rmrs_rb003.pdf

Federal Healthy Forest Restoration Act: <http://www.healthyforests.gov/initiative/legislation.html>

National Forest Planning Rules, 2005:
http://svinetfc2.fs.fed.us/fp/r2/arnf/principles_of_planning/Principles%20of%20Nat%20Forest%20Planning.asp

USEPA Watershed Protection Approach: <http://www.epa.gov/owow/watershed/index2.html>

Appendix

Collaborative Frameworks

**NM Forest & Watershed
Health Plan & Partnerships
(EMNRD)**

