

# Mendocino National Forest Ecological Restoration Plan

## Overview

### Ecological Restoration (ER)

The proclaimed boundaries of the Mendocino National Forest (MNF) encompass 1,079,850 acres, of which, 894,399 (83%) are National Forest System lands, 181,708 (17%) are private lands, and 3,864 (.4%) are owned by other public agencies. A third of the area within the MNF boundaries is federally-designated Wilderness: Snow Mountain Wilderness (37,679 acres), Yolla Bolly-Middle Wilderness (147,070 acres), Yuki Wilderness (53,887 acres), and Sanhedrin Wilderness areas (10,571 acres).

Our mission is to contribute to a sustainable resilient ecosystem, by restoring and improving watersheds and creating fire-adapted landscapes, while providing for a safe, inclusive and diverse environment for employees and the public. We are committed to the active management and stewardship of the land, providing solutions that are science-based, legal, and socially acceptable while fostering partnerships and empowering employees.

The philosophy of restoration on MNF focuses on creating ecologically valuable biological communities in the context of a developed or disturbed landscape while fostering public and partnership support. Our focus of restoration is that the restored landscape enhance not only the plant life, but wildlife populations, ecological functioning (e.g., watershed and forest health, carbon sequestration, recreation, road/trail maintenance, etc.), and human enjoyment. MNF promotes the protection of both life and property affected by wildfire and healthy resilient ecosystems through collaborative stewardship.

### Ecological Services Provided

Mendocino National Forest provides very significant water resources to the state of California. Water flows from the mountains of the Forest into two of the state's largest river systems- the Sacramento and the Eel. This water benefits California through:

- Annual diversions averaging 190 million cubic meters from the Main Fork of the Eel are used for agricultural, municipal and industrial activities via the Sonoma County Water Agency as far south as Marin County.
- Eel River water generates up to 9.4 MW of power via the diversion at the Potter Valley powerhouse.

- Main Fork of the Eel waters also supply the Potter Valley Irrigation District for Agricultural Use.
- The Middle Fork of the Eel hosts one of the State's last and best anadromous fisheries, critical to maintain since most are now so imperiled across California.
- Nearly 240 million cubic meters of water per year to Yolo County municipal and agricultural users via Indian Valley Reservoir and Clear Lake. Most tributaries of these lakes are in the Forest.
- Several agricultural water and municipal supplies in the Sacramento Valley such as the Stony Creek Water District, Paskenta Water District and the Corning Water District derive water from Forest streams and small rivers
- Hundreds of thousands of people on Lake Pillsbury, Van Arsdale Reservoir, Lake Mendocino, Clear Lake, Indian Valley Reservoir, East Park Reservoir, Black Butte Reservoir and Stony Gorge Reservoir use Forest water resources to fish, swim, ski, and generally recreate and have a nice time with their families and friends.

## Goals, Challenges & Opportunities

### Goals

Improve overall forest health, diversity, resistance and resilience to serve the needs of the public

- Protect communities, natural and cultural resources, and developed areas from unwanted, high-intensity wildland fires
- Identify and prioritize vegetation treatments in areas where hazardous fuel loading has occurred as a result of fire suppression and past fires
- Protect and restore water resources and watershed health
- Manage wildland fires, consistent with resource objectives, for multiple objectives; consider firefighter and public safety, benefits, and values to be protected

## Challenges

- **Hazardous Fuels:** Aggressive fire suppression and inadequate vegetation treatment has accelerated the accumulation of fuels and created extreme fire hazards in some areas of the forest.
- **Limited Operating Period:** LOP's to protect wildlife, fisheries, and plants can cause delays in project implementation.
- **Surveys:** MNF has not focused enough resources on conducting surveys as needed (e.g., Northern Spotted Owl surveys).
- **Infrastructure:** Lack of biomass processing plants makes the utilization of biomass on the Mendocino unfeasible. There is a lack of sawlog processing facilities on the west side of the Mendocino creating long haul distances to a mill. This makes Mendocino timber sales difficult to sell.
- **Litigation & appeals:** Receiving notice of intent to litigate on a proposed project delays and/or stops restoration progress. Currently the Forest Leadership Team is working on plans to break down the barriers of resistance through collaboration.
- **Declining budgets:** The value of the penny is decreasing as the need for ecological restoration is increasing. Though leveraging external funding through state and private sources is a valid concept, these other parties are also experiencing declining budgets.
- **Approach to restoration:** Lacking a landscape scale approach, this will be achieved through FireScope (see below).
- **Telling our Story:** MNF has not adequately documented, recorded, and shared our successes.

## Opportunities

### Institute the FireScope Model

FireScope is a collaborative “all lands approach” to ecological restoration that crosses jurisdictional boundaries and involves a range of community partners. Using a three-part process: collaboration, science, and environmental analysis; MNF will enlist and engage private landowners, interested parties, and Government agencies to identify treatment types across a landscape with clear management objectives, including monitoring and adaptive management.

MNF will also develop a hierarchical Land Type Association (LTA) as a base layer of ecological units/systems. One of the principal uses of LTA is to provide information on ecological patterns and

potentials useful for identifying alternatives and setting vegetation management objectives at landscape and watershed scales.

### Collaboration

MNF will continue to improve our relationship and partnership through collaborative efforts with local, state, tribal, and federal agencies, and leverage programmatic agreements to proactively complete formal consultation on land and resource management projects: (e.g., streamline Section 7 consultation with regulatory agencies in support of the Endangered Species Act).

Through the use of open standards and practices of conservation, MNF will improve collaboration with external public and private interest groups; this includes inviting interested parties to field trips and other learning venues.

### Stewardships

MNF will continue to promote a closer working relationship with local communities in a broad range of activities that improve land conditions.

### Grants

MNF will continue to seek out and leverage grant opportunities (e.g., OHV, EPA, CVPI-Act, Rocky Mountain Elk Foundation)

## Plans, Tactics & Integration FY2013 Ecological Restoration Plans

- Though guided by the WO and the RO on target accomplishments, MNF is focused on outcomes of restoration efforts. Current and future projects on the MNF demonstrate an integration approach to restoration by combining the various Budget Line Items (BLIs) and treatments (e.g., prescribed burning, thinning, vegetation and roads maintenance, etc.). The table below shows our planned restoration activities for fiscal year 2013:

### Tactics

#### Restore ecosystem processes and create resilient ecosystems

- Integrate the existing program management effort FireScope
- Develop a basis for restoring sustainable, more natural fire regimes across large areas such as entire mountain ranges or large landscapes
- Improve management techniques and incorporate lessons learned from past and on-going work

Measure Name	Quantity
Acres of forest vegetation established	318
Acres of forestland vegetation improved	342
Volume of Timber sold (CCF)	15,500
Acres of rangeland vegetation improved	3,102
Miles of system trail maintained	121
Miles of road decommissioned	5
Miles of high clearance system roads receiving maintenance	242
Number of acres treated to reduce the risk of catastrophic wildland fire	4,230
Highest priority acres treated annually for noxious weeds and invasive plants on NFS lands	61
Acres of water or soil resources protected, maintained or improved to achieve desired watershed conditions	1,482
Acres of lake habitat restored or enhanced	7
Miles of stream habitat restored or enhanced	17
Acres of terrestrial habitat restored or enhanced	8,228

The Appendix of this document provides a map of current and future projects, map and pictures of past roads/trail maintenance in support of ecological restoration.

- Invest strategic work towards our goal of self-sustaining landscape system that provides desired ecosystem services and conditions

#### Apply innovative and scientific approaches

- Take advantage of mosaic patterns and reduced fuels left by past fires and treatments
- Use the various tools, techniques and technologies available to reduce undesirable effects of unwanted fire behavior on people and communities
- Incorporate research and monitoring to answer key questions
- Build on past successes; focus on future restoration action

#### Keep people engaged in all activities

- Develop a shared vision by seeking out and working with partners and the public
- Share our experiences with others

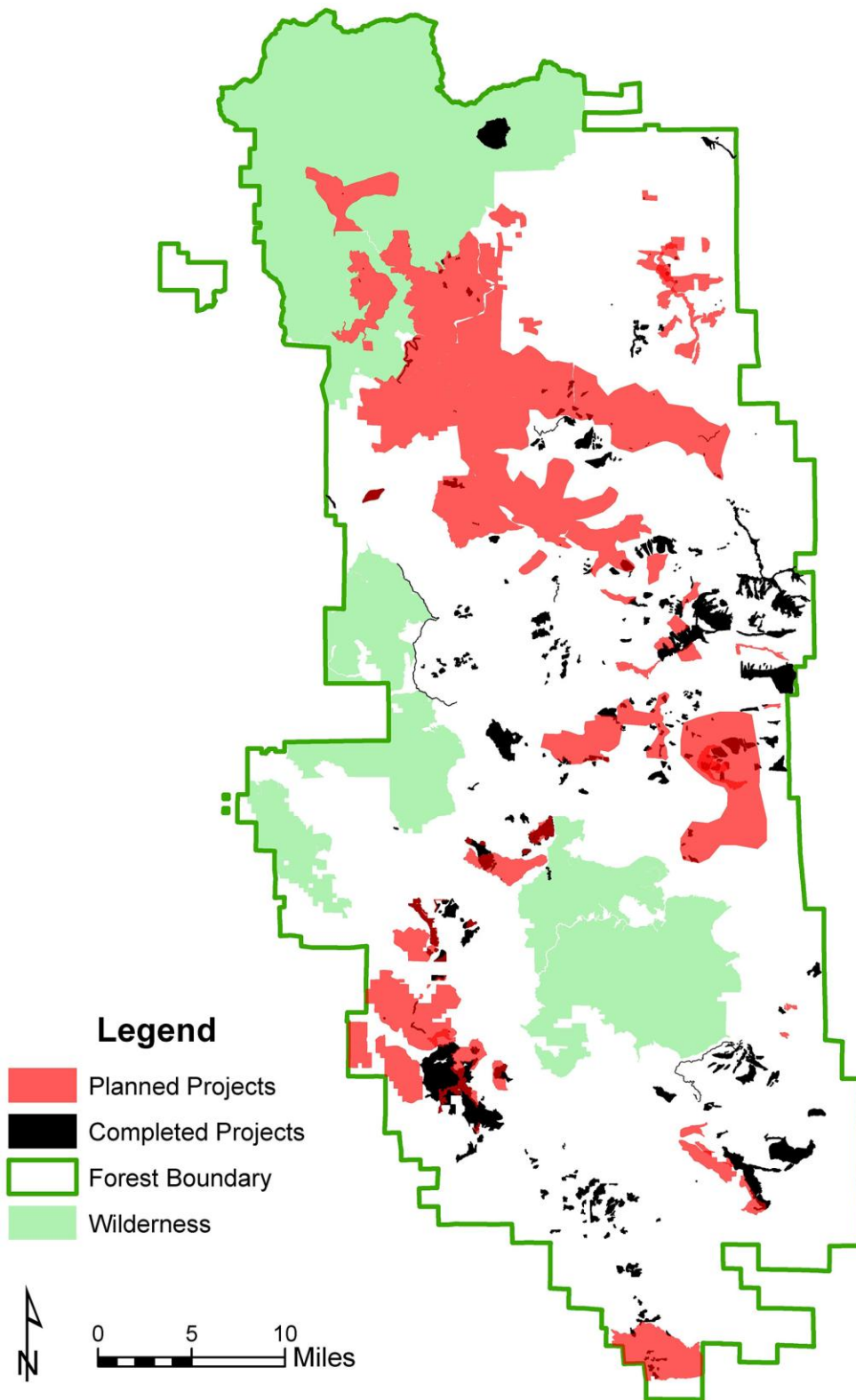
## Integration of Budget and Actions

In order to increase the pace and scale of ecological restoration with constricting budgets, MNF will identify and utilize opportunities to leverage resources and integrate ecological restoration activities and Budget Line Items (BLIs) across multiple functions, and with other agencies and partners, across broad landscapes. MNF will seek opportunities to improve efficiency by:

- Integrating various BLIs and accomplishing multiple restoration activities in a given area to provide a greater restoration effect or larger restoration footprint (e.g., vegetation treatment, prescribe burning, treating invasive species, improving habitat or connectivity, and addressing legacy road issues in a project area; coordinating work across land ownerships using the All Lands Approach).
- Contracting bundles of work to allow coincident use of equipment or crews to accomplish multiple ecological restoration activities in an area at lower cost (e.g., maximizing the use of stewardship contracting authorities, harmonizing different priorities across resource areas to accomplish a lower priority restoration action now rather than come back to the area and do the action independently later).
- Integrated planning of nearby projects to streamline pre-NEPA surveys and fieldwork and simplify NEPA analysis (e.g., coordinating project boundaries and project timelines to streamline field work and maximize information benefit and allow for integrated, multi-resource field work).
- Selecting, where appropriate, initial sites for ecological restoration that have immediate ecosystem benefits or can contribute to establishing ecosystem service infrastructure (e.g., selecting sites for initial restoration that can help maintain or establish infrastructure for beneficial use of restoration biomass).

Future “Firescape” would look at the entire forest and beyond. This will allow for the option to manage fires for multiple objectives forest-wide.

**ECOLOGICAL RESTORATION PROJECTS ON THE MENDOCINO NATIONAL FOREST**



## Restoration Examples

### Atchison Road and Ericson Road stormproofing and fish passage projects (2009)

These projects “stormproofed” roads in the Black Butte (Atchison) and Lake Pillsbury (Ericson) watersheds by constructing rolling dips to reduce concentrations of runoff from the roadway, and critical dips to lessen stream diversion potential. Also included in the projects was road brushing, outsloping selected road segments, and cleaning of culvert inlets. Atchison had a total cost of \$149,910, treated 31 miles of native-surfaced road, and opened/restored 3 miles of salmon

and steelhead habitat. Ericson had a total cost of \$66,384 (\$27,810 of Forest Service funding and \$38,574 from other sources) and treated approximately 8 miles of native-surfaced road.

Insloped roads concentrate surface runoff and rolling dips will benefit the watersheds and threatened/endangered species through sediment reduction. Critical dips at culverts will potentially prevent hundreds of cubic yards of sediment resulting from culvert fill/failure. Stormproofing is especially important as most of the culverts on the Forest are over 30 years old and are approaching the end of their expected service.

Atchison (before)



Ericson (before)



Before: Existing road systems were predominantly insloped with ditch and crossdrains.

Atchison (after)



Ericson (after)



After: Rolling dips are constructed at intervals that greatly reduce potential runoff accumulations.

## Middle Creek Open Riding Area Restoration Project

This project has significantly reduced sediment from the OHV staging area into Middle Creek, which is habitat for the Clear Lake Hitch.



Photo 1 (Before): Picture is taken looking toward the Elk Mountain Rd bridge over the West Fork of Middle Creek. In the foreground is the OHV riding area being subsoiled to alleviate compaction. The highly compacted riding area would contribute significant amounts of runoff and fine sediment into the West Fork during even frequent low-intensity rainfall events.



Photo 3 (After): This picture was taken from about the same spot as the first one (The bridge over the West Fork can be seen in the background), about 2 years after completion. Native vegetation has been established creating a bio-filter for overland flow coming from the remaining riding area.



Photo 2 (During): Picture was taken from the bridge over West Fork Middle Creek the first winter after completion. Straw was used to stabilize the area until vegetation could take hold. Overland flow can be seen ponding in depressions allowing the majority of the runoff to infiltrate back into the soil and deposit fine sediments instead of spilling into West Fork. Also seen in this picture are two of the rocked outlets that were constructed for infrequent high-flow events. Rocked and waddled outlets also helped trap sediment. These outlets serve to also direct return flow back into the West Fork when it floods over its banks into the area.



Photo 4 (After): Close-up of the sign. Also the greyish area to the right is a ponding/infiltrating area. Distinct vegetation around the edges is comprised of riparian species. These ponded areas also provide habitat for macroinvertebrates.