Chapter 1

Region 5 Ecological Restoration

Leadership Intent

The mission of the Forest Service is to sustain the health, diversity and productivity of the Nation's forests and grasslands to meet the needs of present and future generations. It is our intent to establish a regional vision and corresponding goals for Ecological Restoration consistent with this mission and the laws, regulations and policies that guide National Forest management.

Our goal for the Pacific Southwest Region[1] is to retain and restore ecological resilience of the National Forest lands to achieve sustainable ecosystems that provide a broad range of services to humans and other organisms. Ecologically healthy and resilient landscapes, rich in biodiversity, will have greater capacity to adapt and thrive in the face of natural disturbances and large scale threats to sustainability, especially under changing and uncertain future environmental conditions such as those driven by climate change and increasing human use. Our goal is based on a commitment to land and resource management that is infused by the principles of Ecological Restoration and driven by policies and practices that are dedicated to make land and water ecosystems more sustainable, more resilient, and healthier under current and future conditions.

Ecosystem services are the goods and services that flow from wildlands and forests that are valued and used by people, and that directly or indirectly support human well-being. Wildlands and forests are valued for basic goods, such as wood, fiber, and water, but these ecosystems also deliver important services that are perceived to be free or limitless such as air and water purification, flood and climate regulation, biodiversity, scenic landscapes, wildlife habitat, and carbon sequestration and storage. The National Forests are important providers of ecosystem services to humans and to other inhabitants of our wildlands as well. Our commitment to restoration-based management includes a commitment to a renewed focus on the sustainable delivery of ecosystem services.

1. The Pacific Southwest Region (also known as Region 5) includes California, Hawaii and the Pacific Islands. It also includes small portions of the state of Nevada, managed by the Inyo National Forest, and the state of Oregon, managed by the Klamath National Forest.

Meadow restoration in the Tahoe National Forest

In the 21st century, three major drivers of change define restoration needs on the National Forests of the Pacific Southwest Region: climate change and shifting hydrologic patterns; increasingly dense and unhealthy forests; and rapidly growing human populations. These synergistic sources of change are resulting in increasingly over-allocated and undervalued ecosystem services (especially water); a dramatic increase in disturbance events such as uncharacteristic large-scale wildfires, floods, and insect and disease outbreaks; new and growing threats from terrestrial and aquatic invasive species; and a growing need to revitalize rural economies in California, Hawaii and the Pacific Islands.

While sound restoration work is being conducted throughout the Region to increase forest and watershed resilience, important indicators suggest that disturbance impacts already outpace the benefits of this work, and that we will fall further behind over time. Wildland fires in California are becoming larger and more frequent. Of greatest concern is a notable increase in the area of forestland burning at high severity over the last quarter-century. Fire exclusion over many decades, in conjunction with other forest management choices, has resulted in dense, middle-aged forests over large areas of California. These forests are highly susceptible to severe wildfire, which fragments forests, emits carbon, increases erosion rates and sedimentation, negatively affects water quality and delivery, and damages old-growth forest habitats that sustain important components of the Region's biodiversity.

Dense middle-aged forests are also more susceptible to drought stress, large-scale insect outbreaks and disease epidemics.

Seedling planted after a wildfire, Lassen National Forest.

The ability of the Region's forestlands to sequester and store carbon has become a matter of national and international significance. Human additions of greenhouse gases to the atmosphere are altering the climate, and federal land management agencies like the Forest Service are expected to play a major role in U.S. adaptation and mitigation responses to global warming. Mitigation responses revolve around the maintenance and enhancement of carbon sequestration processes on forestlands. In the Mediterranean climate that characterizes much of California, annual summer droughts and frequent fire are the norm, retention of carbon in most of the forest landscape requires stand structures and compositions that are resilient to fire. Nearly a century of fire exclusion in California, coupled with other management decisions on both private and public land, has resulted in forests that are at an increasing risk of loss due to large scale disturbances. There is an additional crisis taking place in our Southern California Forests as an unprecedented number of human-caused fires have increased fire frequency to the extent that fire-adapted chaparral can no longer survive and is being replaced with non-native annual grasses at an alarming rate. To counter these trends, forest managers will need to significantly increase the pace and scale of the Region's restoration work. Only an environmental restoration program of unprecedented scale can alter the direction of current trends.

From this point forward, Ecological Restoration will be the central driver of wildland and forest stewardship in the Pacific Southwest Region, across all program areas and activities. Future Land and Resource Management Plans, other strategic plans and project plans will identify Ecological Restoration as a core objective. Our Ecological Restoration work will include coordination and support for all wildlands and forests in the Region to promote an "all lands" approach to restoration. It will lead to a new way of doing business with our partners and neighbors, to coordinate work and priorities across forests and wildlands regardless of ownership. Collaboration across ownerships and jurisdictions to achieve Ecological Restoration will require active use of Forest Service State and Private Forestry authorities; an expanded effort to engage tribes, partners, and neighbors and to work in closer coordination with other agencies.

Resource program managers will have the responsibility for promoting Ecological Restoration activities including, but not limited to, management of vegetation, water, wildland fire, wildlife and recreation. Activities may include monitoring resource conditions; managing, restoring or enhancing terrestrial and aquatic ecosystems; or regulating human uses. Activities to be promoted include, among others, forest thinning and prescribed fire to decrease fuel loading and increase forest heterogeneity; meadow and riparian restoration to improve watershed function; environmentally and ecologically sensitive fire management practices; invasive species eradication; and wildlife and fish habitat improvement. Emphasis will be placed on expanding and developing partnerships to increase organizational capacity and the use of large-scale stewardship contracts operating at the landscape level to achieve restoration goals. We will expand and improve our consultation with tribal governments to utilize their traditional knowledge of stewardship and caring for the land. Emphasis will be placed on collaboration with stakeholders, communities, local government, volunteers, and citizens to facilitate dialogue and to decrease conflict in planning and implementing Ecological Restoration efforts.

With Ecological Restoration as the driving force behind the Region's work, and with a pace and scale

sufficient to reverse current trends, it is our intent to accomplish the following in the next 15–20 years:

- Work together to achieve a collaborative and financially supported effort among forest land management agencies, private land owners, and the public to implement a large scale restoration program to accelerate the scale and pace of forest restoration activities on both public and private lands.
- Increase forest resilience through treatments (including prescribed fire and thinning) and wildfire, resulting in resource benefits to approximately 9 million acres on national forest system lands.
- Restore at least 50% of accessible, degraded forest meadows to improve their habitat function and ability to hold water longer into the summer and deliver clean water when most needed.
- Decrease the occurrence of uncharacteristically severe wildfires and their associated impacts through environmentally and ecologically sensitive vegetation treatments, fire management, and public education.

Loggy Meadow Restoration Project on the Sequoia National Forest. The project stabilized stream banks and allowed the stream to access its flood plain, returning the area to a more natural condition.

- Work with key partners in Southern California to expand fire prevention efforts in order to retard the loss of native ecosystems like chaparral and coastal sage scrub.
- Ensure vegetation and fire management efforts are grounded in concern for biodiversity and ecological process both before and after disturbances like fire.
- Reforest after wildfire where appropriate and implement suitable stand maintenance activities that meet project goals and site conditions.
- Ensure the retention and sustainability of forests, forest resources, and forest carbon over the long term, even as climates change.
- Expand watershed improvement programs at the forest level (inventory, prioritization, and scheduling of restoration).
- Target fuel reductions activities in key watersheds for protection of aquatic species and municipal watersheds.
- Work with partners to increase restoration actions that will improve habitat connectivity.
- Decrease the impacts of invasive species through preventative practices, rapid response control, management, rehabilitation and restoration, emphasizing cooperative work with federal, state, and community partners.
- Restore landscapes affected by unmanaged recreation.
- Identify the minimum road system needed for safe and efficient travel for administration, utilization and protection of National Forest System lands; establish priorities and a time schedule to decommission or close unneeded roads.
- Increase conservation education, interpretation and volunteer programs to promote understanding and support for restoration actions and increase understanding of the value of healthy watersheds and the ecosystem services that they deliver.

With a focus on Ecological Restoration, the following ecosystem services and community economic benefits will be enhanced:

- Delivery of clean water and an improved flow regime that benefits people, fish, and wildlife
- Fish, wildlife, and plant habitat, for both common and rare species
- Maintenance of biodiversity
- Forest resilience in the face of climate change and changing disturbance processes
- Carbon sequestration

- Air quality
- Rural economic health
- Outdoor recreation and scenic beauty
- Landscapes for health and renewal
- Wood products
- Wood biomass for energy
- Forage for wildlife and livestock
- Green economic activity

The Student Conservation Association (SCA) is one of the many partners that help restore California's National Forests. On the Angeles National Forest, SCA students restore a trail as part of a partnership called the "Angeles Wildfire Recovery Project.

As we work toward the goals outlined above, we will learn and adjust as we go. Over time there will be new science, new ideas, and new collaborations that will improve our understanding. With this new understanding, we will make course corrections in policy and practice and move even more efficiently toward our overall goal of resilient forests and wildlands.

A wood chipper processes woody biomass from a restoration thinning project, Mt. Hope Stewardship Project Plumas National Forest.