



Siskiyou Crest National Monument

America's First Climate Refuge



January 2010

The Klamath-Siskiyou Wildlands Center (KS Wild) is an advocate for the forests, wildlife and waters of the Rogue and Klamath Basins. We work to protect and restore the extraordinary biological diversity of the Klamath-Siskiyou region of southwest Oregon and northwest California. We use environmental law, science, education and collaboration to defend healthy ecosystems and help build sustainable communities.

Thanks

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EXECUTIVE SUMMARY

The Siskiyou Crest is a striking geographic feature straddling the Oregon/California border in the ecologically rich Klamath-Siskiyou bioregion. The peaks and forests of the Siskiyou Crest extend some 90 miles from the Cascade Mountains toward the coast, dividing the Rogue watershed in the north from the Klamath watershed in the south. The vast majority of this land is federally-owned, with management responsibility undertaken by the Klamath, Rogue River-Siskiyou and Six Rivers National Forests and the Medford District BLM.



The Siskiyou Crest sits at the center of the world class Klamath-Siskiyou region, long recognized for its global biological significance and considered an Area of Global Botanical Significance by the World Conservation Union, a global Centre of Plant Diversity, and proposed as a possible World Heritage Site. It has also been identified as a top priority Ecoregion for climate change mitigation, adaptation and carbon sequestration.

However, it is threatened by a number of unsustainable practices and uncoordinated, and often contradictory, management priorities. Logging, mining, livestock grazing, fire suppression, excessive off-road vehicle use, and road construction have all adversely impacted the Crest. Habitat fragmentation is compounded by the lack of a coordinated approach among the federal land management agency units charged with administering portions of the Crest.

However, it is threatened by a number of unsustainable practices and uncoordinated, and often contradictory, management priorities.

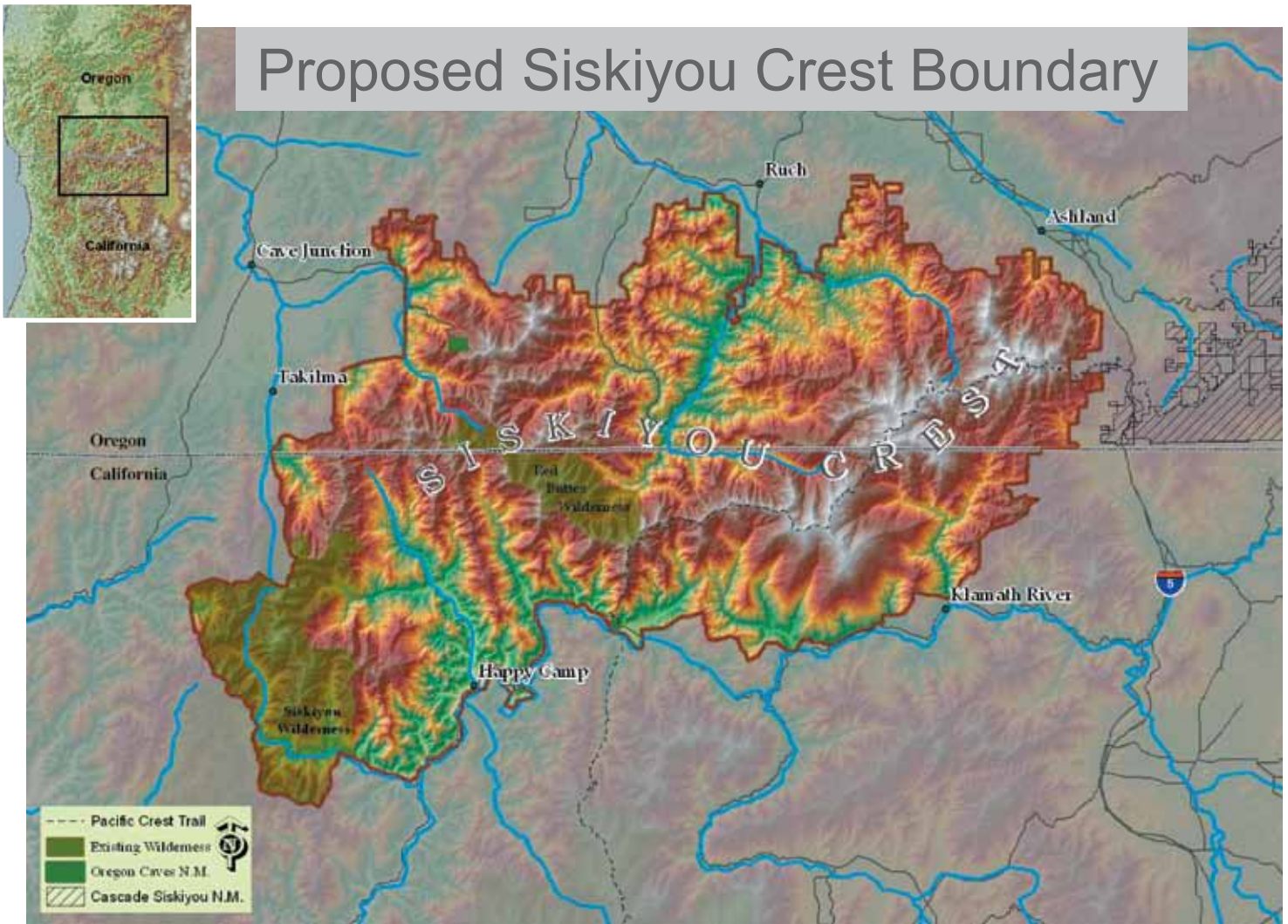
Residential communities and small towns are sparsely nestled in the foothills of the Crest. Many of these communities once drew their livelihoods primarily from resource extraction but are increasingly shifting to outdoor recreation, sustainable agriculture and service economies. It has been conclusively shown that such gateway communities benefit greatly from more substantive protections for high quality public lands.

RECOMMENDATIONS - SEE PAGE 28

- 1) SISKIYOU CREST NATIONAL MONUMENT: AMERICA'S FIRST CLIMATE REFUGE
- 2) RESTORATION PLAN
- 3) KARUK ECO-CULTURAL RESOURCE AREA

For these reasons, KS Wild recommends the designation of a new National Monument as America's first 'climate refuge' to protect the outstanding ecological and recreational features of the Siskiyou Crest, as well as contribute to regional economic sustainability. This Monument designation would cover approximately 600,000 acres of high quality habitat and rare plant areas on the Crest, create a comprehensive management plan for active restoration of previously-logged and fire-suppressed forests, and engage Tribal governments in the management of their ancestral lands.

Proposed Siskiyou Crest Boundary



SCIENTISTS HAVE RANKED THE BIODIVERSITY OF THE KLAMATH-SISKIYOU ECOREGION AMONG THE WORLD'S MOST OUTSTANDING TEMPERATE CONIFEROUS FORESTS.



GEOGRAPHIC OVERVIEW

The Siskiyou Crest is a striking geographic feature straddling the Oregon/California border in the ecologically rich Klamath-Siskiyou bioregion. The peaks and forests of the Siskiyou Crest extend some 90 miles from the Cascade Mountains toward the coast, dividing the Rogue watershed in the north from the Klamath watershed in the south.



The Siskiyou Crest encompasses elevations from approximately 1,000 feet along the banks of the Klamath River near Happy Camp, CA to over 7,500 feet on the Siskiyou's highest peaks around Mt. Ashland, OR. This area is home to one of the highest concentrations of botanical diversity in the United States and forms one of the most valuable wildlife corridors in the West.

The proposed Siskiyou Crest National Monument is located on both sides of the California and Oregon border, with slightly more than half of it on the California side. The proposed monument falls within Jackson and Josephine Counties in Oregon, and Siskiyou County, with a small overlap of Del Norte County, in California.

The proposal borders the Klamath River to the south, the Applegate Valley to the north, the existing Siskiyou Wilderness on its western edge, and the existing Cascade Siskiyou National Monument on the eastern edge. This area encompasses the Red Buttes Wilderness, the Oregon Caves National Monument, and a large portion of the Karuk Tribe's ancestral territory.

ECOLOGICAL VALUES

A GLOBAL HOT SPOT FOR BIODIVERSITY

The Siskiyou Crest sits at the center of the world class Klamath-Siskiyou region. The mountain ranges and river valleys that define this region are some of the most spectacular in America and support globally important concentrations of biological diversity.

The Klamath-Siskiyou ecoregion of southwest Oregon and northwest California has long been recognized for its global biological significance and is considered an Area of Global Botanical Significance by the World Conservation Union, a global Centre of Plant Diversity, and has been proposed as a possible World Heritage Site. More recently, World Wildlife Fund US scored the Klamath-Siskiyou as one of their Global 200 sites reaffirming its global importance from the standpoint of biodiversity.

- Stritholt J.R., R. F. Noss, P. A Frost, K. Van-Borland, C. Carroll, G. Heilman, Jr. 1999. A conservation assessment and science based plan for the Klamath-Siskiyou

Based on comparisons of species richness, endemism, unique evolutionary and ecological phenomena (e.g., species migrations, adaptive radiations), and global rarity of habitat types, scientists have ranked the biodiversity of the Klamath-Siskiyou Ecoregion among the world's most outstanding temperate coniferous forests.

- DellaSala, DA, Reid, SB, Frest, TJ, Strittholt, JR, Olson, DM Natural Areas Journal [Nat. Areas J.]. Vol. 19, no. 4, pp. 300-319. Oct 1999. A Global Perspective on the Biodiversity of the Klamath-Siskiyou Ecoregion

The Siskiyou Crest offers one of the best conservation opportunities in the United States to preserve and restore such a wide-ranging assemblage of ecosystem types and roadless forests with such a rich abundance of species in a relatively small reserve area. Referring to the 'Siskiyou Biome', the Bureau of Land Management (BLM) writes:

This biome has a diversity of wildlife and habitats not usually found in such a limited area. ODFW (2005) identifies the Siskiyou mixed conifer forests and woodlands as the most diverse forest habitats in Oregon. The Klamath Mountains are considered to be a herptile "hotspot" by Bury and Pearl (1999), supporting 38 native species of amphibians and reptiles. . higher than any similar-sized mountain range in the Pacific Northwest (Olson et al. 2001). Sixty-five Bureau Sensitive and Federally Listed species are documented or suspected in the Siskiyou Biome.



The highest avian species richness west of the Cascade crest in Oregon and Washington occurs in the Klamath Mountains (Ralph et al. 1991). The Klamath-Siskiyou ecoregion is an area of "extraordinary biodiversity," rated "among the world's most outstanding temperate coniferous forests" (DellaSala et al. 1999). They analyzed 2,377 terrestrial animals (including snails, butterflies, birds, mammals, reptiles and amphibians), and 168 or 7 percent were found nowhere else.

Influenced by both the Mediterranean climate of California and the strong marine influence of the Pacific Northwest, as well as a combination of soil types including a large area of serpentine, the Siskiyou Biome is one of the most botanically diverse in North America (Stein et al. 2000). Approximately 2/3 of the known rare plants and fungi (97 species) in Western Oregon occur in the Siskiyou Biome. This botanical diversity was a major reason for the creation of the Cascade Siskiyou National Monument in 2000. Unique plant communities in the Siskiyou biome are threatened by starthistles, knapweeds, thistles, brooms, puncture vine, knotweeds, Dyers woad, leafy spurge, loosestrife, false broom, yellow flag iris, and Sudden Oak Death.

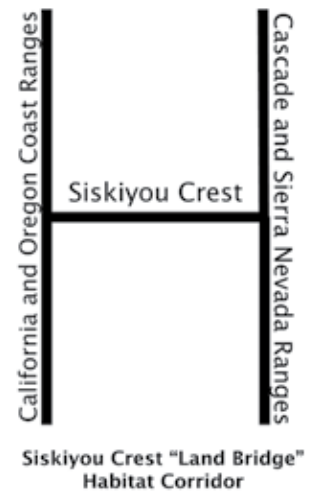
- BLM Vegetation Treatments Using Herbicides on BLM Lands in Oregon DEIS Chapter 4, page 211, Affected Environment and Environmental Consequences and Native Plants, and Plant Communities, page 112.

A BIOLOGICAL CROSSROADS

The Siskiyou Crest is exceedingly unusual among mountain ranges, with ridges that run west to east, while almost all other mountain systems in North America stretch north to south. This west-east orientation gives the Crest the qualities of a “land bridge” and offers one of the highest quality habitat corridors connecting wildlife between the Coast Ranges of California and Oregon with the massive cordilleras of the Cascade and Sierra ranges.

The Crest is a fertile biological crossroads, supporting outstanding levels of biodiversity due in part to the intersection of many distinct and distant ecosystems overlapping in one dynamic landscape. The Crest simultaneously marks the northern edge of ranges for many species belonging to the California floristic province to the south, while defining the southern reach for many trees and animals from the wet conifer forests of the Pacific Northwest. Further, the Crest forms the eastern border for many coastal organisms at the same time it provides the western boundary of habitat for numerous desert species typical of the Great Basin ecosystem to the east.

The Cascade-Siskiyou National Monument was designated in the year 2000 at the eastern extreme of the Siskiyou Crest in recognition of the ecologically critical characteristics of the region.



With towering fir forests, sunlit oak groves, wildflower-strewn meadows, and steep canyons, the Cascade-Siskiyou National Monument is an ecological wonder, with biological diversity unmatched in the Cascade Range. This rich enclave of natural resources is a biological crossroads—the interface of the Cascade, Klamath, and Siskiyou ecoregions, in an area of unique geology, biology, climate, and topography. The monument is home to a spectacular variety of rare and beautiful species of plants and animals, whose survival in this region depends upon its continued ecological integrity.

- Excerpt from the presidential proclamation that established the CSNM

While a meaningful step in the right direction, the Cascade-Siskiyou National Monument protects only a small fraction of the Siskiyou Crest to the east of Interstate 5 where it joins the Cascade Range, and is wholly insufficient to preserve the larger ecological attributes that give the Crest its regional and national significance.

Dave Willis, Chairman of the Soda Mountain Wilderness Council, has worked

for decades to gain protective status for this remarkable area and was a primary architect of the Cascade-Siskiyou National Monument. When the Soda Mountain Wilderness was designated by Congress in 2009, the *Medford Mail Tribune* quoted Willis and former U.S. Secretary of the Interior Bruce Babbitt calling for further protections:

“A major milestone like this wonderful wilderness bill is a long-sought step forward,” [Willis] said. “But it’s not the end of the protection trail here.”

Noting it has been 25 years since Oregon had a major wilderness expansion, he said he would like to see the wilderness, as well as the monument, expanded.

“If the Soda Mountain area is the genetic loading dock to the Noah’s Ark of globally significant Klamath-Siskiyou botanical diversity, isn’t it odd that the little Soda Mountain loading dock has received a lot more proportional protection than the larger Klamath-Siskiyou ark itself?” he asked.

Back in Washington, D.C., Babbitt observed that it was a grassroots effort led by Willis and others that created the wilderness.

“Without them, this would have never happened,” he said. “All the volunteer work from the local people dedicated to making it happen were the ones that accomplished this. Their citizen effort should be a message to us all.

“This should inspire us to look at the entire Klamath-Siskiyou ecosystem. There is still more to do.”

-Medford Mail Tribune, ‘Saving the Wild’ March 29th, 2009

The Siskiyou Crest is important for a host of old-growth dependent species. Rare plants that need the shade of ancient forests, such as the clustered lady slipper, find refuge in the forests on the Crest. Rare forest dwellers, like the Pacific fisher and northern spotted owl – which require older forest habitat and large trees for nesting and denning – use the Siskiyou Crest’s forests for both their home ranges and as an important migration and dispersal corridor.

According to the U.S. Forest Service, the Mt. Ashland Late Successional Reserve on the Siskiyou Crest is regionally important for wildlife migration and dispersal:

The Mt. Ashland LSR links the high elevation Siskiyou range of the Klamath Geological Province with the Southern Oregon Cascades. This link is a critical node in the overall migratory patterns of the Pacific Northwest. The maintenance of late-successional habitat within the Mt. Ashland LSR is important for maintaining species migration and dispersal.

- 1996 Mt. Ashland LSR Assessment at 4 and 5



ROADLESS AREAS AND SPECIAL DESIGNATIONS

Five Inventoried Roadless Areas are located along the Siskiyou Crest: Kangaroo (about 100,000 acres, including the Red Buttes Wilderness and other contiguous roadless land), Condrey Mountain (20,000 acres, including contiguous roadless land), McDonald Peak (12,000 acres, including contiguous roadless land), the 10,000-acre Kinney, and the 8,000-acre Little Grayback (See Roadless Areas Map in Appendix F).

In addition to the Forest Service Inventoried Roadless Areas, smaller, but ecologically important, roadless areas exist on Forest Service and BLM land within the proposed monument (See map in Appendix F). These patches of roadless wildlands are fragmented, but extensive, and provide essential habitat connectivity between the larger blocks of more pristine landscape. They also contain much of the highest-quality remaining lower elevation habitat in the region, including the Dakubetede roadless area in the Little Applegate watershed (See Appendix F). These unroaded forests, while not inventoried by the federal agencies, house an important representation of biodiversity that often differs in ecological composition from the larger, higher elevation Wilderness and roadless areas.

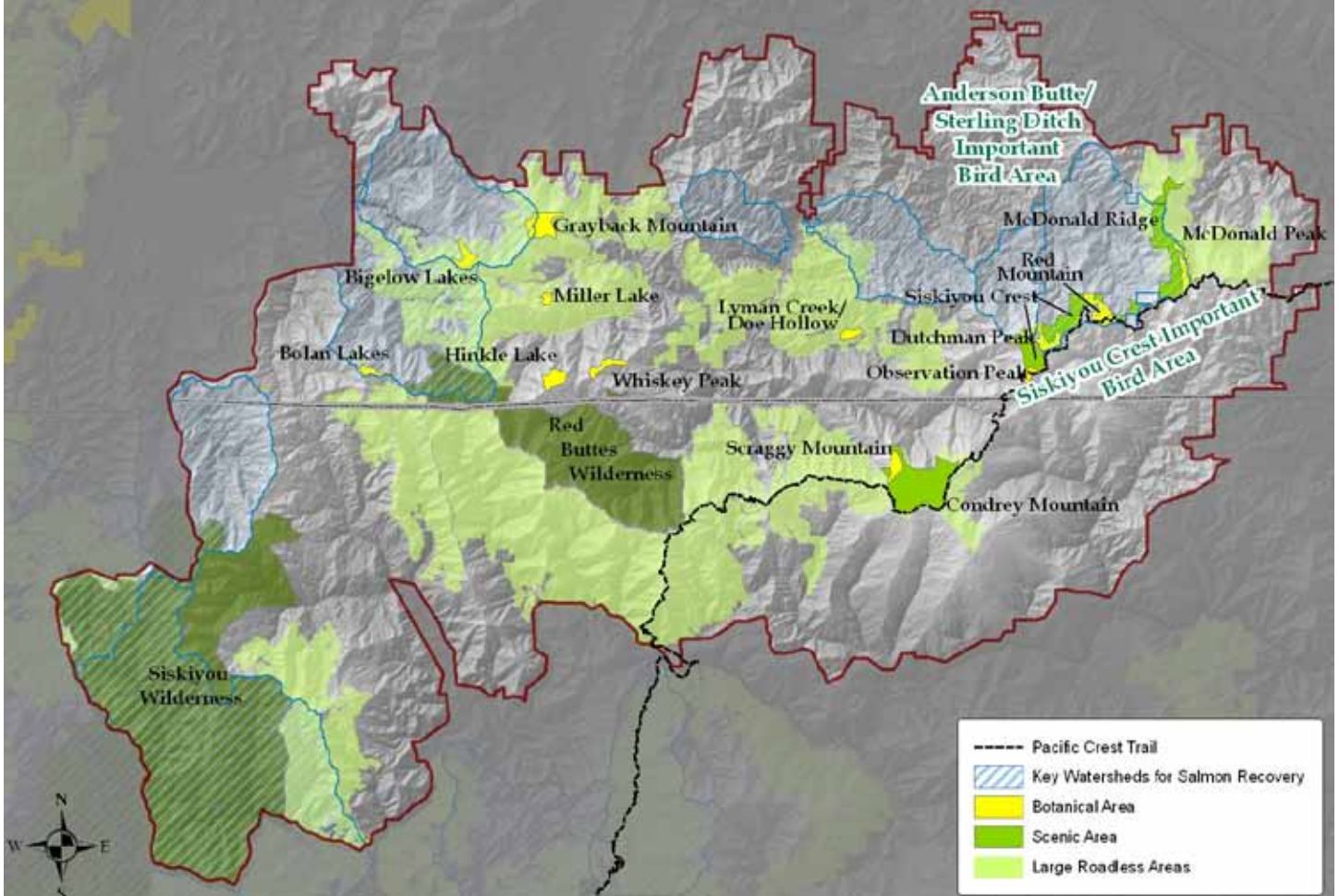
The Rogue River-Siskiyou National Forest has designated at least a dozen Botanical Areas along the Siskiyou Crest which “were identified as those areas containing concentrations of rare species, exceptionally rich and diverse floras, or plant communities rarely found in an undisturbed condition.” (See Map, next page and Appendix B for descriptions of these areas). Many of these Botanical Areas are easily accessed from Road 20, off the Mt. Ashland exit from Interstate 5, offering a spectacular display of summer high country wildflower bloom for hikers and recreationalists.



The Audubon Society’s Important Bird Area (IBA) Program “is a global effort to identify and conserve areas that are vital to birds and other biodiversity.” The IBA Program has designated two Important Bird Areas within the proposed monument, the Siskiyou Crest IBA and the Anderson Butte/Sterling Ditch IBA. These areas have been selected after a statewide analysis showed they provide particularly important habitat for an array of resident and migratory species (See Map, next page and Appendix C for more details).

Approximately 60 miles of the Pacific Crest National Scenic Trail traverse the Siskiyou Crest about midway along its 2600-mile route from Mexico to Canada. This is one of the most unusual, dynamic and interesting sections of this iconic trail the Pacific Crest Trail Association calls “an internationally significant resource for the enjoyment of hikers and equestrians.” (See Map, next page and Appendix E for more featured trails)

Siskiyou Crest Special Interest Areas



THE COMPLEX OF ROAD-
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TION AS A CROSSROADS
OF BIODIVERSITY.



BOTANY

The (Klamath-Siskiyou) region possesses a greater diversity of forest communities, in a more complex vegetation pattern, than any comparable area of the West... With the exception of pygmy conifer woodlands, all the plant formations dominated by trees of the Western US occur there, as they do in no other area.

- Whittaker, Robert H. 1960. Vegetation of the Siskiyou Mountains, Oregon and California. Ecological Monographs 30: 279-338. (Quote is on page 282.)

The region has a very ecologically diverse mosaic landscape, including mixed evergreen and subalpine forests, serpentine vegetation, oak woodlands, unusual chaparral associations, savannahs and meadows. The Siskiyou Crest supports at least 20 of the region's 36 different conifer species, more than any other temperate forest in the world. Regionally endemic (which means that a species exists in one location and nowhere else on the planet) conifers along the Crest include the Port-Orford cedar, Baker's (or Siskiyou) cypress and Brewer's (or Weeping) spruce.

The largest grove of Weeping spruce in the world, the last tree species discovered in America, occurs in the heart of the proposed monument. Many other conifers here live at the edge of their range, such as Engelmann spruce and Alaska yellow cedar.

The Rogue River/Siskiyou National Forest is the most floristically diverse national forest in the United States and the region is well known by botanists around the world for its unique array of unusual and endemic flowering plants. Endemic plants include the Mt. Ashland lupine, Henderson's horkelia, lavender (or splithair) paintbrush, Yreka phlox and Gentner's Fritillary among many others

(See Appendix A for a partial list of rare and listed-status species). Many species found here are known as "relic" species, meaning they were once more widespread across the continent, but are now found only here. Still others evolved here so recently they have not yet had time to expand their distribution beyond the bioregion.

An illustration of the Siskiyou Crest's astounding botanical richness, Cook and Green Pass in the center of the proposed monument is described by the Klamath National Forest on their website's list of Special Places as "*containing a mosaic of plant communities and is considered to be the dividing line between the eastern and western Siskiyou. This area has a phenomenal concentration of native plant species, one of the richest areas in California, with possibly as many as 300 species present. The area also contains a large stand of Siskiyou Cypress (Cupressus bakeri ssp. matthew-*



sii). Rare or sensitive plants present include *Pedicularis howellii*, *Siskiyou lewisia* (*Lewisia cotyledon*), *Antennaria racemosa*, and *Lilium wigginsii*. Botanists and plant enthusiasts from around the country have considered the Cook and Green Pass area significant for years. Sensitive species not found elsewhere in the Forest include: *Cypripedium californicum*, *Gentiana newberryi*, *Nartheccium californicum* and *Mimulus primuloides* ssp. *linearifolius*. (emphasis added)

WILDLIFE

The Crest's forests are home to abundant forms of terrestrial wildlife, including deer, elk, black bears, ringtails, mountain lions, spotted owls, and rare amphibians such as the Siskiyou Mountain and Scott Bar salamanders. Robust populations of smaller carnivores like bobcat, coyote, red and gray fox, and weasels also thrive here.

With 38 native species of amphibians and reptiles, the Klamath-Siskiyou region has the most species-rich herpetofauna of any similarly sized mountain range in the Pacific Northwest. High diversity is due to the overlap of two major biogeographic groups: the Arcto (= northern) and Madro (= southern) Tertiary herpetofaunas.

-Bury, Bruce R., and Pearl, Christopher, A., Klamath-Siskiyou Herpetofauna: Biogeographic Patterns and Conservation Strategies. Natural Areas Journal V. 19, Number 4, 1999.

The Siskiyou Mountain and Scott Bar salamanders are endemic to the Klamath-Siskiyou, existing only in small populations in Siskiyou County, CA and Jackson County, OR. As members of the lungless salamander family, these creatures breathe through their skin, which must always be moist or wet for respiration to occur. They live in talus or rocky hill-sides in the shade of late-successional or old-growth forests with closed canopies and moist microclimates, surfacing from their subterranean refugia only during rains to feed upon insects.



The Pacific fisher, a rare forest carnivore, lives in old-growth forests of the northern United States and Canada. Recent genetic work established that West Coast populations - living in the Sierra Nevada and the Klamath Mountains of California and southern Oregon - are genetically distinct, verifying the notion of a "Pacific" subspecies. Fisher are tied to closed canopy forests and require large trees for denning. They are specialized predators that frequently travel along waterways and rest



in live trees, snags, or logs with cavities. These characteristics make fishers a very good ‘indicator species’ for habitat quality associated with late successional forests. Trapping coupled with the severe loss and fragmentation of habitat caused by logging and road building has led to the near extirpation of the fisher from its West Coast range. The fisher has been determined to be “warranted but precluded” (by budgetary constraints) for listing as an endangered species by the U.S. Fish and Wildlife Service. There have been many confirmed sightings of fisher on the Siskiyou Crest in recent years.



Several species have been extirpated from the region, including the gray wolf, grizzly bear, lynx, wolverine, bighorn sheep and pronghorn antelope. The Siskiyou Crest is one of the most vital habitat connectivity corridors on the West coast and will likely be vital in any successful effort to restore these species to their native habitat.

In their “Suite of Priority Activities to Enhance Biodiversity Conservation”, The World Wildlife Fund concludes, “The relatively intact condition of the Klamath-Siskiyou ecoregion provides a rare opportunity for recovery of large carnivores in the West.”

Referring to the wealth of bird life present in the Klamath-Siskiyou, author and naturalist Pepper Trail writes:

This treasure-trove holds a total of 392 bird species, as documented by a recent review of published and unpublished records. Of these birds, 189 have been confirmed to nest somewhere within the region (this compares, for example, to approximately 255 breeding species for all of Oregon!).

Because of the Klamath-Siskiyou bird community’s diversity and variability, its preservation is an essential part of any overall effort to protect the avian biodiversity of North America. Some specific areas that are known to provide vital bird habitat but are not adequately protected include the Klamath River canyon, the Shasta and Scott Valleys, Lake Earl near Crescent City, and the eastern Siskiyou crest.

The good news is that the Klamath-Siskiyou, with its long biological history and diversity of habitats, appears to be a stronghold of genetic variety. To date, the genetics of only two bird species have been examined in the Klamath-Siskiyou, and both exhibited very high levels of genetic diversity compared to other populations of these species across the West. Even more than a treasure trove of species, the Klamath-Siskiyou region may represent a reservoir of genetic variation. This rich variability could prove crucial in the ability of species to respond to long-term environmental changes, such as global warming.

(See Appendix D for a table of birds reaching the edge of their range along the Siskiyou Crest)

The region is also known as an epicenter of terrestrial snail and butterfly diversity.

What may be a new species of mollusk was recently discovered near the Oregon Caves National Monument. There is a particularly high rate of endemism among the terrestrial snails; one study suggested that 60% of the species found here are endemic.

*Two butterflies found in the Klamath Mountain Ecoregion are the Oregon leanira checkerspot (*Thessalia leanira* ssp *oregonensis*) and the Madron skipper (*Polities mardon* ssp *klamathensis*). The Oregon leanira checkerspot is a very rare Siskiyou Mountains butterfly found hidden away as isolated populations in canyons and on hillsides along small streams in Josephine, Jackson, and southern Douglas Counties, Oregon, and in adjacent northern California. The Madron skipper is rare, and was until recently known only from southwest Washington State and far northwestern California. It is found in grassy areas at higher elevations.*

-Lang, Frank A., Klamath-Siskiyou Natural History, V.19, number 4, Natural Areas Journal, 1999.

RIVERS AND FISHERIES

The proposed Siskiyou Crest National Monument would protect hundreds of miles of important tributary streams that provide essential cool, clean water to two of the West Coast's most important salmon bearing rivers, the Klamath and the Rogue. The headwaters of Ashland Creek, the source of the City of Ashland's Municipal Drinking Water, would also be protected.

The Rogue and Klamath Basins are home to several important salmon species, including Coho, Chinook and steelhead. Other native freshwater fishes include Cutthroat trout, Pacific lamprey and green sturgeon among others. Coho are listed on the Endangered Species Act and in severe decline.

The proposal encompasses nine watersheds (in their entirety or portions of) that have been designated under the Northwest Forest Plan as "key" to salmon recovery. (See map, page 8)

The majority of headwater tributaries of the Applegate River are included in the proposal, including the Little Applegate River (key watershed), the Middle Fork Applegate and the Sturgis and Steve Forks of Carberry Creek. Also on the northern portion of the proposed monument, the upper reaches of Williams Creek, which provides water to the farms and residential community of Williams would be protected. To the west, the headwaters of Sucker Creek (key watershed) and the Upper Illinois River are also included.

Sucker Creek is a high value salmonid fish watershed...Sucker Creek is a very high priority for protection and restoration, one of the most important anadromous fish watersheds in the Rogue River basin.

- Sucker Creek TMDL and Water Quality Management Plan, page 13.



To the South, Indian, Clear, Thompson and Beaver Creeks are among the many tributaries to the Klamath that would be protected.

The LSR is comprised of highly unstable granitic and schist soils subject to high rates of erosion and landslides. Where extensive road development and timber harvesting has occurred, sediment production has been accelerated. Aquatic systems in many areas of the LSR were identified through Watershed Analysis to have been impacted by timber harvesting and road building, resulting in degraded riparian zones, increased sediment produced to stream channels, and simplified aquatic habitat. There is a concern for riparian dependent late-successional species in these areas. Sedimentation and habitat simplification are identified as the main limiting factors for salmonid reproduction in the Beaver and Bear Creek Watersheds.

- Mt. Ashland Late Successional Reserve Assessment, page 37.

Many of the streams in the Rogue and Klamath Basins are listed as water-quality impaired under the Clean Water Act. On the Rogue Basin side of the Siskiyou Crest proposal, streams are currently in violation of water quality standards for temperature, habitat modification and flow. On the Klamath Basin side of the Siskiyou Crest proposal, streams are currently in violation of water quality standards for nutrients, dissolved oxygen, temperature and water. (See Appendix H for list of watersheds and subwatersheds included in proposal.)

CLIMATE REFUGE

Protecting the world's climate is one of the greatest challenges of our lifetime. Forests have a vital role to play in overcoming this challenge. In the United States, the Obama Administration is taking steps to protect and restore our forests in order to sustain our climate and our water resources. Moving forward, forest restoration, climate mitigation and adaptation will be central components of how we manage our National Forests.

- USDA Secretary Tom Vilsack at the 2009 international climate conference in Copenhagen



The Rogue Basin of southwest Oregon is one of the only areas of its size to have a site-specific, peer-reviewed report which make concrete predictions and recommendations about the impacts of climate change to the local ecology and economy.

The report, “Preparing For Climate Change In The Rogue River Basin Of Southwest Oregon”, prepared by the Climate Leadership Initiative at the Institute for Sustainable

Development at the University of Oregon, and the National Center for Conservation Science and Policy in Ashland, makes many tangible recommendations for how land managers can best prepare for the startling changes to come.

To prepare our rivers and forests for climate change by increasing resilience and resistance, the science panel on this project recommends:

Remaining intact habitats should be protected, including old growth, road-less areas and corridor connections for wildlife migration. Protected areas should be expanded longitudinally and latitudinally in order to allow species to shift their ranges. Ecosystem structure, function and genetic diversity should be protected and restored to allow organisms to withstand and adapt to climate stressors. Land and stream reaches that provide critical support for ecosystem services should be identified, protected and restored. Ecosystem services are benefits that people gain from functioning ecosystems, including clean water, decomposition of waste and toxins, timber harvest, recreational opportunities, etc.

In addition to its role as a refuge and travel corridor for species affected by climate change, this area is an enclave of intact forests that provide crucial carbon sequestration. Recent studies show that the forests and soils of Oregon and northern California's mature forests store even more carbon than previously estimated (Oregon State University. 2009, July 3. Pacific Northwest Forests Could Store More Carbon, Help Address Greenhouse Issues).

A 2008 report from The Wilderness Society, titled 'Measuring Forest Carbon: Strengths and Weaknesses of Available Tools', emphasizes the enormous carbon reserves held by forests in the contiguous states. Of most relevance to the Siskiyou Crest, the report notes that, on average, public forest lands such as National Forests appear to hold more carbon per acre than private lands. Further, reserved forest lands, where timber harvest is prohibited (such as in Wilderness, National Parks, and National Monuments) typically hold more carbon per acre than non-reserved lands.



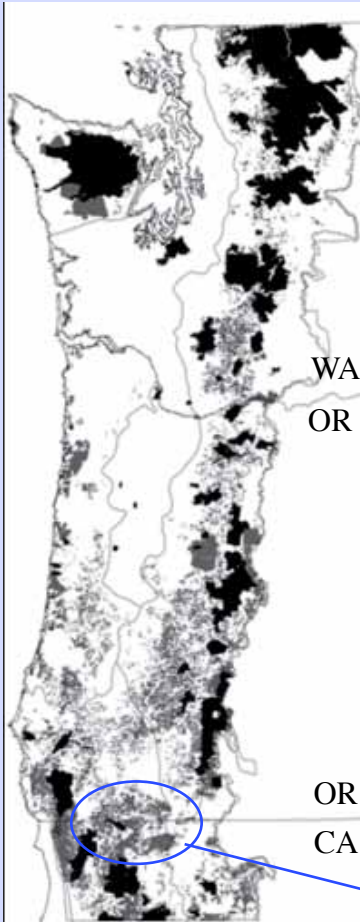
Protecting these carbon-sequestering forests in the face of climate change is of even greater significance in the Klamath-Siskiyou region, as climate models predict that it will see a smaller average temperature increase (2-3 degrees within the next 50 years) than anywhere else in North America. As the impacts of climate change become more severe, the Siskiyou Crest could very well, once again, serve as an Ark for species struggling to adapt to a changed world.

Unlike most rivers, the Klamath gets colder as it flows downstream and is benefited by the Crest's cool mountain streams. The drinking water supplies of many communities, including the city of Ashland, OR, emerge from within the proposed monument.

A 2009 study lead by Klamath Center for Conservation Research scientist Carlos Carroll examined "how the regional system of reserves can be made more resilient to climate change", and the Siskiyou Crest region stood out as one of the Pacific Northwest's highest conservation-priority areas for enhancing the resiliency of the regional reserve network in light of climate change predictions.

Ecoprovinces with high topographic and climatic heterogeneity (KLA, OLY) retained their importance (proportion of province within priority areas) under climate change, especially in the two scenarios in which dispersal was considered (scenarios 3 and 5, which prioritized proximity between current and near-future and distant future habitat, respectively).

-Carroll et al 2009-Optimizing resiliency of reserve networks to climate change: multispecies conservation planning in the Pacific Northwest, USA



A MORE RESILIENT PACIFIC NORTHWEST

A recent scientific study by the Klamath Center for Conservation Research evaluated how the regional system of reserves across the Pacific Northwest can be made more resilient to the escalating impacts of global climate change.

They projected future species' distributions based on an ensemble of contrasting climate models, and incorporated uncertainty between alternate climate projections into the prioritization process. Their results suggest that systems of fixed reserves designed for resilience can increase the likelihood of retaining the biological diversity of forest ecosystems under climate change.

The black areas in this figure are already congressionally protected reserves, while the gray areas are identified as the highest priority areas for conservation.

This study concludes that the region including and surrounding the Siskiyou Crest along the Oregon/California border contains one of the highest concentrations of priority conservation areas across the entire Pacific Northwest.

Siskiyou Crest

Few places in North America offer the physical and biological complexity of the Klamath-Siskiyou Bioregion. It is one of those places on our planet that can evoke wonder, reverence, and unending curiosity among all who delight in the natural world. Nowhere is such a rich display of landforms, geology, and an indigenous, richly endemic biota more grandly displayed in the American West. Its richness, displayed in all branches of natural science and in major economic mineral and timber resources, has come to provoke the ultimate question: How to preserve this province and bioregion in all its distinctive ecosystems – in the face of ongoing resource extraction and other human incursions?

- Dr. Frank Lang, Professor Emeritus of Biology at Southern Oregon University

CULTURAL VALUES

TRIBAL LANDS

Approximately the southwestern third of the proposed Siskiyou Crest National Monument overlaps with the northern portion of the ancestral territory of the

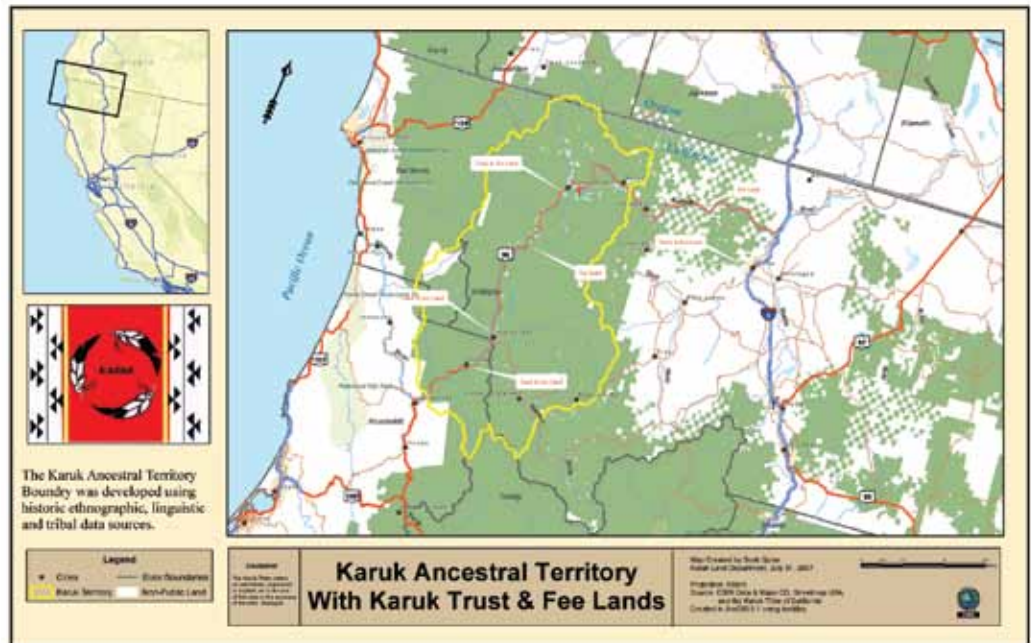
Native American Karuk Tribe of the mid-Klamath River. The Karuk are a federally recognized tribe, with offices in Yreka, Happy Camp, and Orleans, California, but they do not have any officially ceded land or a reservation. They do have a robust tribal government and a well-developed Department of Natural Resources (DNR), which together play a significant role not only in internal tribal governance but also in decisions affecting the area's natural resources.

Regional salmon recovery, native plant protection, returning fire to the ecosystem, and federal road decommissioning and maintenance efforts are but a few of the ecological conservation priorities of the Karuk Tribe.

The mission of the Karuk Department of Natural Resources is to protect, promote, and preserve the cultural/natural resources and ecological processes upon which the Karuk People depend. DNR staff work in conjunction with federal and state agency personnel to ensure that the integrity of natural ecosystem processes and traditional values are incorporated into current and future management strategies within their area of influence.

The DNR has further articulated the tribe's land management philosophy in a document titled "Karuk Tribe Department of Natural Resources Eco-Cultural Resources Management Plan: An integrated approach to adaptive problem solving, in the interest of managing the restoration of balanced ecological processes utilizing Traditional Ecological Knowledge (TEK) supported by Western Science." A draft of this proposal can be downloaded at: <http://karuk.us/dnr/index.php>

The management priorities the Karuk advocate for in their Eco-Cultural Resources Management Plan are firmly in keeping with the principles of conservation biology and serve as a guiding template in development of additional protective and restorative designations for the Siskiyou Crest (See Appendix G for a synopsis of this document). They also provide guidance for how conservation efforts can include a place for people the ecosystem, allowing for hunting and gathering, the active use of fire in the ecosystem, and recognizing the importance of intact ecosystems for traditional ceremonial practices.



RECREATION: A PLAYGROUND FOR ALL SEASONS

The area encompassed by the Siskiyou Crest National Monument is a year-round hotspot for outdoors enthusiasts. The spectacular peaks, vast forests, deep canyons and clean rivers are rugged and remote while also highly accessible by an extensive network of hundreds of miles road and trail systems. There is something for every interest here, from easy car camping to deep wilderness backpacking, from high exposed ridges to tucked away swimming holes.

Hunting, fishing, backpacking, mountain biking, horseback riding, downhill and cross country skiing and paragliding are all popular activities that would be further promoted by the establishment of a national monument. Local communities already cater to outdoor-oriented visitors with gear stores, lodging and dining businesses, guide services and other amenities.

The western portion of the proposed monument contains the Oregon Caves, one of the most visited attractions in the region, and on the eastern end the Mt. Ashland Ski Area also draws tens of thousands of winter sports enthusiasts. Large and small lakes throughout the proposed monument are favorite regional locations for boating, swimming, picnicking, camping and fishing.

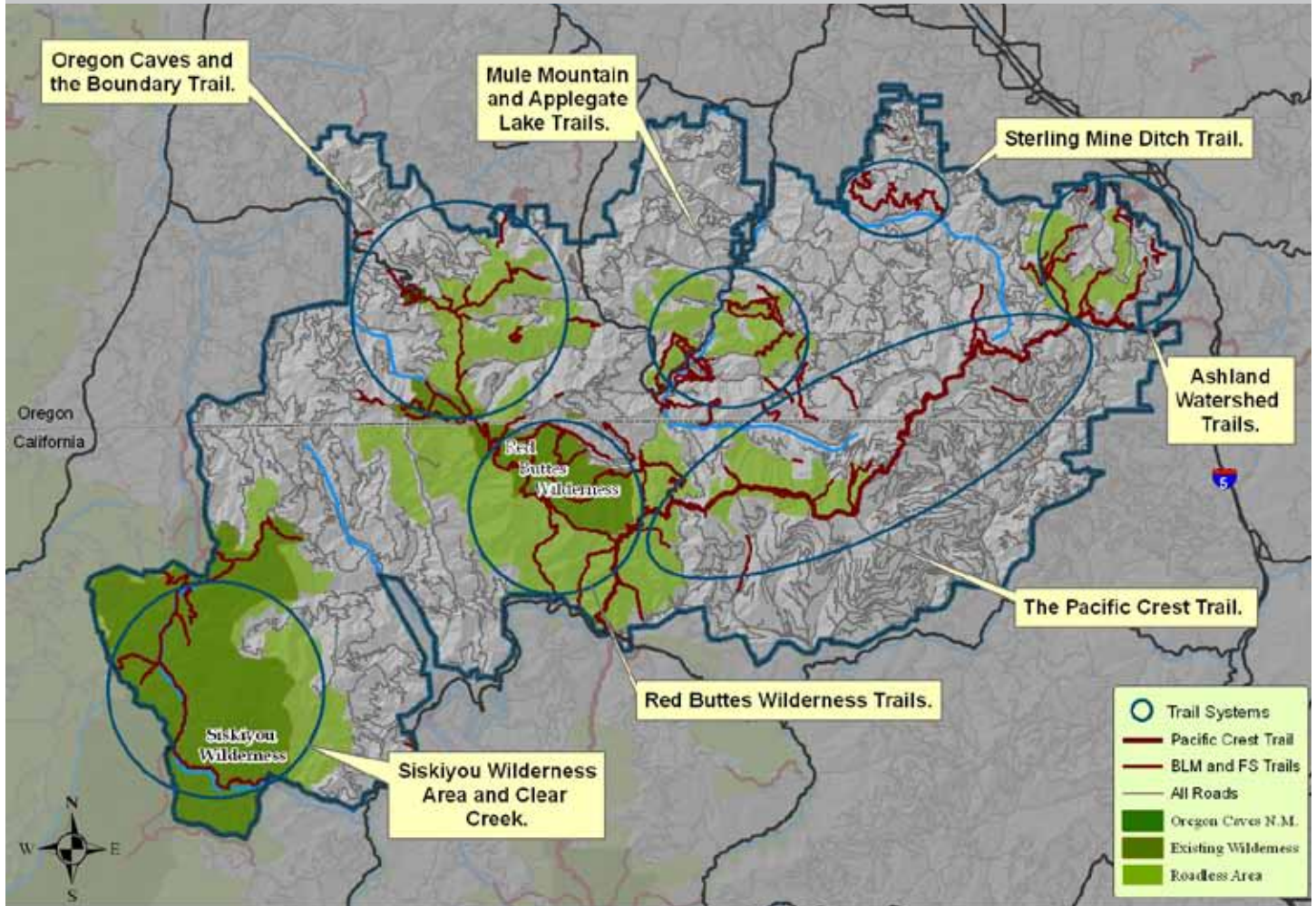


The proposed Monument features an abundance of hiking opportunities, including the Boundary, Bigelow, Mule, and Cook and Green trails (See Appendix E for descriptions of featured trails). The Pacific Crest National Scenic Trail, the “crown jewel” of America’s foot paths, traverses the breadth of the monument for nearly 60 miles, from the banks of the Klamath River at 1,000 feet in elevation, to the highest ridges of the Siskiyou’s above 7,000 feet. This route offers iconic vistas in every direction, and unsurpassed access to wildflower meadows and idyllic camping opportunities.

The Sterling Ditch Trail system contours over 20 miles through beautiful pine oak savannah and low-elevation mixed conifer forest in the Little Applegate Valley, providing excellent views and close to town wilderness walking in any season. It would take a lifetime to explore the thousands of miles of routes available in this alluring countryside.

For almost 40 miles, Forest Road 20 crosses the Siskiyou Mountains from I-5 to the Applegate Valley, passing through the Rogue River National Forest along the Siskiyou Crest. The road starts out paved as it heads over Siskiyou Pass (4,400’) for the ski area on Mount Ashland (7,533’), the highest point in Oregon west of the Cascade Range. Siskiyou Pass, first discovered by Hudson’s Bay Company trapper Peter Skene Ogden in 1827, became a major gateway to California when a road built over the pass was used by the Portland to Sacramento stage line from 1859 to 1887. The road was built in 1936-37 by the CCC. Today, the route provides easy access to panoramic views and wildflower displays. A summer drive along Road 20 offers breath taking views of Mt. Shasta, the Scott Bar and Marble Mountains, the Klamath River Basin, the High Siskiyou, the Upper Rogue and Applegate Valleys and the many peaks of the South Cascades, including Mt. McLoughlin, Crater Lake, Mt. Thielson and Pilot Rock.

Siskiyou Crest Recreation Hot Spots



THE SPECTACULAR
PEAKS, VAST FORESTS,
DEEP CANYONS AND
CLEAN RIVERS ARE
RUGGED AND REMOTE
WHILE ALSO HIGHLY
ACCESSIBLE.



RURAL ECONOMICS & GATEWAY COMMUNITIES

The Old Dichotomy of Jobs vs The Environment is Giving Way to a New Economic and Ecological Era

The establishment of a Siskiyou Crest National Monument would be a boon to the regional economies of southwest Oregon and northwest California. This region, like much of the West, is moving away from the boom and bust economic cycles of resource extractive industries like logging and mining, and towards more stable, diversified and sustainable economies. In Jackson County the percentage of people's income based on extractive industries fell from 19.1% in 1969 to just 8.2% in 1997. In Josephine County during the same time period it fell from 17.5% to 4.8%.

Meanwhile, the percentage of income generated by economic activity associated with 'natural amenities', things related to activities like tourism, recreation, retirees, and quality of life services, has steadily increased. In Jackson County from 1969 to 1997 the percentage based on 'natural amenities,' increased from 23.7% to 33.5%, and in Josephine County it grew from 28.1% to 39.9%.

Many argue that protecting lands from extractive activities is especially harmful to rural communities. However, when only rural western counties are studied, the relationship between economic growth and protected and Forest Service

roadless areas is very strong. In rural counties during the period 1969-1997, the amount of protected lands within 50 miles of a county's center is positively and significantly correlated with employment growth and with income growth. Similarly, the amount of Forest Service roadless areas within 50 miles of a county's center is positively and significantly correlated with employment growth and with income growth. This means counties with, or near, protected lands are more likely to experience stronger economic growth.

The result of this analysis is clear: Protection of roadless areas is strongly and positively connected to economic growth. Throughout the West, counties with more roadless and protected areas showed stronger economic growth from 1969 to 1997 than those without such lands.

- Historical Economic Performance of Oregon and Western Counties Associated with Roadless and Wilderness Areas Prepared by: Southwick Associates



POLITICAL CONSIDERATIONS

CURRENT MANAGEMENT

The proposed monument consists entirely of federal public lands, primarily on the Klamath and Rogue River-Siskiyou National Forests and a smaller portion of the Medford District of the Bureau of Land Management. Five sizeable Inventoried Roadless Areas are located along the Siskiyou Crest. The northern portion of the Siskiyou Crest is largely comprised of the Applegate Adaptive Management Area, a special designation within the Northwest Forest Plan. The Red Buttes Wilderness and Oregon Caves National Monument are contained entirely within the proposal, with the Siskiyou Wilderness forming a western boundary and the Cascade-Siskiyou National Monument forming an eastern edge. Each of these federal management units conducts its own planning process independent of the other units, with little formal consultation.

LAND OWNERSHIP

A significant area of ‘checkerboard’ private and public land ownership exists within the boundaries of the proposed monument. The private lands, primarily industrial timberlands, would not be included in or adversely affected by the monument’s designation. However, industrial logging of these lands has been significant enough in the recent past to pose a threat to habitat connectivity and water quality. Thus, some of these lands, particularly those that pose a disproportionate threat to habitat connectivity or rare species, are likely to be sought for voluntary acquisition and conservation via a separate, but related, process.

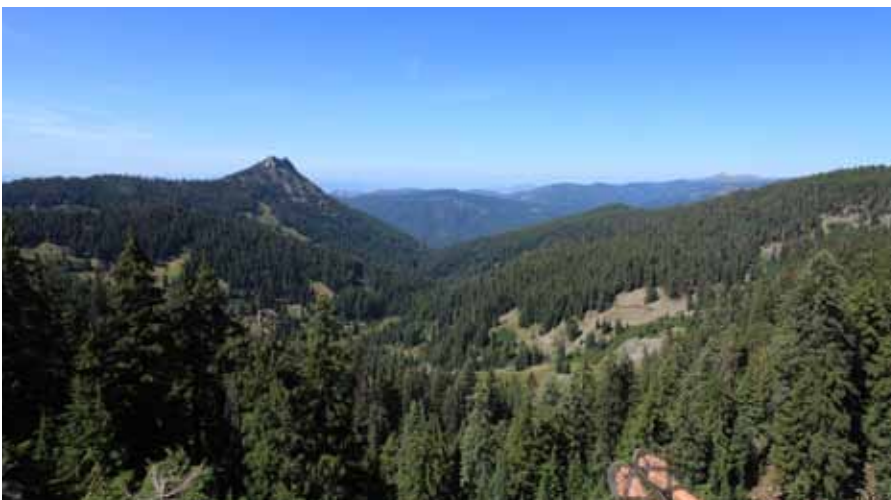
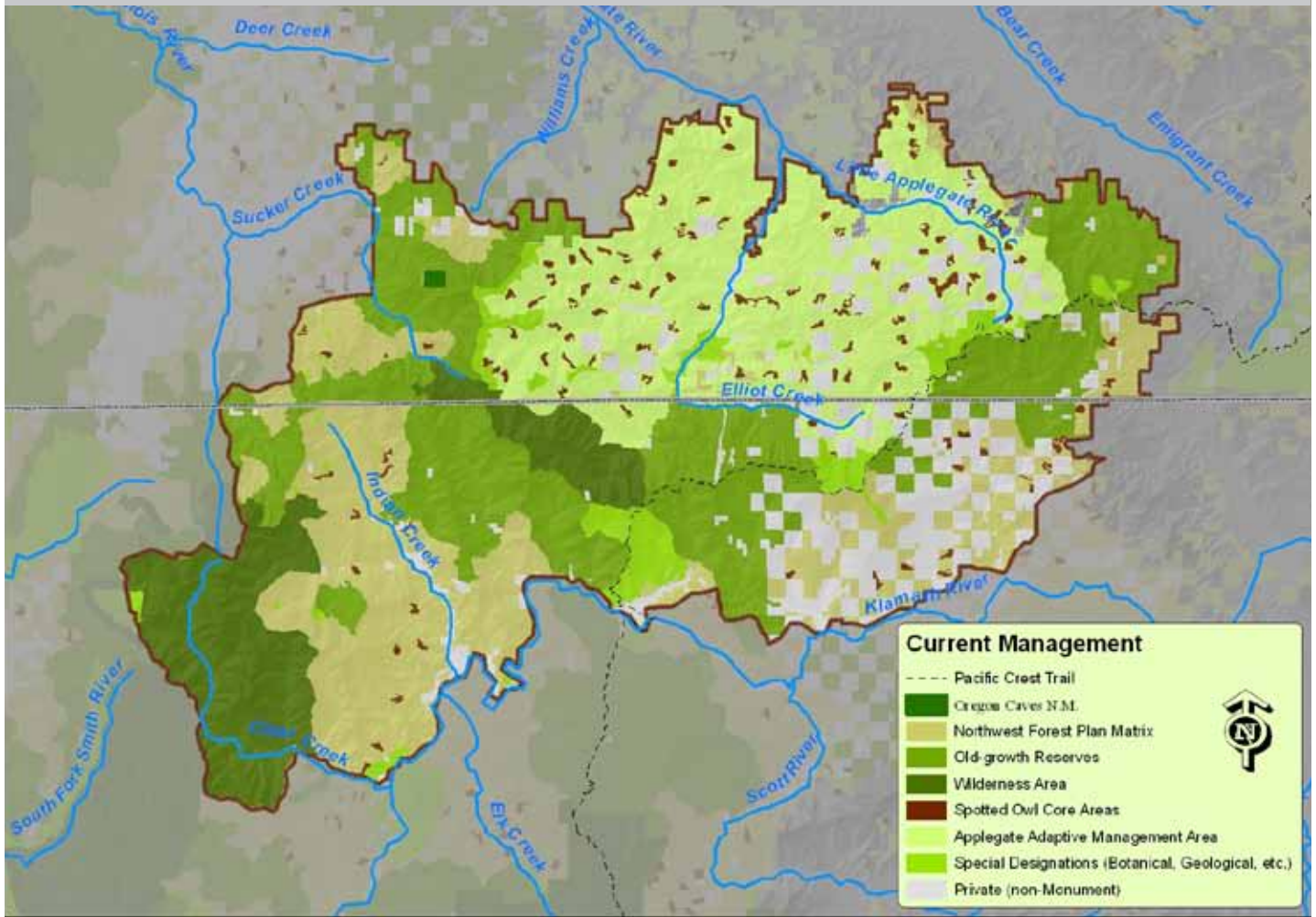


In some areas, particularly around the City of Ashland and the Applegate Valley, numerous private residences abut the Crest’s federal lands. In areas such as this, clear fire management plans and the creation of defensible space are high priorities for decreasing fire risk to homes and communities.

POLITICAL BOUNDARIES

This area falls into Oregon’s 2nd and 4th and California’s 1st and 2nd congressional districts. It includes federal lands that lie in Oregon’s Jackson and Josephine County and California’s Siskiyou County. No recognized municipalities lie within the proposed Monument boundary.

Siskiyou Crest Federal Land Use Allocations



**WHILE THE SISKIYOU
CREST IS A CONTIGU-
OUS LANDFORM, ITS
MANAGEMENT IS NOT.**

HISTORY OF CONSERVATION EFFORTS

The Siskiyou Crest has long been recognized for its remarkable biological diversity and spectacular wild country, and efforts to protect the outstanding values of the region have a long history. The Oregon Caves National Monument was designated in 1904 and the National Park Service has been asking for its tenfold expansion ever since. Early botanical surveyors brought an international spotlight to the extraordinary and unusual flora of the region by the middle of the 20th century, and the fight over roadless area began in earnest in the 1960s.

There have been many calls and efforts to protect the Crest from several conservation groups over the decades, such as the Oregon Wilderness Coalition, the Red Buttes Wilderness Council, and Headwaters. While the roadless land on the crest has diminished over the years, nearly 200,000 acres of roadless area persist. Initial proposals for protecting the Kangaroo Inventoried Roadless Area called for the creation of a nearly 100,000-acre Wilderness area. Unfortunately, political maneuvering left only 20,230 acres protected as the Red Buttes Wilderness by Congress in 1984.

THREATS

The primary threats to the area are the same that threaten native forests and wildlife throughout the West. They include logging, mining, unregulated Off Road Vehicles, livestock grazing in sensitive areas such as streams and wet meadows, road building and a lack of coordinated management leading to damaging activities such as misguided fire suppression techniques.

MINING

Rapid diminishment of finite mineral resources, and the rising mineral values associated with this growing scarcity, has brought a resurgence of mining interests throughout the Klamath-Siskiyou. Currently, a proposed chromium mine near Cook and Green Pass threatens rare montane botanical areas near the Red Buttes Wilderness, and placer mine claims are wreaking havoc with tributary streams in the Illinois Valley. Abandoned mines from an earlier era continue to leach toxic metals into the area's soil and waters.



The antiquated Mining Law of 1872 allows mining interests to take valuable hardrock minerals from public lands without royalty payments to the taxpayer. The law also allows mining interests to buy valuable mineral bearing public lands at 1872 prices, which translates to no more than \$5 per acre, and does not sufficiently insure restoration of degraded resources after the mining operation ends. The interpretation by some miners of the 1866 and 1872 Mining Laws, and the lack of agency coordination in permitting and monitoring of mining claims, are fueling a growing culture of lawlessness.

The arrest and conviction of a miner in the summer of 2009 for illegally logging old growth trees and digging destructive pits on Sucker Creek, on the boundary of the proposed monument, underscores the need for better mining oversight and enforcement, as well as mining law reform.

Suction dredge mining within salmon-bearing tributaries to the Klamath and Rogue Rivers is also a growing problem in the area. Other minerals of value in the region include nickel, copper, and lithium.

GRAZING



The impacts of livestock grazing are often underestimated. However, when public lands grazing becomes systemic, the problems magnify and become more apparent. *E. coli* and other fecal coliforms are introduced to waterways, where they not only flow downstream but are also passed on to more mobile wild species and spread elsewhere. Rare plant communities are trampled and eaten. Forage for wild ungulates is reduced. Streambanks are trampled, causing erosion and widening of stream channels, which increases water temperature and degrades salmon habitat. Recreation opportunities are degraded by both these ecological impacts and the visual disturbance of fecal waste and tram-

pling concentrated around aquatic resources and meadows. Native wildlife is eradicated when there is potential conflict with livestock.

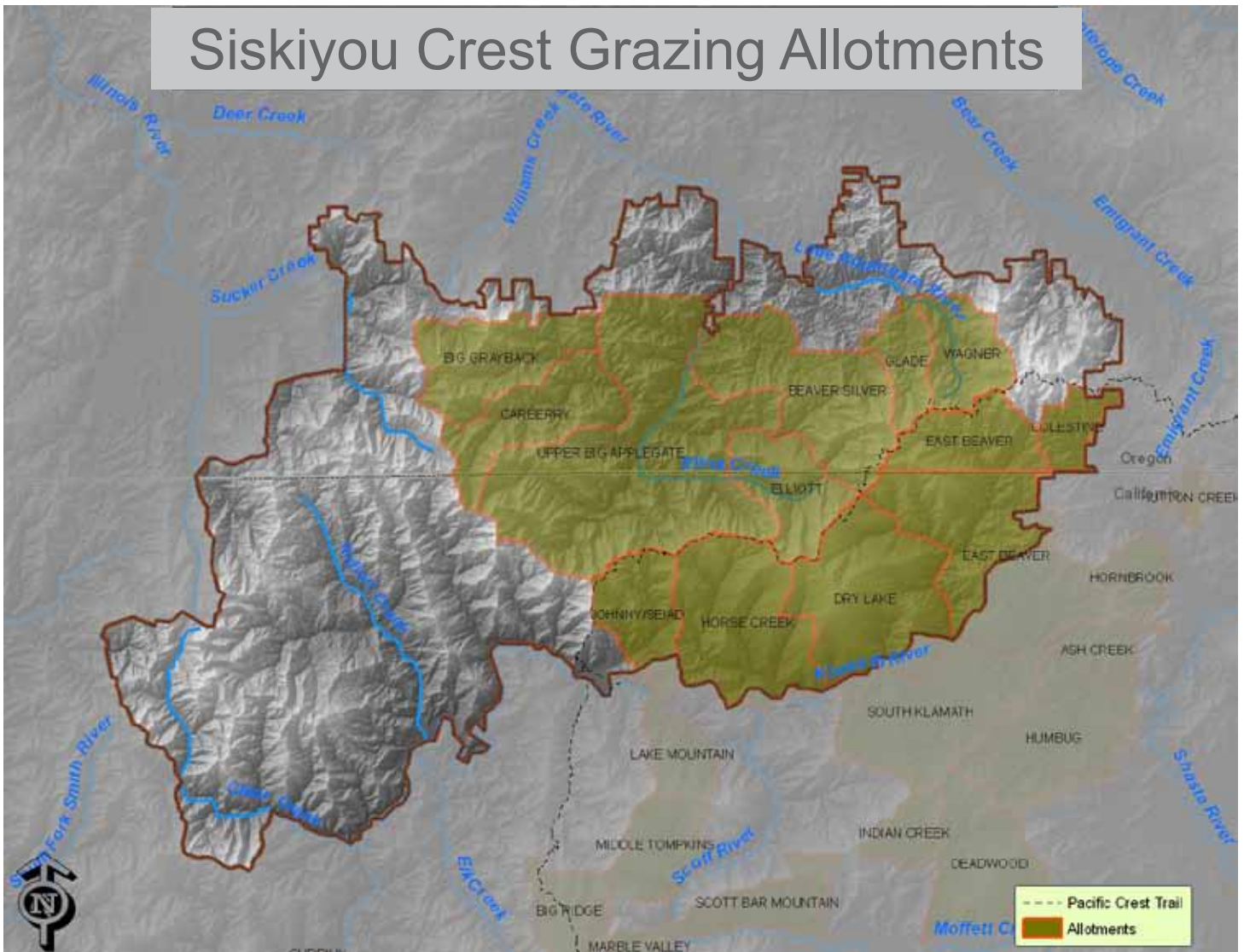
The National Public Lands Grazing Campaign estimates that the federal public lands grazing program costs the American taxpayers about \$466 million annually. One quarter of this is comprised of the direct costs of administering the program, and the rest is indirect costs – primarily in the form of damage to ecosystem services. In contrast, the Forest Service gathers less than \$2 million annually from grazing fees and the BLM gathers less than \$5 million for its more extensive western grazing program.

Currently, more than half of the Crest is designated as open to livestock grazing. Three of the twelve allotments are vacant, but the Forest Service has resisted retiring them. Another is currently undergoing a Congressional process to enable a voluntary buyout of the permittee and permanent allotment retirement. Due to the rugged terrain, there is virtually no enforcement of allotment boundaries. The records for these allotments are rife with agency reports of trespass and subsequent inaction. Most of these remaining allotments are ecologically inappropriate. It is proposed that the vacant allotments be retired and that options for a voluntary buyout of existing allotments be fully explored.

LOGGING AND ROAD BUILDING

Logging has taken a heavy toll on the forests of the Pacific Northwest. Thou-

Siskiyou Crest Grazing Allotments



CURRENTLY, MORE THAN HALF OF THE CREST IS DESIGNATED AS OPEN TO LIVESTOCK GRAZING.

sands of miles of logging roads traverse federal lands, increasing sediment loading in salmon bearing streams. The remaining intact public lands are a natural legacy critical for wildlife, clean water and recreation. The Klamath-Siskiyou ecoregion is recognized as one of the most diverse temperate forests in the world, and its forests are more intact than other western zones. With nearly one-quarter of its forests in mature and old growth condition, it contains much of the remaining interior ancient forests in the Pacific Northwest.



However, portions of the Crest have been heavily logged, particularly on the Klamath side. Many of these lands have been converted to tree farms, where monoculture and fire suppression have created conditions that increase the risk of unnaturally severe wildfire and disease outbreaks. There is increasing agreement over the need to actively manage these forests to restore them to a more natural and resilient condition. On the Siskiyou Crest, there is ample opportunity for thinning existing tree plantations and restoring fire-suppressed forests while simultaneously working to protect old-

growth forests, reduce logging road densities, remove noxious weeds, restore wildlife habitat and protect the natural values of public land. Some areas, such as Indian Creek and portions of the current Applegate Adaptive Management Area, are in serious need of active management and could provide for a large volume of small-diameter saw timber as a by-product of restoration and fuels reduction activities.



Currently, the Forest Service and BLM are not adequately funded to maintain their existing road systems. On the Crest, hundreds of miles of user-created routes and old logging roads direct sediment into salmon streams, damage rare botanical areas, introduce invasive species, and spread the devastating Port-Orford cedar root rot disease. Much of the extensive road network on the Crest is currently under evaluation as part of the Klamath and Rogue River/Siskiyou National Forests' Travel Management Planning process. This process involves identifying and closing user-created routes and other roads deemed to be ecologically destructive in order to create a manageable road system. Once this process is complete, decommissioning will need to occur on many of

the closed roads, and mitigation activities, such as culvert replacement, water bars, and recontouring, will be required for others. The BLM will be undergoing a similar process starting in 2010. Road decommissioning and restoration is labor-intensive work. On the adjacent Orleans District of the Six Rivers National Forest, a road removal contract is providing much-needed jobs for the local community.

CLIMATE CHANGE

The Rogue Basin climate study is one of the first in the nation to boil global warming down to the local level, and many of its findings are sobering. While forecasting the specifics of climate change is notoriously difficult, the study makes many detailed predictions- the highlights are summarized here:

- Expected increases in year-round temperatures of up to 3 degrees Fahrenheit by 2040 and up to 8 degrees by 2080. Summertime high temperatures are likely to rise by up to 15 degrees by 2080.

- A dramatic decrease in snow accumulation with earlier mountain snowmelt, transition from snow to rain, and higher and flashier winter and spring runoff events. Less snow in the mountains means extended low stream flows in the summer.

- An increase in the amount of biomass burned by wildfires by 2040, according to two models in the report. However, the number of wildfires is expected to decrease toward the end of the century because of changing vegetation.

- A gradual shift from conifers to hardwoods such as oaks and madrone. The changing vegetation is expected to decrease biodiversity.

- Increased and extended summer temperatures along with extended periods of lower summer stream flows. This likely will result in decreased dissolved oxygen and increased incidence of bacteria and disease, producing fish kills.

- Increased incidence of fire as well as longer fire seasons, larger fires and higher-elevation fires that would likely affect vegetation and wildlife and could lead to sudden shifts in ecological communities.

- Increased invasive species and pest issues.

- Increase of chaparral, grasslands and scrublands because of hotter and drier climate. Drought-tolerant species that may benefit include oak, madrone and mountain mahogany.

- Decrease in high-elevation wildlife such as Clark’s nutcracker. High-elevation vegetation, including hemlock and wildflowers, may also be at risk.

- Decline in amphibians because of lack of mobility, affinity for unique micro-sites and susceptibility to drought, heat and habitat change.

--Doppelt, Hamilton, Williams, and Koopman, “Preparing for Climate Change in the Rogue River Basin of southwest Oregon: Stressors, Risks, and Recommendations for Increasing Resilience and Resistance in Human, Built, Economic and Natural Systems,” 2009.

ORVs

Unregulated ORV use along the Siskiyou Crest is seriously degrading the unique ecological, hydrological and recreational values of the high country. Meadows, wetlands, botanical hotspots, and riparian reserves are particularly at-risk.



While the National Forests that manage public lands on the Crest are conducting an ongoing travel management planning process that will address off-road use, enforcement of current laws and regulations is virtually non-existent. Current standards and guidelines that prohibit off-road recreation in designated botanical areas are not enforced. Motorized trails in the “Non- Motorized Backcountry” land use allocation are common. ORVs and motorcycles routinely enter the Red Buttes Wilderness Area.



Initial indications are that through the travel management planning process Forest Service decision makers intend to encourage continuing off-road use in botanical areas, research natural areas and backcountry non-motorized areas. There exists a pressing need for reform that would protect such areas from further ORV damage.

BLM lands in the Siskiyou Crest are currently subject to a motorized “free for all” in which trails are cut, gates are destroyed or circumnavigated, and riparian reserves are trashed across the landscape. Such abuse of the public lands managed by the BLM is both widespread and common.

FIRE SUPPRESSION

Current fire and fuels management of the Siskiyou Crest by four Districts across two National Forests and by the Medford District BLM lacks a cohesive strategy. There is virtually no coordination between federal land managers regarding the transportation (road system) needs for fire suppression or the introduction of prescribed fire. Fuel reduction projects administered by the different managers and agencies are planned in isolation from one another and without an overreaching management plan for either fire or wildlife values.

Creation of the Siskiyou Crest National Monument would allow for a unified management strategy regarding fire and fuels management. Mechanical fuel reduction efforts and the use of prescribed fire to ameliorate fire encroachment and stand density concerns could be applied in a coordinated landscape fashion. Policies regarding the impacts of recreation, grazing, timber harvest, and fire suppression on fire hazard and fire risk could be harmonized into a unified management plan.

RECOMMENDATIONS

1) SISKIYOU CREST NATIONAL MONUMENT:

AMERICA'S FIRST CLIMATE REFUGE

With its extraordinarily high biodiversity and physical heterogeneity, the Klamath-Siskiyou ecoregion warrants an ambitious conservation plan founded on scientifically defensible goals.

- Stritholt J.R., R. F. Noss, P. A. Frost, K. Van-Borland, C. Carroll, G. Heilman, Jr. 1999. A conservation assessment and science based plan for the Klamath-Siskiyou

We recommend the designation of a new national monument to protect the outstanding ecological and recreational features of the Siskiyou Crest and to provide for regional climate mitigation and economic sustainability.

For the management of this monument, we recommend:

-A management plan prioritizing the conservation of biodiversity values related to native species richness, ecological integrity, clean water and late successional forest habitat. This plan should emphasize the important role this monument can play in providing for regional climate resiliency through carbon sequestration, watershed preservation and high quality wildlife habitat and uninterrupted travel corridors.



-The creation of a cohesive, science-based fire management plan designed to allow for the ecologically beneficial return of natural fire intervals to the landscape while protecting communities and ecosystems by employing appropriate fire hazard reduction techniques like small diameter thinning to restore and prepare previously logged and fire suppressed areas.

-Managing this area to provide for the highest level of protections for roadless wildlands and late successional forests, with an emphasis on maintaining habitat connectivity and increasing the quality of wildlife corridors between the cores of highest value habitat.

-The implementation of a comprehensive scientific assessment of the impacts and appropriate role of public lands livestock grazing within the new monument. In areas where current levels of grazing are found incompatible with the conservation priorities of preserving areas of botanical and other ecological significance, we recommend the establishment of a mechanism to facilitate an eventual voluntary buyout of existing grazing allotments within the monument.

CLIMATE CHANGE CASTS NEW LIGHT ON AN ANCIENT LANDSCAPE

Protecting the Siskiyou Crest as a national climate refuge is one of the most tangible and immediate steps the US can take to enact a responsible land management strategy in response to the crisis of climate change.

The Siskiyou Crest is increasingly recognized by climate scientists as a disproportionately important area to protect as part of a regional and national strategy to mitigate and adapt to the growing climate crisis.



The distinctive east to west ‘Land Bridge’ feature of the Siskiyou Crest, combined with its network of relatively intact roadless areas and forests, gives the area a critical regional role as a dispersal and migration conduit for species and ecosystems moving across the landscape in response to the impacts of climate change. The unusually varied microclimates of the Crest provide important habitat for a tremendous variety of species as they continue forced migrations north and to higher elevations to find suitable habitat.



The complex of roadless areas along the Siskiyou Crest needs to be protected as a whole for its function as a crossroads of biodiversity. As the climate crisis unfolds we are going to see climate-forced migrations of wildlife with models projecting that we will see a shift in whole habitats up in elevation and north in latitude. A solid climate change strategy is to look at this landscape as a climate refuge. We are all going to need this landscape as our climate shifts, not just for its wildlife values, but for its ecosystem

services like carbon sequestration and drinking water. These areas are key to our own survival and should be set aside as a national carbon trust.

- Dominick Dellasala, President and Chief Scientist of National Center for Conservation Science and Policy

The rugged wildlands surrounding the Siskiyou Crest are part of an ancient climate refuge where many species once widespread across the continent were forced to retreat during past climate shift events and now persist as ‘relic species,’ found here and nowhere else on earth. Species in this category include the endemic Siskiyou Mountains Salamander, Port-Orford Cedar and the Weeping or Brewer’s Spruce. It is highly likely that the Crest will provide this same service in the near future.

This natural climate resiliency, resulting from a combination of a stable, mild regional climate, extremely complex geology and topography and a tremendous diversity of microclimates, is a key reason this area stands out as a conservation priority.

2) RESTORATION PLAN

A VISION OF ACTIVE MANAGEMENT ON THE SISKIYOU CREST

The wildlands of the Siskiyou Crest are an interconnected network of high quality plant and wildlife habitat. Much of the landscape is roadless and relatively unspoiled. These are the areas that need the least management to provide climate resiliency, stable territory for imperiled wildlife and ecosystem services like drinking water and carbon sequestration.

However, much the landscape between and around these relatively pristine pockets has been heavily impacted by decades of road building, inappropriate livestock grazing, fire suppression, commercial logging, mining and unregulated ORV abuse. These areas are in need of active management to restore their streams, forests and soils.



Hundreds of miles of unmaintained roads built decades ago to facilitate industrial logging now languish, bleeding salmon-choking sediment into nearby streams. Hundreds of thousands of acres of plantation forests await small diameter thinning projects to improve their health and resiliency. Large swaths of the landscape are in need of treatments to reduce the hazards of uncharacteristically dense forest conditions due to decades of fire suppression.

The vision for a Siskiyou Crest National Monument is not to “lock up” the landscape and leave it completely alone, but to work with scientists, Tribes, and land managers to implement science-based restoration projects where needed. Such activities will help to further enhance the ecological values of the Crest while also providing much-needed local jobs in the woods.

3) KARUK ECO-CULTURAL NATURAL RESOURCE AREA

WESTERN SCIENCE INFORMED BY TRADITIONAL ECOLOGICAL KNOWLEDGE

We propose the creation of a Karuk Eco-Cultural Resource Area designation within the new monument that acknowledges the ancestral relationship of the Karuk people to the southwest portion of the monument and provides the tribe with a greater degree of participation and management authority in accordance with the restoration and conservation principles articulated in the Karuk Tribe Department of Natural Resources Eco-Cultural Resources Management Plan summarized on page (See Synopsis in Appendix G).



Designating language would also clarify and simplify tribal access for ceremonial and traditional practices such as non-commercial forest crop gathering and the formal consulting role of the Tribe in land management decisions. The designated Eco-Cultural Resource Area would likely be a sub-unit of the National Monument.

KS Wild is in communication with the Karuk Tribe in the hope that we can establish a special designation on this portion of the monument that will incorporate their management vision and codify their rights for traditional uses across this territory. While there exist complex legal and political challenges to negotiate, this element of the proposed monument represents an auspicious and nearly unprecedented collaborative effort.

The Klamath-Siskiyou Bioregion of northern California and southern Oregon is one of the wildest places left on the West Coast of the United States. It is also one of the least appreciated wild places - perhaps because its treasures are more hidden than the wonders of a Yosemite or a Yellowstone.

- David Rains Wallace, *The Klamath Knot*, 1983

PHOTO CAPTIONS AND CREDITS

Cover: Clockwise, from top: Gentian in North Kangaroo Roadless Area, photo by Martha McCord; Landscape view of North Kangaroo Roadless Area, photo by Barbara Ullian; Old-growth Incense cedars in Condrey Mountain roadless area, Lesley Adams; Elliot Creek, KS Wild file photo; Hikers on Siskiyou Crest, photo by Martha McCord.

Backside of cover: Azalea lake, Red Buttes Wilderness, photo by Martha McCord.

Page 1: White Mountain, Condrey Mountain Roadless Area, photo by Martha McCord.

Page 2: Kettle Lake, photo by Martha McCord.

Page 3: Looking South, down into the mid-Klamath from the Crest, photo by Martha McCord.

Page 4: Hikers near Cook and Green Pass, photo by Martha McCord.

Page 5: Paintbrush (*Castilleja* sp.), photo by Martha McCord.

Page 6: Middle Fork Applegate River, KS Wild file photo.

Page 7: Little Applegate River in Winter, photo by Chant Thomas

Page 8: Bigelow Lake above Oregon Caves National Monument, photo by Martha McCord.

Page 9: Top: Brewer's Spruce, KS Wild file photo, Middle: Gentian *pleuristosa*, photo by Kristi Mergenthaler, Bottom: Port Orford cedar, KS Wild file photo.

Page 10: Top: One of many Pacific fishers within the proposed SCNM captured on motion detector camera in the summer of 2009 by Robert C Swiers, Zoology Masters Student NC State University Biology Dept. Bottom: The endemic Siskiyou Mountains salamander (*Plethodon stormi*), KS Wild file photo.

Page 11: Calliope Hummingbird, KS Wild file photo.

Page 12: Coho Salmon, KS Wild file photo.

Page 13: Western Siskiyou Crest, along the Boundary Trail, photo by Martha McCord.

Page 14: Blue butterfly on Sulphur buckwheat, photo by Martha McCord.

Page 17: Mule Mountain Roadless Area, Applegate Valley, KS Wild file photo.

Page 18: Hikers on the Pacific Crest Trail in the McDonald Peak Roadless Area, just

west of Mt. Ashland, photo by Lesley Adams.

Page 20: Ancient Douglas fir marked to be cut within private in-holding in the Condrey Roadless Area, photo by Martha McCord

Page 21: Studhorse canyon, Condrey Roadless Area, photo by Martha McCord.

Page 22: Illegal mining operations on Sucker Creek, western Siskiyou Crest, photo by Lesley Adams.

Page 23: Damage from overgrazing on the Crest, photo by George Wuerthner.

Page 24: Fritillary butterfly on sulphur flowered buckwheat, photo by Martha McCord.

Page 25: Top: Old Growth Pine marked to be cut, KS Wild file photo. Bottom: Road cut causing sedimentation in the Beaver Creek tributary of the Klamath, photo by George Sexton.

Page 26: Downtown Ashland flooded during the New Year's Storm of 1997, KS Wild file photo.

Page 27: Damage to sensitive meadow habitat from a single day of ORV abuse, photo by Dave Willis.

Page 28: Top: Lower elevation pine oak savannah within the Dakubetede roadless area in the Little Applegate Watershed, photo by Chant Thomas; Bottom: Hikers on the Siskiyou Crest, photo by Martha McCord.

Page 29: Top: Bigelow Lake, Grayback Mountain in the North Kangaroo Roadless Area, photo by Martha McCord; Bottom: Old-growth incense cedars in the Condrey Mountain roadless area, KS Wild file photo.

Page 30: Top: Bad culvert on the Beaver Creek tributary of the Klamath watershed, photo by George Sexton; Bottom: Fire prone monoculture plantation left as a result of previous clear cut logging practices in the Beaver Creek watershed of the Klamath, photo by George Sexton.

Page 31: Black oak acorn, KS Wild file photo.

APPENDIX A: RARE PLANT SPECIES

SPECIES	COMMON NAME	ORN-HIC	FED-ERAL	ODA	CNPS
<i>Abies amabilis</i>	Pacific silver fir				2.3
<i>Arabis aculeolata</i>	Waldo rock cress				2.2
<i>Arabis koehleri</i> v. <i>stipitata</i>	Koeler's rock cress	4			1B.3
<i>Arabis macdonaldiana</i>	McDonald's rock cress				1B.1
<i>Boschniakia hookeri</i>	Small ground cone				2.3
<i>Callitropsis bakeri</i>	Baker's cypress	2	SOC		4.2
<i>Calochortus greenei</i>	Greene's mariposa lily	1	SOC	C	1B.2
<i>Calochortus howellii</i>	Howells' mariposa lily	1	SOC	LT	
<i>Calochortus persistens</i>	Siskiyou mariosa lily	1	C	C	1B.2
<i>Camissonia graciliflora</i>	Slender-flowered evening primrose	2			
<i>Carex nervina</i>	Nerved sedge	2			
<i>Carex scabriuscula</i>	Siskiyou sedge	2			4.3
<i>Carex serratodens</i>	Saw-tooth sedge	2			
<i>Castilleja miniata</i> ssp. <i>elata</i>	Siskiyou paintbrush				2.2
<i>Castilleja schizotricha</i>	Split-hair paintbrush	2			4.3
<i>Cimicifuga elata</i> var. <i>alpestris</i>	Tall bugbane	3		C	
<i>Coptis laciniata</i>	Oregon goldthread				2.2
<i>Cryptantha milobakeri</i>	Milo Baker's cryptantha	2			
<i>Cypripedium fasciculatum</i>	Clustered ladyslipper	2	SOC	C	4.2
<i>Cypripedium montanum</i>	Mountain ladyslipper	4			4.2
<i>Delphineum nudicaule</i>	Red larkspur	2			
<i>Dicentra formosa</i> ssp. <i>oregana</i>	Oregon bleedingheart	4			4.2
<i>Dicentra pauciflora</i>	Few-flowered bleedingheart	2	SOC		
<i>Draba carnosula</i>	Mt. Eddy draba				1B.3
<i>Draba howellii</i>	Howell's Whitlow-grass	2		C	4.3
<i>Epilobium rigidum</i>	Rigid willow-herb	4			4.3
<i>Epilobium siskiyouense</i>	Siskiyou willow-herb	1	SOC	C	1B.3
<i>Erigeron cervinus</i>	Siskiyou daisy	2	SOC		4.3
<i>Erigeron petrophilus</i> v. <i>viscidulus</i>	Cliff daisy	2			4.3
<i>Eriogonum diclinum</i>	Jaynes Canyon buckwheat	4			4.3
<i>Eriogonum hirtellum</i>	Klamath Mountain buckwheat				1B.3
<i>Erythronium howellii</i>	Howell's adder-tongue	1			1B.3
<i>Eucephalus breweri</i>	Brewer's aster	3			
<i>Eucephalus vialis</i>	Wayside aster	1	SOC	LT	1B.2
<i>Fritillaria gentneri</i>	Gentner's fritillaria	1	LE	LE	1B.1
<i>Fritillaria glauca</i>	Siskiyou fritillaria	4			4.2
<i>Gentiana plurisetosa</i>	Waldo gentian	1	SOC		1B.3
<i>Hazardia whitneyi</i> v. <i>discoides</i>	Whitney's halopappus	4			
<i>Horkelia hendersonii</i>	Henderson's horkelia	1	SOC		1B.1
<i>Horkelia tridentata</i> ssp. <i>tridentata</i>	three tooth horkelia	2			
<i>Iliamna latibracteata</i>	California globe-mallow	2			1B.2

<i>Juncus regelii</i>	Regel's rush				2.3
<i>Keckiella lemmonii</i>	Bush beardtongue	2			
<i>Lewisia cotyledon</i> var. <i>heckneri</i>	Heckner's lewisia				1B.2
<i>Lewisia cotyledon</i> var. <i>howellii</i>	Howell's lewisia				3.2
<i>Lewisia leana</i>	Lee's lewisia	2			
<i>Lupinus breweri</i> v. <i>breweri</i>	Brewer's lupine	4			
<i>Lupinus lepidus</i> v. <i>ashlandensis</i>	Mt. Ashland lupine	1	SOC	C	
<i>Mimulus bolanderi</i>	Bolander's monkeyflower	2			
<i>Monardella purpurea</i>	Siskiyou monardella	2	SOC		
<i>Pedicularis howellii</i>	Howell's lousewort	4			4.3
<i>Pellaea mucronata</i> ssp. <i>mucronata</i>	Birdsfoot fern	2			
<i>Phacelia leonis</i>	Siskiyou phacelia	1	SOC		1B.3
<i>Pinguicula macroceras</i>	Horned butterwort				2.2
<i>Piperia candida</i>	White-flowered rein orchid				1B.2
<i>Pityopus californica</i>	California pinefoot				4.2
<i>Polystichum lemmonii</i>	Shasta fern	4			
<i>Polystichum lonchitis</i>	Northern holly fern				3
<i>Potentilla cristae</i>	Crested potentilla				1B.3
<i>Raillardella pringlei</i>	Showy raillardella				1B.2
<i>Rafinesquia californica</i>	California chicory	2			
<i>Rhamnus ilicifolia</i>	Redberry	2			
<i>Saussurea americana</i>	American sawwort				2.2
<i>Saxifragopsis fragarioides</i>	Strawberry saxifrage	2			
<i>Schoenoplectus subterminalis</i>	Water bulrush	2			2.3
<i>Sedum divergens</i>	Cascade stonecrop				2.3
<i>Sedum laxum</i> ssp. <i>heckneri</i>	Heckner's stonecrop	4			4.3
<i>Sedum oblancoletum</i>	Applegate stonecrop	4			1B.1
<i>Silene lemmonii</i>	Lemmon's catchfly	4			
<i>Solanum parishii</i>	Parish's horse-nettle	2			
<i>Streptanthus howellii</i>	Howell's streptanthus	1		C	1B.2
<i>Tauschia howellii</i>	Howell's tauschia	1	SOC	C	1B.3
<i>Triteleia hendersonii</i> v. <i>hendersonii</i>	Henderson's triteleia				2.2
<i>Zigadenus fontanus</i>	Marsh zigadenus	2			4.2

ORNHIC: Oregon Natural Heritage Information Center. 2007. Rare, threatened, and endangered species of Oregon. Oregon Natural Heritage Information Center , Oregon State University, Portland, OR.

ODA: Oregon Department of Agriculture

SOC= Species of concern; **LE** - Listed as Endangered; **LT** - Listed as Threatened

California Native Plant Society (CNPS). 2009. Inventory of rare and endangered plants (online edition, V7). Sacramento, CA. Accessed 1/11/10 <http://www.cnps.org/inventory>

APPENDIX B: BOTANICAL AREAS

Botanical areas are authorized under 36 CFR 294.1 and classified as Special Recreation Designations (FSM 2370). A botanical area is defined as “a unit of land that contains plant specimens, plant groups or plant communities that are significant because of their form, occurrence, habitat, location, life history, arrangement, ecology, rarity or other features” (FSM 2372.05). On the Rogue River National Forest botanical area candidates were identified as those areas containing concentrations of rare species, exceptionally rich and diverse floras, or plant communities rarely found in an undisturbed condition.

-From pg. 4-149 of Rogue River National Forest Land and Resources Management Plan

Siskiyou Crest Botanical Areas include:

Alex Hole Botanical Area

337 acres. 5900 to 7112 feet.

Alex hole is a dramatic cirque basin. The area includes the steep north face of Condrey Mountain. The geology is predominately schist.

There are a variety of plant habitats. Mountain hemlock is the major conifer in the upper portions, the north facing cliffs have *Saxifraga fragaroides* in great numbers. Wet rocky terraces have four species of monkey flowers (*Mimulus*) and *Sedum rosea*, which is unknown elsewhere in the Siskiyou.

Extensive wetlands have giant larkspurs, monkshood, false bugbane, alpine shooting stars, and checkermallows. There are several quaking aspen groves in the basin. Sadler oak is at the eastern edge of its range here.

Except for the steep rocky portions, the area has experienced a long history of livestock grazing. The area currently receives heavy use by cattle and the flora is dominated in many parts by species which flourish in this environment. The wet meadow areas are in a particularly disturbed condition. Exclusion of cattle may be a prerequisite for returning the plant communities to their former condition.

Cook and Green Pass Botanical Area

1068 acres. 3700-6250 feet.

A UC Berkeley Botanic Garden botanist asserted that Cook and Green Pass has “the largest single aggregation of native plant species known to occur in one limited area in California.”

This area has a phenomenal concentration of native plant species, one of the richest areas in California, with possibly as many as 300 species present. The area also contains a large stand of Siskiyou Cypress (*Cupressus bakeri* ssp. *matthewsii*). Rare or sensitive plants present include *Pedicularis howellii*, Siskiyou lewisia (*Lewisia cotyledon*), *Antennaria racemosa*, and *Lilium wigginsii*. Botanists and plant enthusiasts from around the country have considered the Cook and Green Pass area significant for years. Sensitive species not found elsewhere in the Forest include: *Cypripedium californicum*, *Gentiana newberryi*, *Narthecium californicum* and *Mimulus primuloides* ssp. *linearifolius*.

Several major plant communities are represented, including some old growth mixed conifer forest and a serpentine flora west of the pass.

Cook and Green Pass is generally considered the dividing line between the east and west Siskiyou and a number of species terminate their range in this area.

Six species of Penstemon, seven genera of ferns, numerous saprophytic orchids and wintergreens and high numbers of endemics are characteristic of the rich flora here.

The Elk Meadow Basin is an area of rare plant concentration within the overall richness of the Cook and Green Pass area.

Dutchman's Peak Botanical Area

1040 acres. 5700-7418 feet.

Dutchman Peak has long been a destination point for botanists visiting the area. The subalpine flora and spectacular wildflower displays are a major draw after the snow recedes enough to permit access.

The diversity of this flora appears to be unequalled in comparison to other high peaks of the eastern Siskiyou. Mary Paetzel, a legendary botanist and lepidopterist, catalogued 170 taxa of herbaceous plants without including grasses, rushes, sedges, shrubs or trees.

Elements of several floristic provinces are present. Many of the subalpine low cushion plants are representatives of the Sierra Nevada and High Cascade floras. Mountain mahogany, sagebrush species and bunchgrasses indicate Great Basin elements.

Five species of Arabis, eight of Erigeron, seven Eriogonums, and five of Haplopappus are examples of the diversity of the flora.

Large mountain meadows and wetlands are present in the upper Glade Creek basin with Mimulus (Monkey) species, Wiggin's lillies, giant larkspur, monk's hood and checkermallows.

Sensitive species include Horkelia hendersonii, Castilleja schizotricha (a lavender paintbrush), Erigeron petrophilus, Epilobium siskiyouense and Lewisia leana.

Grayback Mountain Botanical Area

591 acres. 5200-7055 feet.

Grayback Mountain, at 7055 feet, is the highest point of a major arm of the Siskiyou Mountains (informally called the Boundary Range) which divides the Applegate and Illinois watersheds.

The lower portions of the area are characterized by a mosaic of true fir stands broken up by rock outcrops, wet and dry meadows, fast moving streams, and brushfields.

The upper portions include a few mountain hemlock and Shasta red fir stands, but is dominated by talus, open stony slopes, brushfields, seeps, rocky ridgelines, and some glacial features.

The long hillside bog above Krause Cabin contains northernmost population of Gentiana Pleurisetosa (species novum); this is one of only three populations in the state.

The upper east slope of Grayback Mountain has the largest population of Anemone occidentalis in the Siskiyou.

Lyman Creek/Doe Hollow Botanical Area

646 acres. 2800-4300 feet.

Much of the area is characterized by hot, south-facing slopes of open grassland, chaparral, oak woodland and occasional Douglas fir/ponderosa pine forest. Lyman Creek forms a cool riparian zone through the area.

The area is identified for its diverse, lower elevation, non-forested plant communities, and by the presence of many sensitive and unusual species.

The grasslands have a native quality rare on regularly grazed land. Bunchgrasses are well represented. A complex mosaic of evergreen and deciduous trees, brushfields and open areas reflects a varied history of fire, geology and aspect.

McDonald Peak Botanical Area

594 acres. 6400-7226 feet.

Mostly granitic. All of the extant Oregon populations of *Tauschia howellii* are included in this area; this species is known only from this location and a similar-sized area in the southern Marble Mountains some 50 miles away.

Habitat for *Tauschia howellii* is decomposed granite soil on ridgetops at high elevations. Other sensitive species include *Horkelia hendersonii*, *Happlopappus whitneyi* ssp. *discoideus*, and *Eriogonum diclinum*.

Miller Lake Botanical Area

588 acres. 4800-6093 feet.

This area has a rich concentration of unusual conifers and forest understory trees. The states largest stand of Siskiyou Cypress (*Cupressus bakeri*), including the world's largest specimen of this rare cypress, is located here.

The former "world's largest" Brewer's Spruce (*Picea breweriana*) is present. There is a population of hybrid oaks of uncertain ancestry, sometimes referred to as Oregon's version of the "oracle oak." *Sedum divergens*, found only rarely in the Oregon Siskiyou is present.

The area is dominated by montane coniferous forest. Saddler oak and rhododendron are common understory shrubs.

Rocky ridges and outcrops are common in the upper portions and provide habitat for some of the endemic species present.

Mt. Ashland Botanical Area

70 acres. 6700-7533 feet.

Botanists have visited and collected on Mt. Ashland since the 1880's. It is the type-locality for several species.

The area encompasses the total global population of *Lupinus aridus* ssp. *ashlandensis* and the largest known population of *Horkelia hendersonii*.

Observation Peak Botanical Area

236 acres. 6800-7340 acres.

Observation Peak has a complex geology, mostly peridotite mixed with lesser amounts of granitic and metasedimentary rock. The flora is subalpine with a number of endemic species.

It has a high concentration of species considered sensitive in Oregon. The only known location in the Siskiyou, or in Oregon for *Calochortus nudus* is on Observation Peak. Many other interesting subalpine and montane species are present.

Sensitive species include: *Erigeron petrophilus*, *Castilleja schizotricha*, *Lewisia leana*, *Epilobium siskiyouense* and *Horkelia hendersonii*.

Red Mountain Botanical Area

694 acres. 5600-7028 feet.

A popular portion of the Pacific Crest Trail traverses the area. Beautiful Monogram Lakes are included in the Botanical Area and Research Natural Area. Jeffrey pine and western white pine with beargrass understory is a common plant community. There are extensive areas of open subalpine meadows.

Sensitive species include *Castilleja schizotricha* (a lavender paintbrush), *Erigeron petrophilus*, *Epilobium siskiyouense* and *Lewisia leana*.

Scraggy Mountain Botanical Area

281 acres. 5800-6995 feet.

Scraggy Mountain is a rugged peak composed of some of the oldest rock in the Siskiyou: Condrey formation schist Paleozoic geologic era.

The lower slopes are predominantly Shasta red fir forest, brushfields, talus and steep rocky meadows. Higher up, stands of sugar pine and mountain hemlock are more common. The highest parts of the mountain are dominated by rock with occasional windswept western white pines.

The steep slopes have largely kept off grazing animals and there is a striking “rock garden” plant community dominated by *Penstemon davidsonii*, *Erigeron foliosis*, *Lewisia cotyledon* and *Juniperus communis*. There are five species of rockcress here.

Tamarack Meadow Botanical Area

147 acres. 5900-6100 feet.

Tamarack Meadow is an extensive wet meadow in Tamarack Creek drainage between Observation and Donomore Peaks. The meadow is dominated by lodgepole pine (referred to as “tamarack pine” by early miners). This conifer, common in the Cascades, is otherwise absent from the Siskiyou portion of the Rogue River National Forest.

Several species of sedges form the major component of the herb layer. The meadow is in good condition despite a history of grazing.

Wagner Butte Botanical Area

502 acres. 6000-7280 feet.

Wagner Butte forms the divide between the Ashland Creek and Little Applegate River watersheds. Soils are granitic in origin.

The area contains a series of high, open wet and dry meadows interspersed in true fir forest. The most striking botanical attribute is the presence of what is normally a Great Basin flora; western juniper, bigleaf sagebrush, rabbitbrush, Idaho fescue, curly leaf mountain mahogany and quaking aspen are all present.

There are unconfirmed reports of sensitive species *Mimulus jepsonii* and *Allium campanulatum*. Also noteworthy are a local race of *Sidalcea oregana* ssp. *spicata* and *Orthocarpus cuspidatus*.

White Mountain Botanical Area

340 acres. 5400-6460 feet.

Brewer's Spruce has its eastern limits in the Siskiyou here. Biological diversity is very high and the area has not experienced as much historical grazing pressure as comparable areas schist country farther east.

White Mountain is made of light-colored ultramafic rock and has a subalpine peridotite flora that includes many noteworthy species; among them are *Erigeron petrophilus*, *Epilobium siskiyouense*, *Polystichum lemmonii*, *Lewisia leana* and *Galium grayanum*. White Mt. has the only known occurrence of *Saussurea americana* in California.

Black Mountain is made of schist and has a large stand of Pacific silver fir (*Abies amabilis*) on its north side. This conifer is extremely rare in California. Other noteworthy species include *Lewisia cotyledon*, *Saxifraga fragaroides* and *Sedum laxum* ssp. *heckneri*.

APPENDIX C: IMPORTANT BIRD AREAS

The Important Bird Areas Program (IBA) is a global effort to identify and conserve areas that are vital to birds and other biodiversity. The Important Bird Areas Program recognizes that coupled with global warming, habitat loss and fragmentation are the most serious threats facing populations of birds across America and around the world. By working to identify and implement conservation strategies at Important Bird Areas, we hope to minimize the effects that habitat loss and degradation have on birds and other biodiversity.

-From the National Audubon Society

There are two Important Bird Areas (IBAs) designated by the IBA Program within the boundary of the proposed SCNM:

Siskiyou Crest IBA

Site Description: In the Siskiyou Mountains, southwest Oregon near the California border, roughly from Mt. Ashland west-southwest to Maple Dell Gap, and including Wagner Butte, Grouse Gap, MacDonald Peak, Red Mountain, Wrangle Gap, Silver Fork Gap, Dutchman's Peak, and Yellowjacket Ridge. The area includes roughly 10-15 miles of the Siskiyou Mountains crest area in Oregon--continuation of the IBA into California is being considered. Dominant habitats are meadows and conifer forest. The diverse array of meadows are composed of grass, sedge, deciduous and/or evergreen shrubs, and small trees, and many have a small stream or other water source.

Ornithological Summary: The mountain meadows are important post-breeding habitat for many species: Rufous Hummingbirds, Yellow-rumped Warblers, and Dark-eyed Juncos in particular form impressive congregations. A small population of White-headed Woodpeckers is present in the conifer forests here, the only population known west of the Cascades in Oregon. Other species of interest include breeding Fox Sparrows, Green-tailed Towhees, Lincoln's Sparrows, and Calliope Hummingbirds. The Dutchman Peak area is the best known site for fall hawk migration in the Siskiyou.

Anderson Butte--Sterling Ditch IBA

Site Description: On BLM lands up Little Applegate Road (lands north of Little Applegate River) past junction with Sterling Creek Road. Includes portions of T39S, R2W, Sections 13, 14, 15, 22, 23, 24. Takes in Wolf Gap, Tunnel Ridge, and Goat Cabin Ridge. These BLM managed lands include a mix of shrubland and forest land. The habitats for which this site was identified are the ceanothus-manzanita brushfields and scrub oak habitat.

Ornithological Summary: This habitat is highly important to a very specific bird community that includes Blue-gray Gnatcatcher, Wrentit, Oak Titmouse, and California Towhee. All but the Wrentit are near the northern extent of their range in this IBA, and all but the gnatcatcher are year-round residents in this habitat. In addition, the manzanita in these shrublands provides resources to a diversity of birds year-round. During winter, manzanita provides a berry food source for several species, particularly Hermit Thrushes. In early spring, manzanita flowers provide a nectar heavily used by arriving Rufous Hummingbirds (and others). The flowers are also eaten (perhaps for the nectar or other nutritional content?) by songbirds such as Purple Finches and Golden-crowned Sparrows before and during spring migration (Dennis Vroman pers. comm.).

Conservation Issues: In many areas Ceanothus-manzanita brushfield habitat has been lost to urbanization and/or forest succession (due to fire suppression). Further, it is considered a "fire hazard" and is often eradicated to reduce fire danger.

APPENDIX D: NOTEWORTHY BIRD RANGES

Selected noteworthy bird species reaching a range limit in the vicinity of the Siskiyou Crest, with their primary habitats:

NORTHERN LIMITS:

Oak/Chaparral:

Ash-throated flycatcher
Oak titmouse
Blue-gay gnatcatcher
California towhee

Arid Scrub/Chaparral:

California thrasher
Black-chinned sparrow
Sage sparrow

SOUTHERN LIMITS:

Riparian Hardwoods/Mixed Conifer:

Ruffed grouse
Black-capped chickadee
Rufous hummingbird

WESTERN LIMITS:

High-Elevation Conifers and Meadows:

Great gray owl
Calliope hummingbird
White-headed woodpecker
Clark's nutcracker
Mountain bluebird

Montane chaparral/ Great Basin Shrub-Steppe:

Prairie falcon
Black-billed Magpie

EASTERN LIMITS:

Coastal and Valley Chaparral:

Wrentit
Allen's hummingbird

Riparian Hardwoods:

Red-shouldered hawk
Black phoebe

APPENDIX E: SELECTED TRAIL SYSTEMS

Pacific Crest National Scenic Recreation Trail (PCT):

Approximately 60 miles of the Pacific Crest National Scenic Trail traverse the Siskiyou Crest about midway along its 2600-mile route from Mexico to Canada. Called the ‘Big Bend Region’, this is one of the most unusual, dynamic and interesting sections of this iconic trail the Pacific Crest Trail Association calls “an internationally significant resource for the enjoyment of hikers and equestrians”.

Although most people loosely describe the PCT as following the Sierra Nevada and Cascade Ranges, in northern California and southern Oregon the trail makes a 200-mile east-west arc to explore the distinctive Klamath and Siskiyou Mountains. These are ancient ranges (dating back 500 million years before the time of dinosaurs) and geologically noteworthy. They are the only mountains in North America made up largely of ultramafic rock. This means that the rock beds of the Klamaths and Siskiyou were once molten matter that solidified in the earth’s crust before rising to the surface because of collisions between tectonic plates. Because of this history, the Klamath-Siskiyou Mountains exhibit a tangle of complex ridgelines running in multiple directions. Unlike their neighbors the Cascades (which are characterized by comparatively terrain, punctuated by snowy, volcanic peaks), the Klamath-Siskiyou Mountains are known for steeply eroded valleys, high exposed ridgetops, and limited evidence of glaciation.

In addition to being geologically and topographically distinctive, these mountains are home to a remarkable confluence of habitat types, supporting flora and fauna of the Great Basin, Cascades, Coastal Range, California’s Central Valley, and the Sierra Nevada ecozones. More than 3000 plant species occur in the Klamaths and Siskiyou. But the regions most storied inhabitant is Sasquatch – also called Bigfoot, the abominable snowman, American yeti or omah – who is rumored to hide in the mountains’ dark forests and deep canyons.

-From the USFS Pacific Crest National Scenic Trail Map, Cascade Series-Southern Oregon

This section boasts rugged outcrops, gap views, high cirque meadows, old-growth forest stands, splendid wildflowers, and often lingering snowfields. Mount Ashland, Mount Shasta, Pilot Rock, the Trinity Alps and Marble Mountains, along with the Applegate and Rogue Valleys, create stirring views. The sampling successfully combines convenient access with lonesome stretches.

-From: 75 Hikes in Oregon’s Coast Range & Siskiyou, By Rhonda Ostertag, George Ostertag

Siskiyou Boundary National Recreation Trail:

The Rogue River-Siskiyou National Forest’s Boundary Trail offers an epic ridgeline experience in a botanically wondrous roadless area. Unfortunately, this unique backcountry trail is threatened by Off-Road Vehicle (ORV) use and the noise and ecological damage that follow suit.

The 15-mile Boundary Trail connects Tannen Mountain, just west of the Red Buttes Wilderness, to Grayback Mountain, a defining peak of the northern arm of the Siskiyou Crest. The trail criss-crosses the ridge between the Illinois and Applegate Valleys, offering spectacular views of the maze of jumbled mountains that define southern Oregon and northern California.

The Boundary Trail is a recreational paradise within the 100,000-acre Kangaroo Roadless Area, which is proposed as an addition to the Red Buttes Wilderness. On the north end are glorious wildflower meadows, an historic cabin and the monumental peak of Grayback. On the south end are the marvels of the Red Buttes Wilderness, with complex geology, and mountain lakes tucked into forested folds. To the west is the Oregon Caves National Monument and the flower-laden Bigelow Lakes. From anywhere on the trail one can discover rare plants and climb peaks that are mostly unseen from any road to soak in expansive views of the Illinois, Applegate and Klamath River drainages.

Sterling Mine Ditch Trail:

This route on the Medford BLM in the Little Applegate Valley is a wonderful, low-elevation trail that follows the decommissioned Sterling Mine Ditch through a diverse array of ecosystems including pine oak savannah, old growth conifer forest, white oak woodland, riparian forest and chaparral. This is a mostly gentle trail with sweeping views of the Little Applegate Valley and the Siskiyou Crest.

The trail tours a remnant from Oregon's colorful prospecting era. Placer gold strikes in the early 1850s led to the founding of Jacksonville, and in 1877, miners fashioned an artificial creek to draw water from the Little Applegate River to blast apart the mineral-rich Siskiyou mountainsides with concentrated hydraulic force. The 26.5-mile-long, 3-foot-deep ditch, completed in 6 months, remained in use until the 1930s. Now, a stream of hikers flows alongside the ditch. The historical route passes through deciduous-evergreen transition forest and across oak-grassland hillsides. This trail stays accessible and snow free nearly all winter, and in the spring, wildflowers abound.

Mule Mountain Trail:

This rugged trail climbs 2,400 feet in four miles to a 4,200-foot saddle between Baldy Peak and Little Grayback Mountain. The first two miles of the hike are the steepest as your route switchbacks through a woods of fir, pine, black oak and madrone. The climb becomes more gradual along an open ridgeline.

The ridgeline is dotted with giant poison oak bushes as well as manzanita. Mother Nature can cut down the limb on a madrone in a moment here, but these trees show the full extent of their adaptability by branching into massive multi-trunked giants. Bear scat commonly shows up on the trail, and views of the Red Buttes eventually open to the south.

The trail skirts the southern flank of Mule Mountain before opening up for views of Baldy, a 4,645-foot peak with a steep, grassy southern exposure.

The saddle between Baldy Peak and Little Grayback Mountain can be an idyllic spot to rest, but it's also prone to chilly winds. The land drops away to the east in steep, green hillsides, which caused one Massachusetts hiker who found this spot to remark, "It looks like something out of the 'Sound of Music.'" "

You could turn around at the saddle, but a short scramble, an additional 450 feet of elevation gain and a lot of huffing and puffing take you to the top of Baldy. A couple of tall trees to the north of the peak obstruct views in the Mount Ashland direction, but the sweep of the Siskiyou Crest proves enthralling. The summit of Baldy manages a view along with a welcome, albeit unlikely, wind-free zone.

-From the Medford Mail Tribune, April 10, 2008

APPENDIX F: SELECTED ROADLESS AREAS

Attributes of Featured Roadless Areas Within the Proposed SCNM.

Condrey Mountain Roadless Area

The 20,000-acre Condrey Mountain Inventoried Roadless Area (IRA) is adjacent to the Red Buttes Wilderness and the Kangaroo Roadless Area and contains 12 miles of the Pacific Crest Trail, three botanical areas, extensive subalpine meadows and diverse conifer forests for which the Klamath-Siskiyou region is known. This remote spot represents some of the most pristine old-growth forests the Siskiyou have to offer.

Condrey Mountain at 7,112 feet may be only the sixth tallest Siskiyou peak, but it is the center of geologic uplift in the Siskiyou Mountains. Geologists explain that Condrey likely would be the highest Siskiyou peak if it was not rising so quickly, spreading and crumbling its mass of schist out like a metallic rock sunburst. Adding to Condrey's character is a cirque basin, Alex Hole, carved by glaciers out of its northeast face.

Condrey's crumbly schist provides a lot of excellent rock garden habitat. Scrambling along the many outcrops in the area, one can find four lewisia species, four monkey flowers, strawberry leaved saxifrage, quaking aspen, and a plethora of both common and rare stonecrops, to name a few of the rare and noteworthy plants. One stonecrop with deep maroon flowers rather than the usual yellow or white, was only known in the Siskiyou from Condrey Mountain, until its recent discovery on nearby Lake Peak.

Dakubetede Roadless Area (uninventoried – BLM)

The Dakubetede Wildland includes approximately 6500 acres, mostly on the south slopes of Anderson Butte, ranging in elevation from 2000 – 5200 feet. Featured in the book "Oregon Wild", this area was proposed as the Dakubetede Wilderness in 1980, not only for its popular Sterling Ditch hiking trail system, but also because this area is one of the most ecologically diverse in the region.

This remarkable island of low/mid-elevation wildland encompasses a complex mosaic of habitat types ranging from grasslands, diverse shrublands, mixed conifer/hardwood forest, late-seral dry site Douglas fir forest, oak woodland and rich riparian zones along Birch Creek, Rush Creek, and the Little Applegate River.

As part of a 28,000 acre allotment that has been free from grazing for the past 27 years, this area presents an unprecedented opportunity for research, restoration and conservation. The Dakubetede area functions as an important corridor for wildlife, serving as a migration route connecting high country ridges to the river and valley below. It is recognized as a critical winter range for deer, and supports healthy populations of cougar and bear.

This area is being considered as potential Research Natural Area (RNA) for typical chaparral in the eastern Siskiyou; and is noted as the northern extension of the sclerophyllous shrub communities of California. The Dakubetede contains Oregon's only occurrence of the Siskiyou Black Birch along Birch Creek in Muddy Gulch. The largest grove of Western Juniper in the eastern Siskiyou is on the upper slopes of Anderson Butte.

The globally imperiled association of Oregon Oak/Wedge-leaf Ceanothus/Idaho Fescue has examples here, as does the federally endangered lily *Fritillaria gentneri* and *Sedum oblancoletum*. The size, low elevation and quality of habitat of this proposed Wilderness is unique, and the entire area is virtually free of yellow star thistle, a rare condition considering the extensive grassland and shrub-

bland habitats.

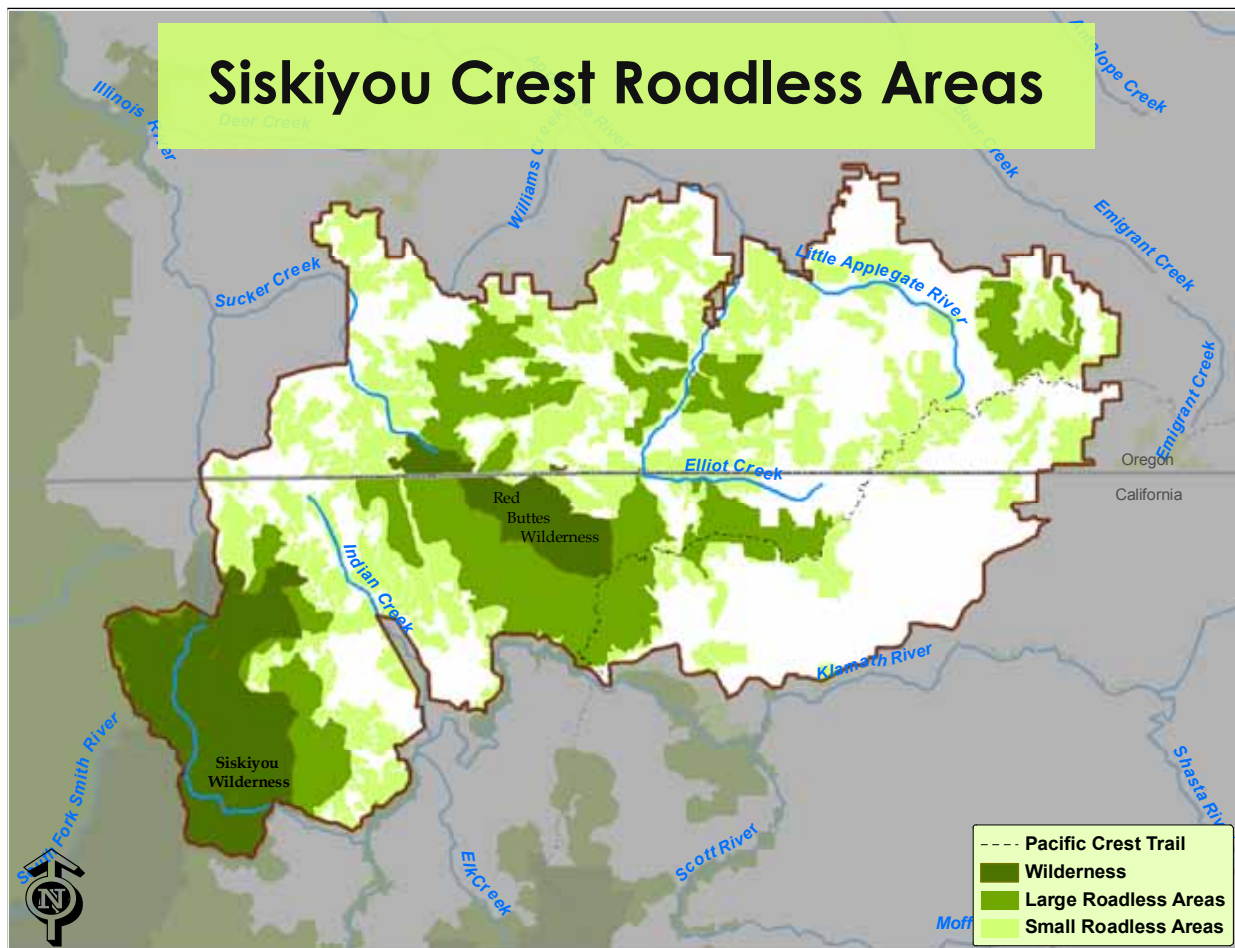
Kangaroo Roadless Area

The 68,000-acre Kangaroo Roadless Area is named for Kangaroo Mountain, which lies along the southeastern corner of the Red Buttes Wilderness. This proposed addition lies mostly in California and includes the upper Thompson Creek drainage, the Devil’s Peak area directly south of the Red Buttes and the Horse Creek, and Cook and Green drainages to the east of the wilderness. Home to nearly 30 conifer species and dozens of of endemic plant and animal species, the Siskiyou Crest is one of the jewels of Oregon. The Pacific Crest Trail traverses a large portion of this area, offering outstanding vistas.

McDonald Peak (Ashland Creek) Roadless Area

The 9,500-acre McDonald Peak Roadless Area is the farthest east of the roadless areas along the Siskiyou Crest. It lies about 3 miles west of Ashland and includes the headwaters of Ashland Creek and the municipal drinking supply of the City of Ashland. Elevations range from 3,280 to 7,280 feet. The roadless area includes both Wagner Butte and McDonald Peak. It consists primarily of virgin old-growth forests and contains rare high-elevation meadows. Mount Ashland, the highest peak in the Siskiyou at 7,533 feet, overlooks the roadless area.

The Siskiyou Crest is noted for its biological diversity. McDonald Peak alone possesses three candidate botanical areas; one includes Mount Ashland lupine, found only on a 45-acre plot on the Siskiyou Crest and considered one of the rarest plants in Oregon. Henderson’s horkelia is also found here in its greatest abundance. Engelmann spruce, rare this far south, is also found in this roadless area. All three are threatened by the proposed expansion of the Mount Ashland Ski Area



APPENDIX G: A SYNOPSIS OF MANAGEMENT GOALS AND OBJECTIVES FOR THE PROPOSED KARUK ECO-CULTURAL RESOURCE AREA

(Drawn from the Karuk Tribe Department of Natural Resources Eco-Cultural Resources Management Plan)

The Karuk vision of ecosystem management is one that is adaptive, holistic, and sustainable for people and place. Ecosystem management should take care of the land, address people's needs, use resources wisely, and practice ecologically balanced stewardship.

Our ancestral homeland is slowly being stripped of diversity by former and present activities that have depleted old growth forest characteristics, resulted in loss of grasslands and open canopies, decreased fisheries and water quality, habitat loss, as well as increased unnatural abundance and distribution of conifer and shrub species.

For thousands of years we have shaped the ecological condition within carefully observed natural processes and limits. Strictly enforced natural laws govern how the land should be cared for. Slow low-intensity traditionally set fires sustain multitudes of land management benefits. By the nature of our historic domain we enhance environmental processes to perpetuate natural adaptation and diversity.

The scientific community until recently dismissed the fact that indigenous people intentionally practiced conservation (Anderson 2005, World Wildlife Fund et. al. 2000). Knowledge that Tribal elders have acquired about the past, as well as contributions and observations made by the Karuk Department of Natural Resources are essential to gaining a better understanding of the dynamics of the Klamath Siskiyou Eco-region.

As the second largest indigenous Tribe in California we have un-surrendered sovereign rights that provide for the specific protection and sustainability of our traditional uses and needs. As guardians of our ancestral land we are obligated to support practices that emphasize the interrelationships between the cultural elements and physical dimensions of ecosystems.

Traditional subsistence uses; hunting, trapping and fishing, nut and seed harvesting, mushroom and berry gathering, medicinal plant gathering, the basketry-artisan materials, have all but diminished. The quality, quantity and accessibility of subsistence resources have however declined significantly. Of great importance to sustaining traditional subsistence is the reversal of trends leading to what has happened to native anadromous fishery reserves now nearly devastated and severely threatened (Lichatowich 1999).

Karuk Goals and Objectives for Selected Management Areas:

Fire/Fuels Reduction:

The restored role of both human and fire upon the landscape is the condition in which the Karuk Tribe Fire/Fuels Reduction Program is steering its management direction towards for the future. We envision an Interagency/Tribal and local community collaborative planning and implementation effort at the watershed scale.

Interagency Representatives/Tribal Resource Specialists would comprise a planning body that examines entire watersheds for prioritization of implementation efforts based on achieving multiple resource objectives while meeting restoration needs systematically. Utilization of a local workforce is

a key component of implementing this strategy.

Goals: Protect cultural/natural resources from uncharacteristically intense wildland fire. Promote fire and fuels management actions that achieve multiple resource objectives. Enhance the interconnectivity of microhabitats and improve ecosystem function. Restore traditional human interacted natural fire regimes at the watershed scale.

Objectives: Work with Agency and/or Tribal staff to plan and implement fuels reduction and cultural burning projects based on Karuk Environmental Management Practices and principals. Coordinate with Karuk Community Development Corporation to build capacity and develop infrastructure in the interest of utilizing restoration byproducts to reduce overall treatment costs. Establish and maintain expanding wildland fire use areas within individual watersheds. Initiate/implement the appropriate management response during emergency wildland fire situations. Systematically reduce the taxpayer cost burden of wildland fire suppression activities.

Fisheries:

The Fisheries Program was the first environmental program established by the Karuk Tribe. This program conducts monitoring, research and planning in regards to projects protecting, promoting enhancing and restoring Klamath River Basin fisheries resources. Projects are planned and implemented independently and cooperatively with other agencies, Tribes and community groups within the Klamath Basin.

The Karuk Tribe believes that healthy fisheries resources are in actuality the keystone indicator species showing successful managerial practices. If core fisheries resources are in decline, the underlying management of all resources is failing.

Goals: Protect the health and abundance of Tribal Trust Fisheries Resources. Promote an understanding of ecological processes that allow for the abundance and availability of fisheries resources to the Tribal and local communities that depend on them for a healthy subsistence diet and/or recreation. Enhance the quality, quantity, and availability of correlating microhabitats upon which fisheries resources depend. Restore traditional fisheries harvest management practices and make them applicable to all resource users and managerial organizations claiming concurrent or parallel jurisdictions.

Objectives: Establish Tribal Ordinances relating to traditional harvest methods, timing, and area closures. Educate agencies, interested publics and youth of the importance, foundation, and purpose of traditional fishery management from both cultural and biological perspectives. Work with agencies organizations and community groups to plan, prioritize, and implement emergency and long range projects relating to fish passage, habitat improvement, holding capacity, population augmentation and monitoring.

Forestry:

The Karuk have a fire dependant and adapted culture, and as a result of economically driven forestry management, the local forest structure no longer provides on an adequate scale the diversified resource access that is vital to the perpetuation of Karuk culture. Although Timber harvesting is not a Karuk traditional cultural practice, it has become a necessary management action if completed in a fashion that augments and enhances cultural management practices in the interest of restoring fire adapted ecosystems.

The Karuk Tribe believes there is now a need to manage forest habitats in a sustainable manner which can result in the restoration of human interacted natural disturbance regimes while providing abundant cultural/natural resources, balanced ecological processes, as well as local economic

opportunities and reduced cost of management activities to the taxpayer.

Goals: Protect territorial watersheds from being adversely effected by economically driven single resource timber management. Promote sustainable timber management practices based on achieving multiple resource objectives (Kimmins 1997). Enhance the integrity of forest stand dynamics and cultural/natural resources. Restore diverse fire adapted ecosystems and correlating natural fire regimes at a reduced cost to the taxpayer.

Objectives: Utilize silvicultural, mechanical, or hand methods to modify the composition, structure, and morphological form of forested habitats to be enhanced and maintained by a culturally defined human interacted natural fire regime. Integrate traditional ecological knowledge, western science, and departmental program objectives into forest management activities. Implement a stewardship based approach to integrated management practices at the watershed, scale. Ensure any economic benefit from management activities transfers to additional landscape restoration actions. Plan forest stand improvement treatments to accomplish fuels reduction, wildlife habitat enhancement, cultural basketry material improvement, and traditional foods production.

Native American Graves Protection and Repatriation:

Goals: Protect the human remains, funerary items, and cultural items of the Karuk People. Promote the interest of the Karuk Tribe in the event of an inadvertent discovery and intentional excavation or removal of Native American remains and objects within the Karuk Aboriginal Territory. Enhance the Tribes ability to manage Tribal and family specific cemeteries and/or ceremonial items. Restore Tribal control of items removed from the Karuk Aboriginal Territory.

Objectives: Facilitate the return and reburial of human remains and funerary items affiliated to the Karuk Tribe. Repatriate sacred and ceremonial items, and objects of cultural patrimony, to the Karuk People. Preserve the knowledge of traditional methods of construction, style, materials, and uses of sacred and ceremonial items. Consult with relevant parties in the event that an inadvertent discovery of Native American remains takes place within the Karuk Aboriginal Territory. Prevent intentional excavation and removal of Native American remains and objects within Aboriginal Territory. Obtain complete inventories of cultural items under the control of museums and Federal Agencies. Review and prioritize the repatriation of cultural items.

Mining:

Past and current mining activities have destroyed and degraded the environmental quality Karuk People depend upon for cultural survival. The effect of past hydrologic mining has resulted in many areas that are in need of geologic stabilization and reconfiguration, vegetation management, and toxic clean up to remove mercury, acid mine drainages, cyanide spills and other contaminates. The recent onslaught of recreational suction dredging activities can threaten fisheries habitat quality, water quality and produces foreign materials and substances known to be harmful to the environment.

Goals: Protect water quality and fisheries from mineral extraction, quarry, and soil disturbance activities. Promote intensive regulation and evaluation of mining methods and practices that can potentially degrade other resources. Enhance knowledge through monitoring of impacts and effects to the environment associated with past and current mining or aggregate activities to improve operations. Restore degraded areas affected by mining, aggregate, quarry, or road related soil disturbance, that include but are not limited to recovery and removal of toxic contaminants, reduce soil erosion, improve natural hydrologic function, re-vegetation, and protection of cultural/natural resources.

Objectives: Implement restoration measures that mitigate damaged areas affected by past hydrologic mining to minimize soil erosion, reconfigure topographic contours and drainage, and manage vegetation to enhance the structure and composition to accommodate natural processes (fire, hydrologic connectivity, and nutrient cycling). Remove and/or reduce the presence of toxins such as mercury, sulfuric acid and cyanide in sediment deposits and watercourses. Monitor and reduce the effects and activities associated with suction dredge mining. Inventory rock sources and mitigate for erosion potential and off site sediment delivery. Develop economically and environmentally low impact methods of aggregate removal to supply for local upgrade, maintenance and restoration activities. Work with Federal, State, and County Agencies, and community groups to ensure cultural/natural resource protection measures are adequate and in place.

Watershed Restoration:

The Watershed Restoration Program was established in 1996 in the interest of developing a programmatic approach to watershed restoration in the Karuk Aboriginal Territory. In collaboration with various partners, we have established a framework to identify, plan, and implement projects that benefit water quality and quantity. Redefining and expanding the role of the Karuk Tribe in managing traditional cultural/natural resources has brought about the development of a watershed restoration partnership between the Karuk Tribe and the Forest Service. Building the Tribe's capacity to play an integral role in ecosystem management is an effective means by which the Mid-Klamath and Salmon River sub-basins will be restored and integrated resource management achieved.

Goals: Protect watersheds from road related erosion, water quality and/or habitat connectivity problems. Promote activities in tributaries that contribute to the quality and availability of spawning, rearing and migration habitat, for Threatened and Endangered, anadromous, and resident fish populations. Enhance the quality and quantity of water and correlating microhabitats in territorial watersheds as they relate to road related impairments. Restore hydrologic function within and adjacent to high priority roads and/or watersheds.

Objectives: Establish and maintain beneficial partnerships through collaboration with Agency staff to plan and implement watershed restoration projects. Implement watershed restoration projects while providing job training opportunities, and community economic development. Build capacity and develop infrastructure in the interest of reducing restoration costs, while providing for timely habitat recovery. Coordinate with departmental program staff to achieve maximum planning integration and coordinated implementation of multiple resource objectives.

Wildlife:

The Karuk culture relies upon various wildlife species as food, medicine, materials, and ceremonial regalia. Many wildlife species once historically abundant are now rare, threatened, endangered, and extinct or have experienced degradation of their population levels and correlating habitats (Noss et. Al 1999).

Of greatest concern in terrestrial environments are the management and population viability of elk and deer and the restoration of habitats needed to support these animals. Also important is the reintroduction of eliminated or extirpated species. Habitats that support the diverse multitude of culturally significant wildlife species are dependant upon fire and fire induced habitat changes at the landscape level. Elk, deer and other foraging wildlife help to maintain vegetation re-growth in between fire events. In turn, these fire events help to maintain viable populations of foraging wildlife.

Goals: Protect wildlife and correlating habitats from further degradation, caused by post contact management practices. Promote sound management practices based on Traditional Ecological Knowledge and the best of Western Science. Enhance wildlife habitat and population viability.

Restore the interconnectivity of correlating habitat types and traditional eco-cultural maintenance schedules.

Objectives: Coordinate wildlife species habitat management and population monitoring with Tribal Federal, State, and County, governments, non-governmental organizations, and local community groups. Manage wildlife through forests, shrub, and grassland habitat restoration activities utilizing hand and mechanical treatments in conjunction with prescribed fire. Focus restoration activities on culturally significant forest, shrub, and grassland habitats through landscape level planning to support holistic ecosystem management (Hillman and Salter 1997). Re-establish inter-connectivity between various habitat types across the landscape to foster gene flow and dispersal of wildlife necessary to sustain viable wildlife populations. Where appropriate, manage for single/indicator species in an effort to prevent further habitat loss, degradation, endangerment, local extinctions, or allow for reintroductions.

Collaborative Framework:

The collaborative framework needed to appropriately plan and implement watershed scale restoration priorities, as well as maintaining these treated areas, will require collective vision and long term dedication. The National Fire Plan calls for local planning and implementation to handle local problems.

This leaves successful collaboration reliant on long term dedication and agreement between planning partners. The Karuk Tribe believes that in order to maintain long term effectiveness there is a need to incorporate a diversely unified approach involving Tribes, agencies, local business, non-profit organizations, community groups and local citizens.

“This commitment by the Forest Service and the Karuk Tribe extends beyond our standard governmental relationships to one of a dynamic interactive partnership that seeks to meet cultural, spiritual, and environmental needs of the Karuk and other local communities by utilizing traditional ecological knowledge as a base for decision-making in the Karuk Environmental Management Practices Demonstration Area.” (KEMPDA 2005)

The Karuk Tribe believes that looking at the ecological restoration needs at the appropriate scale will help to localize prioritization and identification of multiple resource objectives, while ensuring integration of the local knowledge base.

APPENDIX H: STREAMS AND KEY WATERSHEDS*

*Key Watersheds for salmon recovery appear in bold italics

Subbasin	Watershed	Subwatershed	State
Applegate	Middle Applegate River	Applegate River/Humbug Creek	OR
Applegate	Middle Applegate River	Thompson Creek	OR
Applegate	Williams Creek	West Fork Williams Creek	OR
Applegate	<i>Little Applegate River</i>	<i>Lower Little Applegate River</i>	OR
Applegate	Middle Applegate River	Applegate River/Spencer Gulch	OR
Applegate	Williams Creek	East Fork Williams Creek	OR
Applegate	Applegate River/Mckee Bridge	Applegate River/Star Gulch	OR
Applegate	<i>Little Applegate River</i>	<i>Middle Little Applegate River</i>	OR
Applegate	<i>Little Applegate River</i>	<i>Upper Little Applegate River</i>	OR
Applegate	Applegate River/Mckee Bridge	<i>Applegate River/Beaver Creek</i>	OR
Applegate	<i>Little Applegate River</i>	<i>Yale Creek</i>	OR
Applegate	Applegate River/Mckee Bridge	<i>Applegate River/Palmer Creek</i>	OR
Applegate	Upper Applegate River	Lower Carberry	OR
Applegate	Upper Applegate River	Sturgis Fork Carbery Creek	OR
Applegate	Upper Applegate River	Steve Fork Carberry Creek	CA-OR
Applegate	Upper Applegate River	Squaw Creek	OR
Applegate	Upper Applegate River	Applegate Lakefront	OR
Applegate	Upper Applegate River	Elliott Creek/Silver Fork	CA-OR
Applegate	Upper Applegate River	Middle Fork Applegate River	CA-OR
Applegate	Upper Applegate River	Elliott Creek/Dutch Creek	CA-OR
Applegate	Upper Applegate River	Butte Fork Applegate River	CA
Illinois	Deer Creek	Middle Deer Creek	OR
Illinois	Deer Creek	Upper Deer Creek	OR
Illinois	Deer Creek	Mc Mullin Creek	OR
Illinois	East Fork Illinois River	Lower East Fork Illinois River	OR
Illinois	Sucker Creek	<i>Grayback Creek</i>	OR

Subbasin	Watershed	Subwatershed	State
Illinois	Sucker Creek	Lower Sucker Creek	OR
Illinois	Sucker Creek	Upper Sucker Creek	OR
Illinois	East Fork Illinois River	Dunn Creek	CA-OR
Illinois	East Fork Illinois River	Upper East Fork Illinois River	CA-OR
Illinois	East Fork Illinois River	Althouse Creek	CA-OR
Lower Klamath River	Indian Creek	East Fork Indian Creek	CA-OR
Lower Klamath River	Indian Creek	Mill Creek	CA-OR
Lower Klamath River	China Peak	Thompson Creek	CA-OR
Lower Klamath River	China Peak	Twins Creek	CA
Lower Klamath River	Indian Creek	South Fork Indian Creek	CA
Lower Klamath River	Clear Creek	Red Hill Creek	CA
Lower Klamath River	Indian Creek	Lower Indian Creek	CA
Lower Klamath River	China Peak	China Creek	CA
Lower Klamath River	Clear Creek	Tenmile Creek	CA
Lower Klamath River	Ukonom Creek	Oak Flat Creek	CA
Lower Klamath River	Clear Creek	Fivemile Creek	CA
Middle Rogue	Bear Creek	Bear Creek/Larson Creek	OR
Middle Rogue	Bear Creek	Griffin Creek	OR
Middle Rogue	Bear Creek	Anderson Creek/Fern Valley	OR
Middle Rogue	Bear Creek	Bear Cree/Meyer Creek	OR
Middle Rogue	Bear Creek	Bear Creek/Hamilton Creek	OR
Middle Rogue	Bear Creek	Wagner Creek	OR
Middle Rogue	Bear Creek	Ashland Creek	OR
Middle Rogue	Bear Creek	Neil Creek	OR
Smith River	Middle Fork Smith River	Siskiyou Fork	CA
Smith River	Middle Fork Smith River	Packsaddle Creek	CA
Smith River	South Fork Smith River	Prescott Fork	CA
Upper Klamath River	West Fork Beaver Creek	Konde Creek	CA-OR
Upper Klamath River	Cottonwood Creek	Upper Cottonwood Creek	CA-OR
Upper Klamath River	Cottonwood Creek	Spaulding Creek	CA-OR
Upper Klamath River	West Fork Beaver Creek	Soda Creek	CA-OR
Upper Klamath River	West Fork Beaver Creek	Bear Creek	CA-OR
Upper Klamath River	Beaver Creek	Horse Creek	CA
Upper Klamath River	Empire Creek	Vesa Creek	CA
Upper Klamath River	Grider Creek	Seiad Creek	CA
Upper Klamath River	West Fork Beaver Creek	Lower West Fork Beaver Creek	CA
Upper Klamath River	Beaver Creek	Oak Bar	CA
Upper Klamath River	Beaver Creek	Collins Creek	CA
Upper Klamath River	Grider Creek	Lower Grider Creek	CA
Upper Klamath River	Grider Creek	O'neill Creek	CA

APPENDIX I: FURTHER READING

A Partial List of Suggested Further Reading:

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