

**Siskiyou National Forest**

**Grants Pass, Oregon**

**Region 6, United States Forest Service**

**United States Department of Agriculture**

**Fiscal Year**

**1996 Monitoring Report**



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**United States Forest Service  
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**Siskiyou  
National  
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Reply To: 1920  
Date: June 3, 1997

Dear Reader:

This monitoring report summarizes the information we gathered this past year. We have gathered information of interest to the general public, some of interest to the scientific community, and some information useful to us.

Some highlights are transplanted elk in Eden Valley, follow-up of the spotted owl pair in the Sugarloaf timber sale area, the status of salmon and steelhead habitat, and the health of our watersheds.

We continue to complete watershed analyses, an important part of the Northwest Forest Plan. Bradford, Quosatana, Chetco, NF Smith, Shasta Costa, and Althouse watershed analyses provide more detailed insight for trends in watershed conditions on the Forest. With your help, we can even improve conditions in these high quality watersheds, especially for the salmon.

Forest Service employees are working hard to provide a National Forest with its lovely resources and reasonable resource outputs commensurate with conservative forest management.

Thank you for your keen interest and active involvement in the Siskiyou National Forest. Please call, write, or drop in to see me.

Sincerely,

/s/ J.MICHAEL LUNN

J. MICHAEL LUNN  
FOREST SUPERVISOR

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## 1. Transplanted Elk in Eden Valley

A cooperative Memorandum of Understanding between the Oregon Department of Fish and Wildlife at Charleston, Oregon, and the Powers Ranger District helped relocate Roosevelt elk (*Cervus elaphus roosevelti*) from the Dean Creek Elk Viewing Area to the upper Eden Valley meadows on the I Powers Ranger District. The 923 acre Dean Creek Area is located on the south side of the Umqua River, three miles east of Reedsport along Highway 38. Jointly managed by the Bureau of Land Management and by the ODF&W, this area supports approximately 120 head of elk. The Eden Valley release site, located on the east end of the Powers Ranger District, is approximately 62 air-miles south of Dean Creek.

### Procedures

On 12 December 1996, nine elk were captured in the ODF&W corral trap at the east end of the Elk Viewing Area, near the mouth of Dean Creek. ODF&W biologists John Toman and Pete Perrin released four of these captured elk on-site, and selected five for transport, loading them on a 24-foot livestock trailer. The biologists gave four shots to each animal, aged the elk selected for transport (1-1/2, 3-1/2, and 6-1/2-year old cows, and two female calves), and took blood samples. The biologists then fitted the three adult cows with two-inch wide white collars with radio transmitters, each with a different frequency. They then transported the animals approximately 100 road-miles south to the Eden Valley site and released them at about 1530 hours.

On 18 December 1996, the biologists captured 12 more elk at Dean Creek, and selected five more (3 1/2 and 6 1/2 year-old cows, one yearling bull, and two bull calves) for transport. They again fitted three adults with radio transmitter collars and gave them shots. The same trailer transported these five animals to the Eden Valley site and the biologists released them at about 3:30 PM.

### Discussion

The effort relocated a total of 10 elk (six collared adults and four calves). All arrived in fine shape and immediately moved off together toward the northeast.

The relocation involved a distance of approximately 62 air-miles to the south, and an elevation gain of from near sea-level to 2,300 feet at the Eden Valley release site. This elevation gain will, of course, mean lower temperatures and more snow but these animals are tough and will easily adapt to the new conditions.

There is presently a large resident herd of Roosevelt elk of about 200 animals ranging throughout Eden Valley and north toward Bone Mt. The Forest Service and ODF&W have closely monitored these animals for years through annual aerial and ground surveys. We expect the relocated elk will join with this resident herd, since they are very social animals. In December 1996, we located the collared elk by use of the radio receiver. They were in coniferous forest, still within one mile of the release site, and had not yet joined with the resident animals.

The reasons for this project are several:

1. The Dean Creek elk herd is at its carrying capacity, and a certain number of animals need to be annually removed to maintain healthy herd and habitat conditions.
2. Captured animals may be tested for diseases such as brucellosis and heartworm, by drawing blood samples.
3. A certain amount of genetic diversity occurs by introducing new animals into an area.
4. In addition to our present visual observations of animals and sign, we can now also accurately determine locations by use of the radio transmitters and receiver. The transmitters are designed to last up to five years, and signals may be received (straight line) for several miles.

Monitoring by the US Forest Service will facilitate better management of the habitat through knowledge of daily and seasonal movements, and of habitat use and preferences. The ODF&W will be better able to set harvest regulations by monitoring such population characteristics as cow/calf and cow/bull ratios, and total numbers. This project ultimately results in better elk management at both Dean Creek and Eden Valley, and most importantly, is good in the long run for the elk. Monitoring of these elk will continue during the next several years.

This project also provided a fine opportunity for public education and information. A great deal of local interest was generated; KCBY television (Coos Bay), and The World (Coos Bay) and Myrtle Point Herald newspapers all ran stories. We also talked to a group of 30 local Powers High School students and their teachers, and gave them the opportunity to observe the elk in the livestock trailer and the Powers Ranger Station.

The chief cooperators and contacts in this project are John Toman, ODF&W, and Dave Shea, USDA Forest Service.

## **2. Spotted Owls and the Sugarloaf Timber Sale**

A pair of northern spotted owls has returned to roost in some old-growth forest within the middle of the Sugarloaf timber sale. "This is a really good sign," said Fred Craig, an assistant to the wildlife biologist on the Siskiyou National Forest. "The real test will be if they are still there four or five years from now." The U.S. Forest Service designed logging on the Sugarloaf timber sale to encourage the kind of old-growth forest structure owls need to thrive - big old trees for nesting, a multi-story canopy to hide from predators, and logs left lying on the ground to habitat for prey (Excerpt from May 30, 1996 edition of the Grants Pass Daily Courier).

This pair of owls successfully fledged their only known offspring in the late summer of 1996. (They have been banded and monitored off and on since 1990.) In the past, this pair of owls has not done well producing young.



Sugarloaf lies within the Late-Successional Reserves whose purpose is to maintain and develop characteristics of older forests. The Sugarloaf timber sale was originally sold before the court battle over preserving habitat for the owl. It was logged in 1995.

### 3. Herptile Surveys

All districts survey for herptiles. The following is an example from one district. If you would like more information, please contact your local district office.

During 1996 the USDA Forest Service and the Oregon Department of Fish and Wildlife conducted basic reptile and amphibian surveys and turtle trapping operations on the Powers Ranger District, as part of a continuing cooperative Challenge Cost Share agreement. The Coos County Parks Department also assisted by allowing surveys and trapping in the Powers County Park Pond, and the construction of three western pond turtle log-basking sites (during 1995). The cooperative surveys and trapping will continue at least through 1997, with the goals of gathering basic information on species presence, distribution, and status of populations on the District.



#### METHODS

Several likely survey sites were identified on and near the Powers Ranger District, including 14 ponds and lakes, nine pumper-fill sites, four miles of the upper South Fork of the Coquille River, one mile of Baker Creek, and the Powers County Park Pond. Sites were sometimes visited randomly in conjunction with other activities; each was surveyed at least once and most were systematically visited several times. Margins of ponds and lakes were examined, often while using sweep or dip nets. Many upland sites and areas adjacent to ponds were also surveyed, by searching under logs, bark slabs, rocks, and under loose bark on downed logs, particularly on large Douglas-fir. Four miles of the upper South Fork between the Peacock and Ash Swamp Bridges were surveyed on foot for turtles on two occasions (during 1995), and one mile of lower Baker Creek (1995, 1996) for amphibians. Captured specimens were identified, measured and weighed (turtles), photographed, and released. Also, three pond turtles which had been in captivity in Coos Bay for several years were released on the District, in Bluebird Lake (October, 1995). Other personnel assisting in the 1996 field surveys include USDA FS Biologist Betsy Howell; USDA FS Biological Technician Fred Swartz; ODF&W Biologist Gary Susac; Oregon Dunes National Recreation Area Biologist Sue Powell; and volunteers Genevieve Shea, Matt Lee, and Jennifer Sperling.

## RESULTS

A total of 14 amphibian and 12 reptile species were found on or very near to the District. We determined their status by personal observations, talking with local residents, District Wildlife Observation Reports, incidental past studies, and the results of our two years of surveys. The Del Norte Salamander data is from 1971 and 1988 incidental surveys. Four more amphibian species (Western Toad, Long-toed Salamander, Black Salamander, and California Slender Salamander), and five reptile species (Sagebrush Lizard, Sharp-tailed Snake, Mt. Kingsnake, Common Kingsnake, and Western Rattlesnake) are hypothetically present on the District. Forest Service people have observed Mt. Kingsnakes and Western Rattlesnakes two miles south of Panther Ridge in the Rogue River drainage, but neither species has ever actually been reported on the Powers Ranger District. More work is needed on the other two garter snakes potentially present (*Thamnophis elegans* and *Thamnophis couchi*).

### Habitat Descriptions and Locations on the District

**Red-legged Frog** - Most common along pond edges and slow-moving water, though move into adjacent woodlands outside of breeding season. Bluebird Lake, Panther Lake, Mt. Wells, and along most slow-moving streams are all good red-legged frog habitat. Populations on the District are apparently healthy, except where overrun by bullfrogs, as in Cedar Swamp. Red-legs start breeding early here, in January or February.

**Yellow-legged Frog** - Most often seen leaping into the water from the banks of small to large permanent streams, where they burrow under bottom debris or rocks. They are common all along the main Rivers on the District, such as the South Fork of the Coquille and the Sixes River, and in such tributaries as Baker Creek.

**Bullfrog** - Abundant in Powers Pond and Cedar Swamp. They prefer large, quiet bodies of water, which fortunately precludes them from many places. They are not yet found elsewhere on the District, but these exotics (native to eastern U. S., and introduced into Oregon in the 1930's) are gradually spreading their range, and are voracious predators on native amphibians and on young western pond turtles. Many hatched egg masses were present in Powers Pond in late May. During one turtle trapping session in Powers Pond during August, 1996, Forest Service people captured 130 second-year bullfrog tadpoles in one trap.

**Pacific Treefrog** - Commonly found on the District in and adjacent to woodland ponds, such as Dry and Panther Lakes. Hundreds were observed breeding in Dry Lake in mid-May, and their distinctive calls fill the air in the spring and even during winter warm spells. They are probably our most common frog.

**Tailed Frog** - Tadpoles were occasionally found clinging to rocks in smaller, cold, fast streams, such as tributaries of the upper Coquille and Elk Rivers. No adults have been found.

**Pacific Giant Salamander** - Common bottom dwellers as gilled larvae in ponds such as the one near Lower Land Creek on Johnson Mt., Laird Lake, and slower sections of Bald Mt. Creek. Smaller larvae may often be found under rocks in smaller, higher, colder streams as well. Adults live in adjacent moist forests; one was found eating a deer mouse (*Peromyscus maniculatus*) in this habitat.

**Northwestern Salamander** - Commonly found as a gilled larvae in nearly all quiet bodies of water, such as pumper fills, and Bluebird and Mud Lakes. Several adult forms were also found at Mud Lake. The large firm egg masses are laid early in the spring, and are commonly found attached to bottom vegetation, and most often to the twigs of submerged branches. These are probably our most common salamanders.

**Olympic (Torrent) Salamander** - Prefer seepages on the edges of small waterfalls and streams. They are fairly common in the Elk River watershed, in and near small cascades along Elk River Road.

**Oregon Salamander** - Commonly found in drier upland forests under logs, rocks, or bark slabs, such as adjacent to the Johnson Creek and Bald Mt. pumper fills, and near Laird Lake.

**Dunn's Salamander** - Only occasionally found on the District. Lives among moist rocks in seeps and small streams, such as the rocky inlet to the Johnson Mt. Land Creek pumper fill.

**Del Norte Salamander** - Prefer rock and talus slope habitat. None were found in our 1995-1996 surveys, but they were reported in McGribble Creek Campground and Panther Creek (Elk River) in 1971, and in the Port-Orford-cedar Research Natural Area in 1988 (Wildlife Observation Reports).

**Western Red-backed Salamander** - Only occasionally found, usually under rocks in moist riparian areas along streams such as Coal and Squaw Creeks.

**Clouded Salamander** - Commonly found as adults in moist forests under loose bark on large downed logs (usually Douglas-fir), and occasionally on the ground. We found them in many places including Eden Valley, Coal Creek, Elk River, and near the Johnson Creek pumper fill.

**Rough-skinned Newt** - Abundantly found in and near ponds and streams, and at most any time of the year. They are also commonly found in adjacent grasslands and forests as well, as they can tolerate drier conditions than salamanders. They are the most frequently observed amphibian on the District. Azalea, Squaw, and Laird Lakes all have large populations.

**Western Pond Turtle** - Found only in the South Fork of the Coquille River drainage during these surveys, and have never been reported from the Elk or Sixes Rivers. In October, 1995, we released three pond turtles into Bluebird Lake; one of these was again observed during March, 1996. One pond turtle was sighted in the upper South Fork of the Coquille approximately one mile downstream from Buck Creek, and several others near Powers, especially near the Johnson Mt. Bridge on the south

edge of town. The largest population (15 to 20) reside in the Powers County Park Pond; 12 of these have been captured, weighed, marked, and released. One of these was a sub adult, indicating some successful reproduction despite the high numbers of bullfrogs. Traps were also placed overnight in Squaw Lake and in the main River below town (1995), with no captures. The three log basking structures placed by us in Powers Pond during May, 1995, are regularly used by turtles, and by other wildlife such as river otters and waterfowl as well.

**Western Painted Turtle** - One adult painted turtle was regularly observed basking on the far southwestern log structure in the Powers Pond, often alongside several pond turtles. It was first noted on 1 April 1996, and was regularly seen for several weeks. The range of painted turtles in Oregon normally extends only as far south as the southern end of the Willamette Valley (Brown, et. al., 1995), so this is an unusual occurrence.

**Western Skink** - Use a wide variety of grassland, rocky, and wooded habitats, and hide under rocks and debris. We found one for example in May under rocks on Mt. Bolivar, and several others were observed on the Forest Service compound.

**Northern Alligator Lizard** - Commonly found in many wooded or brushy habitats District-wide, often sunning on rocks or logs.

**Southern Alligator Lizard** - Uses a wider variety of habitats than the Northern, and was occasionally observed in brushy habitats near Powers. They are larger and much less common than the Northern.

**Western Fence Lizard** - Commonly found on any exposed rocky areas throughout the District, and is our most frequently observed lizard. Often seen in clearcuts where they take on a darker color to blend in with the fire-blackened material. First seen this year in early February. Many two to two and one-half inch long young were observed in several locations during August and September.

**Rubber Boa** - Prefers wooded or grassy areas, and is often seen sunning on the Sixes River and Salmon Creek roads. One dead one was found on the Elk River road as well, and are occasionally seen in higher elevations in that drainage (Jim Rogers, pers. comm.). Two were also observed this season on the Coal Creek (3358) road, by Betsy Howell.

**Ringneck Snake** - Found in damp grassy, brushy, or woodland habitats and are fairly common throughout the District.

**Gopher Snake** - Prefer brush, grasslands, and clearcuts, and are occasionally seen sunning on roads. They are fairly common in the Coquille drainage.

**Yellow-bellied Racer** - Also prefer more open habitats and often sun on roads. Dead and live racers were found on the Salmon Creek and main South Fork of the Coquille River roads.

**Garter Snakes** - Found in all habitats, including several swimming in ponds, and at all elevations. They are often observed sunning on roads, and are the most common snakes on the District.

Data sheets on captured pond turtles, a collection of photos and slides of herptiles and habitat, and the results of our 1995 surveys, are on file at the Powers Ranger District (541-439-3011) and at the ODF&W at Charleston.

## 4. Watershed Analyses and Watershed Health

People on the Forest continue to systematically characterize the aquatic, riparian, and terrestrial features of your valuable National Forest watersheds. Teams studied the Bradford, Quosatana, Chetco, NF Smith, Shasta Costa, and Althouse watersheds. This monitoring report incorporates, by reference, these analyses. The reader needs to refer to the specific watershed analysis for more information.

### Bradford

The Bradford Creek drainage is located between the Quosatana watershed and Lawson watershed on the south side of the Rogue River approximately 17 miles east of Gold Beach. The major land allocation in the watershed is Late-Successional Reserves, whose goals are to support older forests. Several opportunities are stabilizing road drainages, precommercial thinning in riparian areas in old harvest units, and restoring meadows to protect *Triteleia hendersonii* var. *leachiae* habitat.

### Quosatana

The Quosatana drainage covers 16,400 acres just east of the Bradford drainage. It has Matrix lands which support programmed timber harvest among other goals, and Late-Successional Reserves which support older forest habitat. Several of the listed opportunities for achieving resource objects are to improve stream crossings on roads needed for public use, decommission roads not necessary for public use, control/eradicate populations of tansy, gorse, meadow knapweed and broom, and harvest timber.

### Chetco

The Chetco River is 56 miles long with its headwaters in the Kalmiopsis Wilderness. Wilderness is the largest land allocation along with Backcountry Recreation, Late-Successional Reserves, and Matrix. Other land allocations are also present, as well as private lands. It is a National Wild and Scenic River. Restoration of large wood sources, more instream cover, and less sediment delivery are some opportunities for positive change. This analysis, as well as the others, also covers the management of Port-Orford-cedar.



### North Fork Smith

The North Fork Smith River watershed analysis covers 13 miles of the North Fork Smith River from the flank of Chetco Peak in the Kalmiopsis Wilderness to where it flows into the Smith River at Gasquet, California. It provides highly productive spawning habitat for Fall chinook, steelhead, anadromous cutthroat trout, rainbow trout, and resident cutthroat trout. One of the opportunities in this watershed is to prescribe underburn in and adjacent to older stands to reduce competition and fuels, thereby allowing development of larger trees. Another opportunity is to construct trails on older, decommissioned roads. This Wild and Scenic River will also have its management plan finalized in the near future.

## Shasta Costa

The Shasta Costa Creek key watershed contributes to the Rogue River near the community of Agness, about 30 miles east of the Pacific Ocean. It's land allocation is primarily a Late-Successional Reserve. Some opportunities for positive change include road decommissioning, riparian planting, meadow restoring, and stand density management.

## Althouse

The Althouse watershed, located on the Illinois Valley Ranger District, covers 30,000 acres which flow into the East Fork of the Illinois River. Sixty percent of the watershed is publicly owned. The analysis contains existing conditions, trends, priority locations, and treatment options. Examples of options are placing brush bundles and covers in pools, prescribed fire, thinnings, and road decommissioning.

## 5. Bird Checklist

Listen to the lonely cry of the raven overhead. Watch the northern flicker as it swoops past with brilliant red wings and white rump patch exposed. Smell the crisp, cool pines. A day of birding on the Siskiyou National Forest has just begun.

The Forest has many diverse birding habitats, with particularly good locations in the Chetco, Rogue, and Elk River corridors, the high elevation forests and brush lands near Bear Camp, Briggs Valley, and the upper reaches of the Coquille River in Eden Valley. The Forest contains over one million acres of diverse avian habitat. Over 200 bird species require these habitats for year round residency, spring/summer breeding, or migratory stopovers. The neotropical Migratory Birds migrate south to tropical environments crossing international borders.



The Forest has a bird checklist that lists the habitat preference and seasonal abundance of loons, grebes, cormorants, herons, egrets, swans, geese, ducks, vultures, hawks, eagles, grouse, quail, rail, coot,

shorebirds, gulls, terns, murrelets, pigeons, doves, owls, nighthawks, hummingbirds, kingfishers, woodpeckers, flycatchers, larks, swallows, jays, crows, ravens, chickadees, bushtits, nuthatches, creepers, wrens, wrentits, dippers, kinglets, gnatchatchers, mockingbirds, thrushes, pipits, waxwings, shrikes, starlings, vireos, warblers, tanagers, grosbeaks, blackbirds, orioles, buntings, sparings, and finches. Whew! and you thought forest management was simple!

Your observations of unusual sightings are important. Please report any unusual bird species including the size, colors, bill shape, location, habitat, and photographs to the Siskiyou National Forest, Supervisor's Office, 200 NE Greenfield Road, PO Box 440, Grants Pass, Oregon 97526 (541-471-6500).

## **6. BREWER SPRUCE ON IRON MOUNTAIN**

### General

Brewer spruce (*Picea breweriana*) is found only in the Siskiyou Mountains of southwestern Oregon and northern California, and is the rarest North American spruce. These spruce typically grow on dry to moist mountain ridges and peaks near timberline, and often under severe environmental conditions. It has a very limited range, and is a "relict" species (Baker, 1956) presently occupying only a small portion of its former range. The population on Iron Mountain, within the Iron Mountain Botanical Area, is at the northern edge of its present distribution. The nearest populations of PIBR to Iron Mountain are located at Game Lake Peak and near Snow Camp Mountain, 17 and 22 miles to the south respectively (V. Stansell, pers. comm.).

Brewer spruce is also known as "weeping spruce" because of its long and pendulous branches. It has the thin scaled-flaky bark typical of spruces and is thus quite fire-sensitive. The cones are rather unique because the scales are stiff with rounded tips and are somewhat larger (5 to 6 inches long) than other native spruces (Burns, 1990).

### Iron Mountain - Physical Conditions

Most of Iron Mountain is composed of serpentine-peridotite type soils. The summit area where the PIBR grows is apparently slightly metamorphosed sedimentary sandstones and shales. There is a thin layer of topsoil over gravel and rocks. The slope within the stand varies from level ridgetops to very steep (80%+) cliffs. The summit of Iron Mountain is at 4,026 feet, and is 13.5 miles from the Pacific Ocean measured from the nearest point just south of Humbug Mountain. Annual precipitation at the summit is approximately 70-80 inches (Baker, 1956), including some heavy winter snowstorms. The stand faces into the strong prevailing westerly winds blowing from the ocean.

## Brewer Spruce on Iron Mountain

There are several hundred PIBR in the Iron Mt. stand, located from about 3,850 to 4,000 feet elevation. This is the Canadian Life Zone on Iron Mountain, which includes such indicator species as western white pine, common juniper, and beargrass. The spruce grow on the north to northwest aspects of the summit, and cover approximately 10 to 12 acres total. There are some large Douglas-fir, small western white pine, and a very few small Port-Orford-cedar mixed in with the spruce. The understory consists mainly of various amounts of Sadler's oak, Pacific rhododendron, beargrass, and salal, in that order. Other understory vegetation includes red huckleberry, live oak, pinemat manzanita, mountain huckleberry, prince's pine, rattlesnake plantain, twinflower, and sugarstick. Fairly large areas are barren of any undergrowth because of heavy shading from the dense canopy cover. There are also numerous young and healthy 3 to 15-foot tall spruce in the understory throughout the stand. Vigorous natural regeneration is apparently typical of the species throughout its range (Burns, 1990). A comprehensive list of other Iron Mountain flora is available in the Powers Ranger District files.

Brewer spruce plant associations in the Siskiyou are most often in the white fir series (Atzet, 1984); however, no "Abies" occur on Iron Mountain.

A wide variety of ages and sizes of spruce is present in the stand. The largest PIBR I could locate on the mountain measured 25.6 inches DBH and 60 feet tall (the national record, from Josephine County, Oregon, is about 52 inches DBH and 170 feet tall) (Jenson, 1994). Most mature trees on Iron Mountain are between 15 and 23 inches DBH, and 30 to 50 feet in height. Canopy closure varies from 10 to 90%.

Forest personnel took core samples from three spruce on 30-May-1996 to determine approximate ages. The measurements and ages from these three trees are as follows:

- #1. 7.3" DBH; 19 feet tall; age 180+ years; 60% canopy closure
- #2. 14.2" DBH; 43 feet tall; age 250+ years; 75% canopy closure
- #3. 17.2" DBH; 39 feet tall; age 400+ years; 70% canopy closure

The advanced ages and relatively small sizes give an indication of the rigorous environmental conditions in this Brewer spruce habitat.

On 1-August-1996 a 1/10 acre plot was sampled in a typical portion of the stand on the northwest side of the summit. A total of 101 spruce (58 seedlings and saplings and 43 mature trees) were counted in this plot, and approximately 10 mature Douglas-fir were also present.

## Summary

This small isolated stand of North America's rarest and least known *Picea* appears to be healthy. No parasites or diseases are apparent, and no fire scars were found. Some snow and wind-damaged tops and deformities are present, as would be expected in this habitat. Cones are abundant both on the trees and on the ground and seed production is high. The large numbers of smaller trees in various stages of growth is also a good sign of overall vigor.

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## 7. Aquatic Monitoring

### Introduction:

Aquatic monitoring is an integral part of monitoring work on the Forest under the Siskiyou National Forest Land Management Plan as amended by the Northwest Forest Plan. The Forest has extremely valuable aquatic and riparian resources:

- ◆ More than one thousand miles of streams and rivers contain populations of salmonids including: chinook salmon, coho salmon, steelhead trout, searun cutthroat trout, resident rainbow trout and resident cutthroat trout.
- ◆ Five Wild and Scenic Rivers are located within the Siskiyou National Forest: -Chetco River, Elk River, Illinois River, North Fork Smith River, Rogue River.
- ◆ The Forest is located almost entirely within the Klamath Province and more specifically the Siskiyou Mountains; known for unique geology, diverse stream valley morphology and watershed conditions.
- ◆ Land allocations under the Siskiyou Forest Plan and Northwest Forest Plan provide protection for stream courses and watersheds to meet the Aquatic Conservation Strategy.
- ◆ The Forest has accomplished watershed restoration work the last fifteen years which has been directed towards streams with high anadromous fish values. Initially Forest restoration work concentrated on instream projects, but during the past decade much road drainage repair work and road obliteration has been accomplished.



Monitoring of aquatic and riparian conditions is particularly relevant under the Forest Plan. The agency is focusing emphasis on sustaining refugia for anadromous salmonids with the Aquatic Conservation Strategy key components: Key Watersheds, Riparian Reserves, Watershed Analysis and Watershed Restoration. Key watersheds, many located in Late Successional Reserves, are refugia for anadromous fish and other aquatic/riparian dependant species.

The Forest has one of the larger fisheries programs in the Pacific Northwest Region and the tracking of aquatic and riparian resource health will continue. The Siskiyou National Forest has done considerable watershed restoration, focused on key watersheds. The Forest is establishing quantifiable baseline conditions for streams within key watersheds and other watersheds. This data will be used to track the recovery of watersheds, riparian zones and streams for the next several decades.

## **Monitoring of Siskiyou Mountain Streams and Watersheds**

Aquatic monitoring is in three categories:

- - baseline monitoring,
- - implementation monitoring,
- - trend monitoring, and
- - effectiveness monitoring.

Forest monitoring measures existing stream conditions and/or fish populations to detect changes over time. Watershed restoration projects and a decrease in resource extraction activities under the Forest Plan will hopefully improve stream and watershed conditions.

These changing conditions may be masked by the highly variable nature of Klamath/Siskiyou Mountain geology and subsequent watershed conditions. For example, the Forest contains extensive areas of serpentine geology where tree growth is retarded by soil conditions, both in coastal maritime climatic conditions and the drier eastern portions of the Forest. Situations such as serpentine geology have made it extremely difficult to arrive at specific baseline stream conditions which can be applied to all Forest streams. Expected numeric values for stream conditions: large wood pieces per mile, maximum water temperatures, pool frequency and expected channel dimensions cannot be applied to all Forest streams, even those in relatively pristine watersheds of Wilderness areas or roadless areas.

## **Description of Monitoring Techniques, Brief Summary of Findings, Future Monitoring**

### **1. Stream Inventory - Level I and Level II Stream Surveys**

Description:

The Forest has completed Level I and Level II stream surveys, following Region 6 protocols, in most third order or larger fish-bearing streams. We conduct these surveys usually from the stream mouth to the upper limits of salmonid fish range. Surveyors walk up the streams recording fish habitat, fish abundance by species and riparian forest conditions. During 1996, we surveyed about sixty-five miles. About 700 miles of stream survey data is in the Forest database. This protocol will be repeated about

every ten years for baseline, trend and effectiveness monitoring.

Stream inventories are necessary to capture stream and riparian conditions for all stream reaches containing salmonid fish, comparing overall stream conditions each decade. Under this protocol, surveyors divide the streams into reaches with similar attributes. Some parameters measured by repeatable Level I and II surveys are:

- ◆ Movement of large wood, stream channel dimensions, location of primary pools, significant channel changes, rearing habitat use by salmonids, gross changes in substrate materials, changes in side channel habitat, and approximate numbers of juvenile salmonids.

Findings:

**Siskiyou Mountain streams are diverse, pools per mile, large wood per mile, stream temperature regimes and other measurable attributes do not always fit a predictable pattern. Stream surveys have documented a shortage of large wood and large pools in some areas with a past history of mining, streamside timber harvest and stream cleanout. Some streams, with few human influences, also have little instream large wood. In watersheds with serpentine geology, wood is lacking and elevated summer water temperatures are common.**

Future Stream Surveys:

Level II stream surveys need to be repeated in most fish-bearing streams in the next ten years. Some improvement in stream and riparian conditions is predicted due to better land management practices implemented with the Siskiyou Land Management Plan. Suspect or incomplete data and more accurate baseline conditions will be quantified in future surveys.

## 2. Project Monitoring - Level III Stream Surveys

Description:

Level III surveys are done in stream segments shorter than the stream reach identified during Level I and II surveys. Where the Level I and II stream survey is designed to note many overall stream conditions by walking the entire fish-bearing length, Level III surveys concentrate on stream segments usually less than one mile in length. Surveyors set cross-sections, conduct pebble counts, create photo points, make accurate counts of fish, map habitat units and conduct Rosgen stream typing in these stream segments. The Rogue Community College, using funding from a State grant, cooperated with the Siskiyou National Forest for this type of survey in Taylor Creek, Waters Creek and West Fork Taylor Creek.

The Siskiyou National Forest employs Level III stream surveys in established *critical reaches*. These response segments are barometers of changes in watershed conditions. Most critical reaches are in unconfined and low gradient stream types. During 1996, we completed approximately eight miles of Level III stream surveys. Survey locations are shown in *Exhibit B*.

Some of the uses of Level III surveys are:

- ◆ Pre and post-project monitoring of habitat restoration projects, establishment of monitoring

- segments to note changes from management activities - timber sales, mining activities or upslope watershed restoration projects, and trend monitoring.
- ◆ In conjunction with other sampling techniques, evaluating effects of suction dredge mining on macroinvertebrates and salmonid habitat.

#### Findings:

**Level III surveys documented changes in fish habitat from instream projects. Some early habitat improvement work has not had the desired results. Monitoring has detected changes in populations of juvenile salmonids from year to year in several critical reaches. Numbers of juvenile coho salmon and steelhead have been tracked in stream segments in upper Illinois River tributaries and the Middle Rogue River for several years with this methodology. It appears too soon to note substantive stream channel changes from upslope and road restoration.**

#### Future Monitoring Surveys:

These intensive surveys will continue in response stream segments downstream of watershed restoration projects in key watersheds. Additional critical reaches will be added to the Forest monitoring efforts. Many of these response surveyed areas are where temperature information and macroinvertebrate sampling is done. Doing level III stream surveys to these areas are cost effective.

### 3. Spawning Surveys

#### Description:

Most spawning surveys complement the Oregon Department of Fish and Wildlife (ODFW) spawning surveys in the South Coast and Rogue River basins. Spawning surveys done in 1996, primarily targeted to coho salmon and fall chinook salmon followed ODFW protocol. The surveyor visited the spawning stream segment each seven to ten days during the period when adult salmon were expected to be present on the spawning beds. The surveyor recorded the numbers of adults, carcasses and redds for each visit as well as basic weather and water condition information. Each spawning segment is from one-half to one mile in length. Monitors finished approximately ten miles of spawning surveys on the Siskiyou National Forest during 1996 and the locations are shown on *Exhibit C*.

#### Findings:

**Forest Service biologists documented spawning surveys as good information on escapement of coho and chinook salmon in many watersheds. The Oregon Department of Fish and Wildlife has hired several crews, partially funded by the National Marine Fisheries Service, to take over surveying of many of these segments. The numbers of coho salmon spawners has been increasing the past few years. These escapement numbers are valuable in conjunction with juvenile estimates made in the summer months to track recovery of salmon stocks.**

#### Future Spawning Surveys:

The Forest Service can provide valuable salmon escapement information to the public by continuing some spawning surveys. These surveys, continued in stream segments not covered by State efforts,

are practical and cost effective. Monitoring stream segments where salmon spawned historically, but are today present in limited numbers, will be valuable in tracking the recovery of salmon populations and their re-populating of these areas.

#### 4. Juvenile Salmonid Surveys

##### Description:

These stream surveys are a variation of Level II stream surveys where basic habitat dimensions are collected and more accurate counting of juvenile salmonids in randomly selected pool, riffle and side channel habitats is done. Scientists use survey information to measure trends in salmonid populations over an extensive length of habitat in a watershed. This data is most meaningful when collected in the same streams where spawning surveys are conducted, thus making the tie between adult spawners and the standing crop of juveniles of the same species. Forest monitors surveyed approximately thirty miles of stream habitat in the upper Illinois River basin in a cooperative effort with the Oregon Water Trust and Tioga Resources, Inc. This long-term monitoring focused on salmonid production in Sucker Creek, a key watershed.

##### Findings:

**Sucker Creek contains some of the finest intact riparian forest and side channel habitat in the Rogue River basin. It was found that coho salmon, steelhead and cutthroat trout use much of the stream habitat on private lands as well as public lands. During the good water year of 1996 there was salmonid rearing downstream to the confluence of Sucker Creek and the East Fork Illinois River. Flow measurements provide a rough estimate of water flow needed in future years to keep the entire stream viable for salmonids.**

##### Future Juvenile Salmonid Surveys:

It is recommended that this type of survey be conducted in several watersheds on the Forest. It is a rapid and cost effective methodology that can collect valuable information on salmonid populations by habitat area and habitat length. Correlated with some spawning survey data, relatively accurate tracking of population fluctuations can be made.

#### 5. Macroinvertebrate Sampling

##### Description:

Scientists sample aquatic macroinvertebrates (aquatic insects) to gauge the health of the stream system. The presence of sediment tolerant insect taxa, insects tolerant of high water temperatures or a plethora of "generalist" insect taxa can indicate impairment of a stream. More than one hundred samples have been collected on the Siskiyou National Forest during the past four years. In 1996 contractors sampled and analyzed thirty-five sites. We sampled most key watersheds at a minimum in the most downstream reach of the principal stream course. Several key watersheds have been sampled at multiple sites more than one year to detect trends. The location of macroinvertebrate sampling sites for 1996 is illustrated in *Exhibit D*.

Findings:

**There is a backlog of analysis of macroinvertebrate samples on the Forest. Most samples show that streams contain healthy assemblages of macroinvertebrate taxa. Other streams where cold water taxa would be expected contain many cool water taxa showing that temperature regimes may have been altered by human disturbances and/or natural causes.**

Future Macroinvertebrate Sampling:

It is recommended that aquatic insect sampling be suspended for a few years except for local special projects. When all the analysis data have been returned to the Forest by contractors, some overall assessment of this information should be accomplished. Anomalous findings can then be investigated and protocols deemed valuable continued.

## 6. Temperature Monitoring

Description:

The Siskiyou National Forest has participated for the past three years in a Rogue River basin water temperature monitoring project. This cooperative study includes:

- Rogue River National Forest, Medford Bureau of Land Management, Oregon Department of Fish and Wildlife, Boise Cascade Corporation, Oregon Water Trust, Medford Water Commission, Rogue Valley Council of Governments and numerous Watershed Councils in the basin.

The sites where temperature recording instruments were placed for the 1995 Rogue River Basin report are shown in *Exhibit E*. Most of these sites were used again in 1996. Elevated water temperatures are a principal limiting factor for salmonids in the Rogue River basin and the South Coast basin. The Oregon Department of Environmental Quality has made extensive use of the temperature information collected in the Rogue River basin the past few years. Many streams are water quality limited because of elevated summer water temperatures. The Siskiyou National Forest has core temperature monitoring sites that have been in place for ten years or more. The temperature sites shown in *Exhibit F* represent the 1996 temperature monitoring effort on the Forest. These individual monitoring sites can be divided into four categories:

- (1)Core sites repeated each year to note trends, (2) project monitoring sites, (3) watershed analysis sites, and (4)special study sites.

Findings:

**Stream segments on the Siskiyou National Forest are generally cooler than downstream segments, primarily due to colder groundwater at higher elevations and better streamside shading. Nevertheless the Forest has some streams which exceed the State standard of sixty four degrees Fahrenheit, for several days during the summer months. This phenomenon is not confined to stream segments with a history of mining and other land management activities. Some streams which outflow from Wilderness areas exceed sixty four degrees during the summer e.g. North Fork Smith River, Chetco River and some Chetco tributaries. It is expected that streams on the Forest will continue to have somewhat cooler summer water temperatures as riparian forests grow and restoration activities begin to improve sediment budgets, and change response time to rainstorms and other watershed processes.**

#### Future Temperature Monitoring:

It is recommended that an extensive water temperature monitoring program continue on the Forest. Temperature monitoring with highly accurate electronic recording instruments is relatively inexpensive and water temperatures are an easily-measurable attribute. Several valuable partnerships would result from this monitoring. For the past several years, a temperature recording instrument has been in surveyed streams using Level II methodology.

### 7. Smolt Trapping

#### Description:

The Siskiyou National Forest and two Oregon Department of Fish and Wildlife Districts cooperated to operate three rotary drum smolt traps during 1996. The Siskiyou National Forest purchased two rotary traps now located on the East and West Forks Illinois River. The Oregon Department of Fish and Wildlife, Medford District operated these two traps. The third smolt trap was operated in Lobster Creek by the Gold Beach Ranger District and Oregon Department of Fish and Wildlife, Gold Beach District. The Campbell Trust Corp. assisted in the purchase of this rotary trap in a cooperative project. All of these operations represent challenge cost share projects where partners assisted the Forest either with funding or labor. Traps were monitored daily, juvenile fish measured and some mark/re-capture was accomplished to calibrate efficiency of the trap.

#### Findings:

**Using smolt traps to count numbers of fish emigrating from streams to the ocean provides valuable long-term production measure of streams. This information, along with fish habitat data (Level II stream surveys) and spawning surveys, measures the capability of a watershed to produce anadromous salmonids. Scientists catalogued the timing of smolt out-migration for salmon, steelhead and cutthroat for each of the watersheds. Lobster Creek was found to be a very large producer of fall chinook salmon smolts, steelhead smolts and to a lesser extent coho salmon and searun cutthroat. This watershed was not designated as a key watershed under the Northwest Forest Plan, but is a very productive watershed in the Lower Rogue River sub-basin. This is due to Lobster Creek's position, close proximity to the Pacific Ocean, and diverse aquatic habitat. Extreme variation in spring streamflows during the spring of 1996 in the East and West Fork Illinois Rivers made it difficult to operate the smolt traps consistently. This year's data was not complete because of flood damage, but scientists collected valuable information on smolt out-migration timing.**

#### Future Smolt Trapping:

The two traps in the Illinois River may be discontinued this next year because of maintenance problems during high spring runoff periods. The Lobster Creek trap will continue with cooperation between the Gold Beach Ranger District and the Gold Beach District, Oregon Department of Fish and Wildlife. The Illinois traps will be relocated for more effective operation.

### 8. Structure Durability Monitoring

## Description:

During the 1980's the Siskiyou National Forest concentrated fisheries improvements work on instream habitat improvement work. Scientists surveyed several stream segments on the Gold Beach Ranger District to determine if these instream features were functioning as originally intended. Given the dynamics of stream systems, the scientists noted instream structures that moved but still functioned with some effectiveness. The location of these structure surveys is shown in *Exhibit H*. The watersheds where stream segments were surveyed to assess past instream structure work were Foster Creek, Quosatana Creek, South Fork Lobster Creek, Shasta Costa Creek and Silver Creek (Lower Rogue) .

## Findings:

**Foster Creek and South Fork Lobster Creek appear to have the highest percentage of instream structures still in place and functioning. Silver Creek, Quosatana Creek and Foster Creek appear to have more instances of structure failure, movement and less of these instream features still functioning as intended. Examples where inappropriate structure design caused some negative results are apparent; some structures have been removed from the stream system and other structures have remained in their original positions. Where pre-project surveys were conducted, we will complete Level II or III surveys to note changes in fish habitat. Monitoring will assess if maintenance work is needed, additional instream work appropriate or other methods are more appropriate to improve stream function and fish habitat.**

Watershed	Number of Sites	Number of Structures	Percent of Structures in Same Location	Percent of Structures that Moved Off Site	Percent of Structures Off Site Functioning
S.Fk. Lobster	50	148	88	12	83
Quosatana	27	46	76	24	91
Shasta Costa	22	45	78	22	20
Foster	34	88	93	7	50
Silver	6	6	83	17	100

## Future Structure Durability Monitoring

It is recommended that more structure durability monitoring be accomplished where extensive instream and riparian habitat improvement has taken place in the past. This is particularly true in South Coast watersheds where considerable instream work was done in the 1980's. Many of these streams have large sediment budgets, extremely high peak flows during rain events and erosive stream banks. On

the east side of the Forest, streams tend to be more durable and contain more bedrock in the channel, although watersheds with decomposed granite geology have erosive characteristics and high sediment budgets.

Some past methods for instream projects are outdated. A complete survey of all streams with project work is not required in the near future. A sampling of several stream sections, in watersheds of varying geology and flow regimes, will quantify the success of past efforts. Survey methods are rapid and cost effective.

## 8. Summary of Accomplishments

Here is a summary of Forest outputs and activity for 1991 through 1996:

TABLE 4

Output	Units	Forest Plan	1991	1992	1993	1994	1995	1996
RECREATION Trail Construction	Miles	2.3	0.3	2.0	7.9	1.8	1.0	18.9*
WILDLIFE & FISH Wildlife Structures	#	328	10	271	436	477	776	710
Wildlife Improvements								
Fish Structures	Acres	1614	0	200	1327	537	208	904
Fish Habitat	#	480	271	218	328	42	7**	40**
	Acres	60	12	20	252	600	7**	40**
THREATENED/ENDAN GERED/SENSITIVE SPECIES								
Structures	#	16	2	13	42	60	54	23
Nonstructures	Acres	1160	2	180	11	60	20	47
TIMBER								
Potential Sale Quantity	mmbf	24	1.9	1.7	5.0	9.9	16.6	28.4
Sawtimber (green)	mmbf	24	1.5	1.1	3.4	6.6	11.0	18.9
Salvage (dead)	mmbf		0.45	0.6	0.6	1.6	3.3	9.5
Reforestation	acres	6222	6080	3664	2049	822	866	963
Timber Stand Improve.	acres	5357	14800	13367	10605	5468	5252	3363
SOIL & WATER Watershed Improvements								
	acres	479	178	184	326	224	231	340

MINERALS Proposals, Leases, & Applications	Cases	335	541	937	886	771	239	121
TRANSPORTATION FACILITIES Road Construction/Reconstructi on	Miles	157	122	1.2	0.8	2.8	29.7	Con 7.1 ReC 128
FIRE MANAGEMENT Natural Fuels Treatment Activity Fuels Treatment	acres	400	0	0	0	0	300	0
	acres	3539	2348	1740	1055	957	430	604

\* - Powers to Glendale Bikeroute

\*\* - Units of measure changed from # of structures to miles of stream improved.

## 9. Summary of Monitoring Findings and Recommendations

The monitoring results for this year do not indicate any major need to modify the Siskiyou National Forest Plan, as amended by the Northwest Forest Plan.

The watershed analyses and Late-Successional Reserve Assessment for Southwestern Oregon address the monitoring items listed in Appendix E of the ROD for the Northwest Forest Plan. These studies establish baseline data for effectiveness and validation monitoring. If interested in this data, please request further information from us.

Monitoring Item	Continue to Monitor	Change Practice	Evaluate further	Propose Adjustment
All Elements S&Gs Used	X			
Forest Outputs & Budget	X			
AN121(a) Recreation (Undeveloped)	X			

AN121(b) Wild & Scenic Rivers	X		X	
AN121 Visual	X			
AW121 Wilderness	X			
CF121 Fish Habitat	X			
CT121(a) ENDANGERED, THREATENED, SENSITIVE, AND UNIQUE SPECIES Peregrine Falcon Other species	X X			
CT121(b) Bald Eagle	X			
CT121(c) Spotted Owl	X			
CT121(d) Sensitive Plants	X			
CW121(c) Osprey	X			
CW121(d) Woodpeckers	X			
CW121(3) Deer & Elk	X			
ET121(a) Port-Orford Cedar	X			X
ET121(b) Destructive Insects & Diseases	X			
ET121(c) Land Suitability	X			

ET121(d) Acres & Timber Volume Harvested	X			
ET121(e) Harvest Unit Size	X			
ET121(f) Reforestation & Mgt. Practices	X			
ET121(g) Biological Diversity	X			
ET121(h) Social & Economic Setting	X			
FA121 Suspended Particulates	X			
FW121(a) Water Resources	X			
FW121(b) Soil Productivity	X			
FW121(c) Water Resources	X			
FW121(d) Water Quality	X			
FW121(e) Acres Burned	X			

Appendix E - Northwest Forest Plan Implementation (Page E-4 of ROD)

Monitoring Item	Continue to Monitor	Change Practice	Evaluate further	Propose Adjustment
Late-Successional Reserves	X			X

Monitoring Item	Continue to Monitor	Change Practice	Evaluate further	Propose Adjustment
Riparian Reserves	X			
Matrix	X			
Adaptive Mgt. Areas	X			
Key Watersheds	X			
Watershed Analysis	X			
Participation	X			

Appendix E - Northwest Forest Plan Effectiveness (Page E-6 of ROD)

Monitoring Item	Continue to Monitor	Change Practice	Evaluate further	Propose Adjustment
Aquatic Ecosystems	X			
Biological Diversity	X			
Use Levels	X			
Rural Economies	X			
American Indians	X			

Appendix E - Northwest Forest Plan Validation (Page E-10 of ROD)

Monitoring Item	Continue to Monitor	Change Practice	Evaluate further	Propose Adjustment
Northern Spotted Owls	X			
Marbled Murrelets	X			
Populations of fish species and stocks listed as threatened, endangered, or sensitive	X			
Rare Species	X			

Monitoring Item	Continue to Monitor	Change Practice	Evaluate further	Propose Adjustment
Management & Health of LSRs	X			X

#### Appendix E - Northwest Forest Plan Effectiveness (Page E-10 of ROD)

Monitoring Item	Continue to Monitor	Change Practice	Evaluate further	Propose Adjustment
Environmental Stressors	X			
Rare and Declining Species	X			

Minor amendments, as needed, will continue to keep the plan current. One need for a minor amendment is the salvage of POC within openings less than 10 acres in size in LSR. Some salvage would facilitate the planting of resistant POC stock within the LSR and help fund needed roadside sanitation which limits the spread of *Phytophthora lateralis*. This would benefit the LSRs in places where little matrix lands occur.

The watershed analyses and Late-Successional Reserve Assessment provide baseline conditions for the effectiveness, validation, and special monitoring needs.

We need to clarify the goals, and Standards and Guidelines for Backcountry Recreation. There is a need to clarify meadow wildlife maintenance and enhancement management goal #5 on page IV-97 of the Forest Plan and the Standard and Guidelines MA6-2 and MA6-4. It is the intent of the Forest Plan to provide for the goals of wildlife habitat maintenance and enhance in Backcountry Recreation provided the activities are short duration and unobtrusive. It is also the intent that a visual quality objective of Preservation be emphasized for the area as a whole. However, projects achieving Retention visual quality are allowed if they do not affect the whole area, are of short duration, and unobtrusive. It is the intent that timber harvest is not programmed. However removal of timber can occur if needed to achieve the goals of this management area and which conform the Standards and Guidelines. Harvest for timber reasons should only occur to eliminate hazards, or possibly in capturing economic losses from catastrophic events.

## 10. Forest Plan Monitoring

Each element of the existing Siskiyou National Forest Monitoring Plan is listed below.

RESOURCE ELEMENT: ALL ELEMENTS

MONITORING QUESTIONS:

1. Ensure that applicable S&G's are incorporated into project-level planning and implementation.
2. Ensure that unavoidable deviations from S&G's, along with appropriate measures, are identified in project-level NEPA planning, and that these measures are carried through to implementation.

Planners and implementing personnel have appropriately used the Standards and Guides of the Forest Plan, as amended by the Northwest Forest Plan. The Province, Districts and Forest have reviewed several projects and programs. All activities have complied with Forest Standard and Guidelines except where variations are planned in the NEPA documents. The one exception was a firewood sale. The sale allowed firewood to be cut in a Riparian Reserve by an intermittent stream. In this case, no sediment or temperature or habitat problems resulted from the activity. A slight reduction in hardwood habitat occurred. The objectives for the 15 Management Areas, late-successional reserves, riparian reserves, matrix, adaptive management areas, and key watersheds were successfully implemented across the Forest.

RESOURCE ELEMENT: ALL ELEMENTS (Forest Programs and Budgets)

MONITORING QUESTIONS:

1. Is the management of the Forest achieving planned outputs?
2. Are funding levels for capital investments adequate to achieve projected improvements?
3. Are the major variable costs used in the analysis consistent with actual implementation costs?

Recreation has been funded below the threshold listed in the Forest Plan. Implementation of the recreation program has been delayed due to this lack of funding.

The variable costs used in the analysis are not consistent with the actual implementation costs. However, the trends tend to balance each other out.

RESOURCE ELEMENT: AN121(a) Recreation (Undeveloped)

MONITORING QUESTIONS:

Are the setting indicators of access, non-recreation management impacts, social encounters, facilities,

and visitor management maintained at levels sufficient to provide Primitive and Semi-primitive (Motorized and Non-motorized) recreation opportunities?

Is resource degradation occurring as the result of sanctioned Off-road vehicle (ORV) use?

There is a less than five percent variance from LRMP objectives for Primitive and Semi-primitive Non-motorized recreation opportunities in Backcountry Recreation.

No visible degradation to soil, water, or vegetation resources on trails or in other areas open for ORV use has been detected. The amount of ORV use is decreasing as roads are closed by natural and administrative means. Barrier placement and road maintenance on and along roads and ORV trails in the vicinity of Chetco Pass have reduced ORV impacts to insignificant levels. The annual review of the ORV plan has revealed many more roads which have been blocked for disease control, lack of maintenance, or other resource concerns have restrictions that prohibit the use of ORVs.

RESOURCE ELEMENT: AN121(b) Wild and Scenic Rivers

#### MONITORING QUESTIONS:

1. Is the protection and management of the Forest's Wild and Scenic Rivers consistent with the Wild and Scenic Rivers Act and the management objectives identified in the applicable River Management Plan?

A mandatory, but unlimited float permit system was implemented for the Illinois Wild and Scenic river Wild Section in the spring of 1995. Monitoring of permits issued adjusted for estimated compliance rates indicated that the Illinois River Management plan threshold for triggering a limited mandatory permit system was reached at the end of the 1996 float season. The Forest is moving ahead with plans to implement limited mandatory float permits on Fridays and Saturdays starting in the spring of 1998. On those two days of the week, a limit of two party launches per day will be initiated through a planned weekly lottery.

2. Are the facilities and improvements scheduled in the LRMP being accomplished?

Yes.

3. Do management activities within the Rogue River corridor meet inventoried or allocated Visual Quality Objectives?

Answered as part of #4.

4. Does Partial Retention in middleground distance zones satisfy the user demand for scenic quality within the Rogue River corridor?

No permanent visible degradation of the setting on National Forest lands within or adjacent to the Wild

River corridors has been detected. Some watershed monitoring equipment, installed after the Silver Fire, has been removed from the Illinois River.

The scheduled facilities and improvements are being accomplished, although at a reduced rate.

No activity in a watershed adjacent to the Recreation/Scenic River corridors has resulted in degrading visual quality objectives allocated to the area. Significant efforts to enforce the conservation easement requirements on private lands in the Rogue Wild River Corridor are ongoing. Some trees have been cut and vegetation altered.

RESOURCE ELEMENT: AV121 Visual

MONITORING QUESTIONS:

1. Are planned or programmed management activities implemented within the constraints identified for the Retention and Partial Retention VQO's?
2. Are the allocated VQO's being achieved?

There is no increase over recommended levels of activity in Retention, Partial Retention, and Modification VQO's areas. There is a decrease in timber sale activity due to implementation of the Northwest Forest Plan. The visual quality objectives are being achieved.

RESOURCE ELEMENT: AW121 Wilderness

MONITORING QUESTIONS:

1. Are the physical/biological, social, and managerial settings of each Wilderness Recreation Spectrum (WRS) class maintained within the levels outlined in the S&G's and R-6 Supplement No. 81 to Forest Service Manual (FSM) 2320, as included in the LRMP?

Less than five percent of Wilderness acres are at lower than Semi-primitive condition. Annual use is much less than eighty percent of estimated capacity for WRS classes. Some illegal access has occurred within the Kalmiopsis Wilderness. Enforcement efforts are ongoing.

RESOURCE ELEMENT: CF121 Fish Habitat

MONITORING QUESTIONS:

1. What are the cumulative effects on fish habitat capability?
2. Is fish habitat and smolt production being maintained or improved as predicted by the LRMP Final Environmental Impact Statement (FEIS)?

3. Is the quantity and quality of rearing pools being maintained?
4. Is the fish population changing in terms of numbers, species composition, or age structure?
5. Is large woody material being retained in the stream channel for fish habitat?
6. Is stream temperature being maintained or decreased as predicted by the LRMP FEIS?
7. Is sediment affecting stream habitat?
8. What are the effects of fish habitat improvement structures on stream channel configuration, large woody material, and fish populations?
9. What is the lifespan of stream habitat improvement structures?

No adverse cumulative effects on fish habitat due to Forest activities implemented after 1989 have been detected. Stream surveys and watershed analyses provide a baseline for comparison with future monitoring results. Fish habitat on the Districts is being maintained. An amendment to the

Forest Plan, considered part of the Northwest Forest Plan, has changed the management of riparian areas for fish habitat. More detailed discussions are found in the Record of Decision and FEMAT report for the Northwest Forest Plan, the Late-Successional Reserve Assessment, and the various watershed analyses.

The existing quantity and quality of rearing pools are maintained. (This statement is a qualitative professional opinion based upon observation. The stream surveys and watershed analyses provide a basis for future quantitative answers to this question.)

No projects have removed any woody material naturally found in the stream channel. In addition, we have installed some large woody material structures in many streams to improve fish habitat. Some large storms have transported this material downstream and in many cases off Forest.

Stream temperature is not increasing on Forest lands due to harvest activities. There has been little harvest in any riparian areas and regrowth in areas previously harvested is ongoing. Off-forest stream temperatures may be decreasing or increasing in the various watersheds depending on private land activities (timber harvest, water withdrawals, and development). Again, the watershed analyses contain specific references to particular streams.

Sediment is always affecting stream habitat and is part of the natural and accelerated watershed processes. Recovery in areas previously harvested is ongoing. Off-forest stream sedimentation is decreasing or increasing in the various watersheds depending on private land activities (timber harvest and development).

The amount of sedimentation has increased this year due to high rainfall, increased streamflow, increased natural rates of erosion, and some road failures. The effects of these events will be

monitored during this year.

Fish habitat improvement structures have increased the number of pools and their depth. The structures have been effective in increasing the areas which have spawning gravels. Stream snorkeling activities indicate larger numbers of fry and smolt associated with the structures and associated habitat.

The lifespan of the stream habitat improvement structures varies. Stream surveys provide additional data.

RESOURCE ELEMENT: CT121(a) Endangered, Threatened, Sensitive, and Unique Species

MONITORING QUESTIONS:

A provincial-scale biological look at spotted owls, marbled murrelets, eagles, and peregrine falcons was accomplished in 1996. Here are the results for the federal ownership outside of the Siskiyou National Forest.

SECTION 7 WATERSHEDS = All Basins 96 Ranger Districts/Resource Areas included = SIS, ROR, Med/Coos Bay BLM		30 Jul	Total	Total Protected <sup>1</sup> (+ % of Total)	Total Unprotected (+ % of Total)
1. Total Acreage within Sub-Basin, all Ownerships			5,109,508		
-Private, State and other Government			2,529,299		
-Federal Acres			2,562,693		
2. Land Allocations - Federal (hierarchal, no acres double-counted)					
-Congressionally Reserved Areas			352,740		
-Late Successional Reserves (not incl 100 ac owl LSRs)			878,407		
-Adaptive Management Areas			178,193		
-Administratively Withdrawn Areas			187,383		
-Riparian Reserves (Matrix and AMA Riparian acres only)			240,893		
-Matrix			702,144		
3. SPOTTED OWL HABITAT - Federal Land				* = Siskiyou NF data not included	

-Total Spotted Owl Habitat - Capable Acres (not incl disp/suit)	428,477	200,512 (47%)	227,965 (53%)
-Total Spotted Owl Habitat - Dispersal Acres (not incl suit)	480,622	283,126 (59%)	197,496 (41%)
-Total Spotted Owl Habitat - Suitable Acres (NRF)	1,060,728	735,949 (69%)	324,779 (31%)
-Total Acres in Critical Habitat within Sub-basin	773,172	583,248 (75%)	189,924 (25%)
-Total Acres in Critical Habitat which is suitable (NRF)	390,985	304,070 (78%)	86,915 (22%)
4. SPOTTED OWL SITES - Total # Activity Centers (Fed Land)	830	505 (61%)	325 (39%)
-# Spotted Owl Sites (>40% NRF)	* 184	* 143 (78%)	41 (22%)
-# Spotted Owl Sites (30-40% NRF)	* 102	* 45 (44 %)	57 (56%)
-# Spotted Owl Sites (<30% NRF)	* 353	* 114 (32%)	239 (68%)
5. MARBLED MURRELET (Fed Land)			
-Total Marbled Murrelet - Capable Acres (not incl suitable)	688,199	533,925 (76%)	154,274 (24%)
-Total Marbled Murrelet - Suitable Habitat	322,497	238,931 (74%)	83,566 (26%)
-Total Occupied Marbled Murrelet Sites	88	88 (100%)	0 (0%)
-Total Sites With MM Presence (not including occupied sites)	443	*	*
6. PEREGRINE FALCON - # Known Nest Sites (Fed Land)	12		
7. BALD EAGLE - # Known Nest Sites (Fed Land)	13		
8. Estimated miles habitat for KLAMATH MTS STEELHEAD (Fed Land)	1,174		
9. Estimated miles habitat for N CA/S OR COHO (Fed Land)	413		

## PEREGRINE FALCON

### 1. Are existing nest sites producing young as anticipated?

Reproduction is ongoing. Data does not reveal any unanticipated drops in reproduction.

Peregrines have four known nests on the Forest. During the last year, we surveyed two nests. One nest produced at four fledglings while the other nest failed. We tried, but did not locate a suspected

fifth nest.

2. Are surveys being completed to locate new or previously unknown nest and roost sites?

We conducted surveys for habitat on all Districts in association with any ground disturbing activities. Species surveys and habitat surveys were conducted.

3. Are potential sites being protected?

Yes.

#### OTHER SPECIES

1. Are habitat inventories and surveys being completed as scheduled?

We are completing habitat inventories and surveys. We conducted 600 survey visits for marbled murrelets. From these 600 visits, we detected murrelets on 30 occasions. Many of the survey visits, though none of the detections, were outside the known range of the murrelets.

RESOURCE ELEMENT: CT121(b) Bald Eagle

#### MONITORING QUESTIONS:

1. Are existing nest sites producing young as anticipated?

The single known nest on the Siskiyou National Forest successfully produced 2 nestlings during the last year.

2. Are potential sites being protected?

Yes

3. Are surveys being completed to locate new or previously unknown nest and roost sites?

Appropriate habitat surveys were conducted for biological evaluations.

RESOURCE ELEMENT: CT121(c) Spotted Owl

#### MONITORING QUESTIONS:

Determine pair occupancy and, where possible, reproductive status of spotted owls within HCA-1s.

1. Are HCAs occupied by the required pairs (20) of reproductively successful spotted owls in any given year?

No HCAs were surveyed in 1994-5 (Northwest Plan in effect).

2. What are the trends in pair occupancy, breeding status, and reproductive success of HCAs through time?

No HCAs were surveyed in 1996 (Northwest Plan in effect).

3. How correct are the assumptions and expected outcomes of implementing the S&G's detailed in the Habitat Conservation Strategy for spotted owls?

No HCAs were surveyed in 1996 (Northwest Plan in effect).

4. What are the general population trends of the spotted owl in the Forest Matrix?

In general, spotted owl surveys are not required for most project activities (Interagency Direction within the Range of the Spotted Owl). A few sites were surveyed to determine locations of activity centers. These surveys and trends follow the standards and guidelines established by the Northwest Forest Plan.

In addition, we compiled the following data concerning spotted owl activity centers in the Late Successional Reserves. The information is available upon request.

5. Are HCAs being managed as required by S&G's?

The Forest is in compliance with LRMP S&Gs for spotted owl management Late-Successional Reserves (established by an amendment to the Siskiyou National Forest Plan) replace the land allocation of HCA.

6. Is potential habitat being surveyed for spotted owls?

Refer to question #4 under this item.

RESOURCE ELEMENT: CT121(d) Sensitive Plants

MONITORING QUESTION:

Are sensitive plant populations being maintained?

Yes. Surveys were conducted for all ground disturbing activities on all five Ranger Districts. We compiled known sites for sensitive plants in Late-Successional Reserves.

RESOURCE ELEMENT: CW121(a) Pileated Woodpecker

MONITORING QUESTIONS:

1. Are the areas suitable habitat for pileated woodpeckers?

The pileated woodpecker network setup by the Forest Plan (1989) has been amended by the Northwest Forest Plan. The monitoring of this original network is no longer needed.

2. Is there evidence of pileated woodpeckers (diggings, cavities, birds)?

N/A

3. Are the number of areas identified in the plan being maintained?

Yes, the late-successional reserves are maintained.

4. Are the areas occupied and productive?

Yes, pileated woodpeckers occupy and reproduce in the late-successional reserves.

RESOURCE ELEMENT: CW121(b) Pine Marten

MONITORING QUESTIONS:

1. Are the areas suitable habitat for pine martens?

The pine marten network setup by the Forest Plan (1989) has been amended by the Northwest Forest Plan. The monitoring of this original network is no longer needed.

2. Is there evidence of pine marten (scat, tracks, animals)?

Yes.

3. Are the number of areas identified in the plan being maintained?

Yes, the late-successional reserves are being maintained.

RESOURCE ELEMENT: CW121(c) Osprey

MONITORING QUESTIONS:

1. Are existing nest sites occupied?
2. Are surveys being completed to locate new or previously unknown nest and roost sites?

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#### Chetco RD

Two active nests were located on the Chetco River. One is at the mouth of Emily Creek on state park land. The other nest is new, located at the mouth of Elk Creek on NF land. Productivity unknown.

#### Galice RD

One nest site is present, in the Waters Creek drainage. The 1996 status of this nest is unknown.

#### Gold Beach RD

There were 54 known current and historical territories on the Lower Rogue river in 1996. We monitored 53 territories closely enough to determine whether they were active or not during this breeding season. A territory represents a single pair of osprey, which may include several nests as they frequently construct alternate nests. Forty-two of 53 territories were active, and 11 were inactive this season (including 2 where the nest or nest tree had been blown down and 5 historical territories that have been inactive for at least two seasons. The last territory did not receive sufficient monitoring to determine activity. Twenty-eight of the 42 active territories were monitored closely enough to determine chick productivity (including 6 territories that failed); producing a total of 32 chicks, an average of 1.14 chicks per nest.

This data, however, includes nests for which chicks may have been missed due to survey techniques (i.e. data sheets stated "at least 1 chick") and may therefore be an underestimate. We had complete productivity data for 22 territories which produced 28 chicks, a average of 1.27 chicks per nest. 76% of the territories were successful in producing young. Broken down further, 2 territories produced 3 chicks, 8 produced 2 chicks each, and 6 nests produced single chicks. 6 nests failed.

Two new territories were discovered late in the season, but showed no evidence of producing young.

Additional information is available at Gold Beach Ranger District.

#### Illinois Valley RD (1)

Osprey were active along the Illinois River in 1996; one nest (1996 status unknown) exists on the Illinois River at the mouth of Briggs Creek.

#### Powers RD

Two nest sites are known, one in the Coquille canyon and the other in the vicinity of Cedar Swamp. Both nests were monitored and each fledged 1 young.

3. Are potential habitat sites being maintained, as specifically described in the S&G's?

Yes.

RESOURCE ELEMENT: CW121(d) Woodpeckers

MONITORING QUESTIONS:

1. Are snags and replacement trees being left in the right numbers, sizes, and distribution on lands available for timber removal?

2. Are snags and replacement trees being maintained as planned on all other lands?

Wildlife trees are being left in the appropriate numbers on sales. The green tree retention and snag standards and guidelines in the Northwest Forest Plan apply to new sales being prepared.

RESOURCE ELEMENT: CW121(e) Deer and Elk

MONITORING QUESTIONS:

1. Are ODFW trend count data showing a non-predicted change in habitat capability?

Monitoring for this element needs to continue for a longer period to detect trends in habitat capability.

2. Are the S&G's being followed as required to meet established habitat capability goals?

Wisdom Model used in appropriate sale areas (for elk).

RESOURCE ELEMENT: DN121 Range

MONITORING QUESTIONS:

1. Is Vegetation Condition and trend being maintained or improved? Have areas in unsatisfactory condition improved?

Yes. The vegetation condition is maintained or improving.

RESOURCE ELEMENT: ET121(a) Port-Orford-cedar

MONITORING QUESTIONS:

The questions relate to whether the spread of Port-Orford-cedar root disease is increasing or decreasing.

1. Is the rate of spread of the disease increasing or decreasing?

The rate of disease spread into uninfected stands has not increased. There is some new spread along roads within infected stands.

2. Have sale activities been monitored where management strategies have been prepared?

Yes, management strategies have been prepared and monitored for timber sale and other management activities.

3. Are the strategies effective?

Management strategies are effective in reducing the rate of spread into uninfected watersheds and uninfected stands adjacent to infection sites.

4. Is the disease spreading along road systems?

Yes, but at a reduced rate. In some instances, unrestricted road access is contributing to this spread.

A forestwide map showing locations of POC and the disease status as of 1995 is documented in the LSR assessment. This material is planned for updating.

RESOURCE ELEMENT: ET121(b) Destructive Insects and Diseases

MONITORING QUESTION:

Are there significant damage and growth reductions due to insects and disease?

There are no large scale significant damage or growth reductions due to insects and disease. There is localized mortality of pine and fir due to stocking densities/drought/age/water competition. Affected

trees are generally scattered concentrations, tend to be large trees, and occur in locations where moisture is limiting for growth and survival. Direct cause of mortality in pine appears to be bark beetles aggravated by moisture stress. The amount of mortality appears to be increasing on the eastside.

Documented maps of risk are contained in the LSR assessment.

RESOURCE ELEMENT: ET121(c) Land Suitability

MONITORING QUESTION:

Are there changes in the land base that could have implications for adjusting levels of activities or outputs? (Forest Plan has a threshold of 10,000 acres change in suitability classification the first 10 years.)

There are no changes beyond the threshold. The Northwest Forest Plan did substantially reduce the land base for programmed timber harvest. It also adjusted the level of timber harvest.

RESOURCE ELEMENT: ET121(d) Acres and Timber Volume Harvested

MONITORING QUESTION:

1. Are timber outputs comparable to those in the Forest Plan?

Yes, the timber outputs are comparable to that projected under the Forest Plan as amended by the Northwest Forest Plan.

RESOURCE ELEMENT: ET121(e) Harvest Unit Size

MONITORING QUESTION:

1. Is the Forest exceeding the 60-acre size limit?

No even-aged regeneration harvest units larger than 60 acres were sold.

RESOURCE ELEMENT: ET121(f) Reforestation and Intensified Forest Management Practices

MONITORING THRESHOLDS

These thresholds relate to regeneration of harvest areas within 5 years, plantation tree stocking, growth, and yields.

1. Threshold: Ten percent or more of the acres having reforestation lag time greater than five years:

Less than 10 percent of the acres have a reforestation lag time greater than five years.

2. Threshold: Ten percent or more of the acres being certified as stocked with less than the recommended stocking level:

With the addition of natural seedlings, less than ten percent of the certified acres are below the recommended stocking level.

3. Threshold: Thirty percent or more of the acres prescribed for precommercial thinning (PCT) in site-specific silvicultural treatment prescriptions do not receive treatment in the year planned; or ten percent or more do not receive treatment when prescribed needs are accumulated over a 3-year period (Forest Plan projected an yearly average of 2397 acres of precommercial thinning during the first decade):

In 1996, greater than thirty percent of the silvicultural precommercial prescriptions did not receive treatment. Over the three year period, greater than ten percent of the acres did not receive treatment. Most of these acres are plantations located within the Late-Successional Reserves. The Threshold was exceeded, but the acres are not located within lands programmed for timber harvest. However, these acres will not reach their desired condition as soon as if they were treated.

4. Threshold: Thirty percent or more of the acres prescribed for release in site-specific silvicultural treatment prescriptions do not receive treatment in the year planned; or ten percent or more do not receive treatment when prescribed needs are accumulated over a 3-year period (Forest Plan projected an yearly average of 4469 acres of release during the first decade):

We did exceed these thresholds in 1996. Greater than thirty percent of the silvicultural precommercial prescriptions did not receive treatment. Over the three year period, greater than ten percent of the acres did not receive treatment. Most of these acres are plantations located within the Late-Successional Reserves. The Threshold was exceeded, but the acres are not located within lands programmed for timber harvest. However, these acres will not reach their desired condition as soon as if they were treated.

5. Threshold: Fifty percent or more of the acres prescribed for fertilization in site-specific silvicultural treatment prescriptions do not receive treatment in the year planned; or 10 percent or more do not receive treatment when prescribed needs are accumulated over a 5-year period (The FORPLAN Model outputs were calculated based on fertilizing 5,770 acres during the first decade of the Forest Plan.):

We did not exceed these thresholds.

## RESOURCE ELEMENT: ET121(g) Biological Diversity

### MONITORING QUESTIONS

1. What is the present distribution and proportion of seral stages by plant association (FEIS, Chapter III, Table III-37)?
  - a. How do they compare to past distributions?
  - b. What distribution and proportion is expected in the future?
  - c. What are the trends?
  - d. Does the distribution, proportion, and absolute amount provide viable habitat for management indicator species, rare species, and biological diversity?
2. Has habitat capability changed?
3. What is the present status of sensitive species?
  - a. What are the population numbers?
  - b. What is the distribution of known sites?
  - c. Is there a trend in population density?
4. What are the trends in overall species diversity on the Forest?
  - a. Are there trends in species richness?
  - b. Are there relationships to management practices and direction?
  - c. Are there relationships with natural processes or events?
5. Can species/habitat relationships be established from present data?

The S.W. Oregon Ecological Assessment Team has published some data needed for this monitoring item (A First Approximation of Ecosystem Health, PNW Region, June 1993). The Late-Successional Reserve Assessment also addresses these questions.

## RESOURCE ELEMENT: ET121(h) Social and Economic Setting

### MONITORING QUESTIONS:

1. What is the average yearly unemployment rate for Josephine, Jackson, Coos, and Curry Counties?
2. What is the demand for timber?
3. What is the demand for recreation?

4. What are the social and economic trends in local communities?

The average yearly unemployment rate and per capita income for the four county area from 1991 to 1996 is available from the Oregon State Employment Office - Economist in Medford, Oregon 541-776-6060. The thresholds listed in the Forest plan were not exceeded.

The demand for timber is high, though the log prices have fluctuated due to market conditions. There were not enough sales sold from the Siskiyou National Forest to accurately determine the bid price ratio.

There is less than 80% use of the carrying capacity in primitive and developed recreation campgrounds. In wilderness areas, last year's use was less than 20% of the carrying capacity. However, limits of acceptable change are being examined on two sites popular with local residents.

Shifts in local communities' beliefs and values continue as stated in the Siskiyou National Forest FEIS and the President's Forest Plan. Immigration into the area continues.

Supplement forest receipts with federal funds were implemented to maintain the level of payments to counties, commensurate with the amount of collections. The threshold of a 25% annual reduction in the payments to counties has occurred. The Northwest Forest Plan is the forest plan amendment to address this issue.

RESOURCE ELEMENT: FA121 Suspended Particulates

MONITORING QUESTION:

Does Total Suspended Particulate (TSP) produced from planned ignitions exceed 7300 tons Forest-wide annually?

Analysis of the information in the Smoke Management System (SMS) for Fiscal Year 96 indicates that planned ignitions produced much less than 7300 tons.

RESOURCE ELEMENT: FW121(a) Water Resources

MONITORING QUESTIONS:

1. Are water resource-related BMP's being implemented?
2. Are water resource-related S&G's and BMP's effective for:
  - a. Maintaining or enhancing water quality and the beneficial uses of water?
  - b. Allowing compliance with State water quality requirements, such as Oregon's Anti-degradation policy for high quality waters and National Wild and Scenic Rivers?

The water resource-related BMPs are being implemented. The Standards and Guides, and BMPs are effective for maintaining and enhancing the water quality and beneficial uses of water. The Forest has been in compliance with State water quality requirements. Field reviews of road rehabilitation decommission projects observed drainage, infiltration, erosion and revegetation following four and more years after decommissioning. Pullback and waterbars produced stable erosion-proof surfaces capable of supporting plant growth. The ripped roads remained stable following reintroduction of water with little or no surface erosion, reestablished drainage patterns, and some success in revegetation.

#### RESOURCE ELEMENT: FW121(b) Soil Productivity

##### MONITORING QUESTIONS:

1. Are soil and site organic matter and nutrient levels being maintained following timber harvest and site preparation?

Field review shows that new units meet S&G 7-8 for large woody material (LWM), except where preharvest levels were low. However in several units wildlife reserve trees equal to or greater than 5 per acre provide significant contribution to the large woody material supply.

LWM is being retained in the spirit of S&G 7-8 and future monitoring of timber sales with C6.404 will show if current prescriptions are being met.

Field review shows that mineral soil exposure and subsequent erosion is well below the respective 15 to 40 percent sliding scale limits for S&G 7-4 for all units reviewed.

Field review shows that detrimental soil conditions; compaction, puddling, displacement and/or severely burned criteria of S&G 7-2 were met.

2. Are soil physical properties being maintained following timber harvest and site preparation?

Bulk density, porosity, aeration and infiltration of water are maintained following yarding and slash burning. We assume that where no disturbance of the forest floor and soil occurs the soil bulk density, porosity and water infiltration rates will be unaffected.

3. Is growth of trees being maintained at satisfactory rates?

Yes. Current surveys contain validation of satisfactory growth rates.

#### RESOURCE ELEMENT: FW121(c) Water Resources

##### MONITORING QUESTIONS:

1. Are the timber harvest basin constraints for scheduling timber harvest in the Planning Basins and Watershed Analysis Areas (WAA's):
  - a. Being applied according to the S&G's? (WAA's only)
  - b. Adequate for minimizing the potential for adverse cumulative effects (on/off Forest) on: (1) Stream channels and (2) water quality and the beneficial uses of the water? (Some examples of adverse cumulative effects are: channel aggradation, loss of riparian vegetation and stream bank stability, and reduction in fish habitat.)
2. Are the effects within the range predicted in the FEIS?

The basin harvest constraints are being applied according to the Standards and Guidelines. Monitoring has not revealed any detrimental changes due to adverse cumulative effects on and off the Forest due to Forest activities implemented under the Forest Plan.

The range of effects are within the range predicted in the FEIS, as amended by the Northwest Forest Plan.

RESOURCE ELEMENT: FW121(d) Water Quality

MONITORING QUESTION: What are the landslide statistics on managed versus unmanaged lands?

The individual watershed analyses address this question where it is a valid issue. There is an ongoing monitoring effort for the 1996-1997 storm effects. Hopefully, results will be available in next year's report.

RESOURCE ELEMENT: FW121(e) Acres Burned

MONITORING QUESTION:

Do acres burned by fire size class per decade exceed the frequency and size distribution as presented in the Fire Management Action Plan?

Fires have covered 10,135 acres of the Forest since 1990. This exceeds the threshold in the Forest Plan. However, much of the fire occurred in the Mendenhall Fire complex. This complex is primarily nonforested or nonproductive (for timber) serpentine soils on the Illinois Valley Ranger District.

RESOURCE ELEMENT: GM121 Minerals

MONITORING QUESTION:

1. Are the Standards and Guidelines for mineral operations reasonable and effective?

## 2. Are the rehabilitation Standards and Guidelines reasonable and effective?

The Standards and Guidelines provide reasonable and effective management of impacts from mining. The impacts of mining, on a watershed scale, is far below the the natural sedimentation and erosion rates. Generally, mining entails short-duration small recreational suction dredge operations having an average production rate approximating one-half cubic yard per hour of dredge running time. Observed impacts have been miniscule when compared to natural processes. No declines in surface resources and environmental quality for fish habitat, wilderness, wildlife, and soil have been observed. Rehabilitation as prescribed in the Standards and Guidelines is directed in approved Plans of Operations.

## 11. Forest Plan Amendments

The following amendments have been issued for the Siskiyou Forest Plan since implementation began 1989:

### Forest Plan Amendments

Amendment	Date	Nature of Amendment
1	Aug., 1991	Changed the wording for reforestation requirements
2	December 1991	Establishment of Long Term Site Productivity Research Site on Chetco Ranger District
3	April 1992	Adjustment of Project Implementation Schedules
4	July 1992	Land Exchange on Gold Beach and Powers Ranger District
5	August 1992	Emerald Canyon Land Adjustment on Gold Beach Ranger District
6	July 1993	Chetco Wild & Scenic River Management Plan
6a	July 1993	Modified treatment for POC disease control on Chetco Ranger District.
7	September 1994	Elk Wild and Scenic River Management Plan

8	April 1996	Amended Direction for Mining in Riparian Reserves. Corrected an incongruity between Mining Direction in the Forest Plan as amended by the Northwest Forest Plan and the mining regulations of 36 CFR 228.
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