

United States
Department
of Agriculture

Forest Service
Pacific
Northwest
Region

1995



WINCHUCK RIVER
WATERSHED ANALYSIS

ITERATION 1.0

I have read this analysis and it meets the Standards and Guidelines for watershed analysis required by an amendment to the Forest Plan (Record of Decision dated April 1994).

SIGNED Michael Fram DATE 6/2/95
District Ranger
Chetco Ranger District
Siskiyou National Forest

WINCUECK RIVER WATERSHED ANALYSIS

VERSION 1.0

CHETCO RANGER DISTRICT

SISKIYOU NATIONAL FOREST

MAY 31, 1995

I. INTRODUCTION

A. OBJECTIVES

Watershed Analysis Version 1.0 Objectives

The Winchuck River watershed is designated as a Key Watershed in the Siskiyou Forest Plan as amended by the Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl. The Forest Plan requires a watershed analysis to address important conditions and processes prior to most activities in Key Watersheds on Federal lands.

The objective of Version 1.0 of the watershed analysis is to identify if high priority watershed restoration/jobs in the woods projects and projects that have a high probability for being funded for fiscal years 95 and 96 are appropriate to implement in the watershed.

The team's review and analysis of the Preliminary Watershed Assessment (3/94) did not identify additional key values. We concluded that the Preliminary Assessment contained evidence to support many of the road related sediment projects. It was determined that additional analysis would be needed to identify if it would be appropriate to implement potential fiscal year 95 and 96 projects in the watershed.

The Preliminary Watershed Assessment contains information on the existing conditions, trends, and desired future condition of the watershed. This analysis adds additional information. The analysis is summarized in the Summary of Evidence for each Key Question. More detailed information is contained in the process files. Watershed Analysis is a dynamic process and sections will be updated as information is available.

Resource Management Objectives

To implement the Siskiyou National Forest Plan. Specifically:

- * Protect water quality and fish habitat.
- * Provide wildlife habitat
- * Manage for the sustainable production of forest products.
- * Maintain soil quality and long-term forest productivity

Principle Value

Anadromous fish spawning and rearing habitat for winter steelhead, chinook, coho, and anadromous cutthroat trout.

Watershed Characterization

- * The watershed is about 45,000 acres in size.

* The Winchuck River Flows into the Pacific near the Oregon/California state line.

* About 71% of the watershed is National Forest Land. The remaining 29% is privately owned.

* It is a Key Watershed with all of the Forest Service Land allocated as Late-Successional Reserve.

* The lower 8 miles of the watershed has homes along the mainstem of the Winchuck River.

* The South Fork of the Winchuck is mostly private industrial forest.

II. FINDINGS

Key Question: What is the water quality in the basin and how does it affect fish production?

Finding:

Water quality in the Winchuck basin is high and promotes fish growth.

Summary of Evidence:

- The Preliminary Watershed Assessment shows that suspended sediment and water temperature are not limiting fish production in the basin.
- Water quality analysis by Siskiyou National Forest indicate that neither alkalinity nor sulfate concentrations were limiting fish at five sites in the basin in autumn 1989.
- Standard domestic water quality tests by homeowners throughout the basin indicate water quality is high from a human use perspective.
- Biomass of aquatic macroinvertebrates sampled throughout the basin in 1989 was generally high, indicating widespread availability of high quality food for fish.
- No sources of pollutants or detrimental conditions affecting water chemistry or abundance of food for fish have yet been identified.

Key Question What are the processes delivering coarse sediment and where do they occur?

Findings:

The major processes for sediment delivery are road surface erosion, landslides, debris flows and channel erosion. There is an apparent correlation between landslide occurrence and management activity.

Summary of Evidence:

- The following chart, based on aerial photograph interpretation, shows the distribution of land management activities and landslides across the watershed.

<u>Subwatershed</u>	<u>Percent of Watershed Harvested</u>	<u>Road Density Mi/Sq Mile</u>	<u>Percentage of Total Landslides per Sub-basin</u>
Wheeler	37%	3.12	50%
Fourth of July	24%	2.59	30%
East Fork	9%	0.91	16%
Lower Winchuck	9%	2.91	2%
South Fork			1%
Bear Creek	9%	2.04	1%
			<u>100%</u>

- Naturally occurring landslides are concentrated in inner gorges and along contacts between the Mt. Emily Complex and the Dothan Formation.
- The Mt. Emily intrusives decompose to coarse cobbles and gravels and are the source of coarse sediment particles.
- The Wheeler Creek subwatershed has a high number of landslides due to the contact zones, sidecast road construction, and high level of timber harvest.
- The majority of the failures in the Fourth of July subwatershed were harvest related and occurred within the riparian area.
- The majority of the landslides in the East Fork were natural failures along steep sideslopes of the inner gorge.
- The Lower Winchuck, Bear Creek, and the South Fork both have gentle topography and therefore, very few slides.

Key Question What are the effects of recreation and where do they occur?

Findings:

Effects on the natural resources in the Winchuck basin from recreational use are light and generally limited to litter, vandalism to facilities, and noise. Most are concentrated below the confluence of Wheeler Creek and the Winchuck River.

Summary of Evidence:

- Level of recreation use is light, the nature of the activities are low impact, and use is dispersed throughout the watershed.
- Low level impacts including erosion, soil compaction, vegetative trampling, disturbance to people, and wear and tear on facilities occur mostly at developed facilities like Winchuck Campground and Ludlum House Recreation Area.
- Developed sites are designed to minimize impacts and are regularly monitored and maintained.
- Aquatic and terrestrial surveys done in the Winchuck basin do not show an impact from recreational use on habitat quality.

Key Question What are the recreation needs in the basin?

Finding:

There is an increasing demand for developed camping, developed group use sites, and trails.

Summary of Evidence:

- Conflict exists between dispersed campers and group use facility users at the Ludlum area.
- Contact with visitors show that people are looking for new trail opportunities.
- Ludlum House group use site is no longer able to meet the needs of users due deteriorating structure and lack of accessibility that has precluded use by some users.
- The Bomb Site Trail, the only trail in the basin, does not currently meet the needs of a variety of user groups.

III. CONCLUSIONS, INFORMATION NEEDS, AND OPPORTUNITIES

A. SUMMARY OF CONDITIONS

- Terrestrial processes are intact with no problems discovered or values being threatened at this time.
- Stream channels have been simplified due to high coarse bedload and lack of large wood. Landslides have increased bedloads, especially in Wheeler Creek, Fourth of July Creek and the Winchuck River.
- Water quality is high.
- Aquatic communities have representatives of the expected fish and invertebrate species.
- Anadromous and resident salmonid fish populations are down from former years.
- Potential exists for road failures and delivery of coarse sediments to streams, especially in Wheeler and Fourth of July sub-watersheds. Potential for coarse sediment delivery is high where road construction or timber harvest occur on rock contact zones and shear zones, and steep slopes.
- Recreation use of the watershed is light and does not have a detrimental effect in the watershed.
- More developed recreation facilities are needed.

INFORMATION NEEDS

- Information about the condition of privately owned lands in the basin is lacking. The Winchuck Watershed Council is coordinating information collection on the lower mainstem (excluding the South Fork). Information on anadromous fish production on private industrial forestry lands in Bear Creek and the South Fork needs to be incorporated into Watershed Analysis.

OPPORTUNITIES

This watershed analysis has identified the following opportunities. Other opportunities were identified in the Preliminary Watershed Assessment (3/94). Specific projects identified to address these opportunities are located in the process files.

The highest priority opportunities for watershed restoration/jobs-in-the-woods projects are:

Prevent additional sediment delivery to streams from road related sources.

Other opportunities are:

Expand and improve group recreation opportunities.

Provide more trails for a variety of users.

CONCLUSIONS

The team's analysis showed clearly that projects designed to reduce or prevent sediment delivery to streams are the highest priority in the watershed. Roads were stratified by potential to deliver sediment to streams. Roads that were determined to have a high or moderate potential were examined in the field and prioritized. Refer to Chetco District Watershed Restoration Priorities in the Winchuck and N.Fork Smith Watersheds (12/19/94 revision) contained in the project records for detailed information.

The Wheeler Creek sub-watershed was determined to have the most sediment delivery from landslides, debris flows, and ravel chutes. The majority of the failures are related to sidecast road construction. There are also several contact zones between the Mt Emily complex and the Dothan Formation, forming areas prone to erosion and slope failures. Of all the landslides in the Winchuck basin, 50% occur in the Wheeler Creek sub-watershed and are primarily harvest and road related.

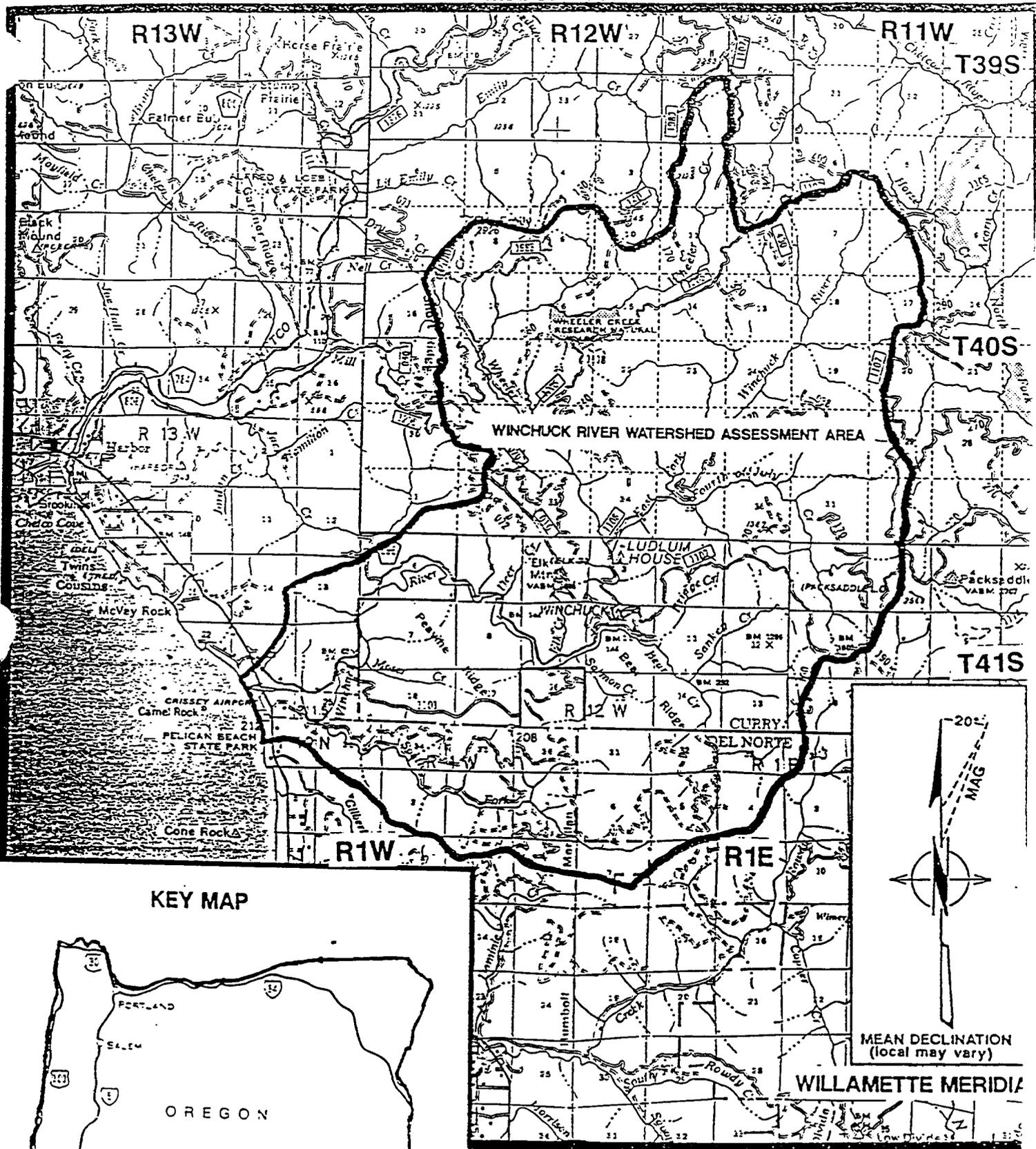
The Fourth of July sub-watershed was mapped as having 30% of the failures within the Winchuck basin. The majority of these failures were harvest related and occurred within the riparian area.

Restoration is a high priority in Wheeler and Fourth of July subwatersheds. Road decommissioning, stormproofing, and repair to prevent additional sediment delivery from roads to streams would assist in the restoration of the aquatic systems in these two subwatersheds.

The East Fork of the Winchuck is in good condition. Bear Creek is in a recovering trend. Protection should be emphasized in these two subwatersheds. Preventing sediment delivery to streams from road related sources would be an effective way to protect the watershed values.

Restoration needs in the South Fork are unknown.

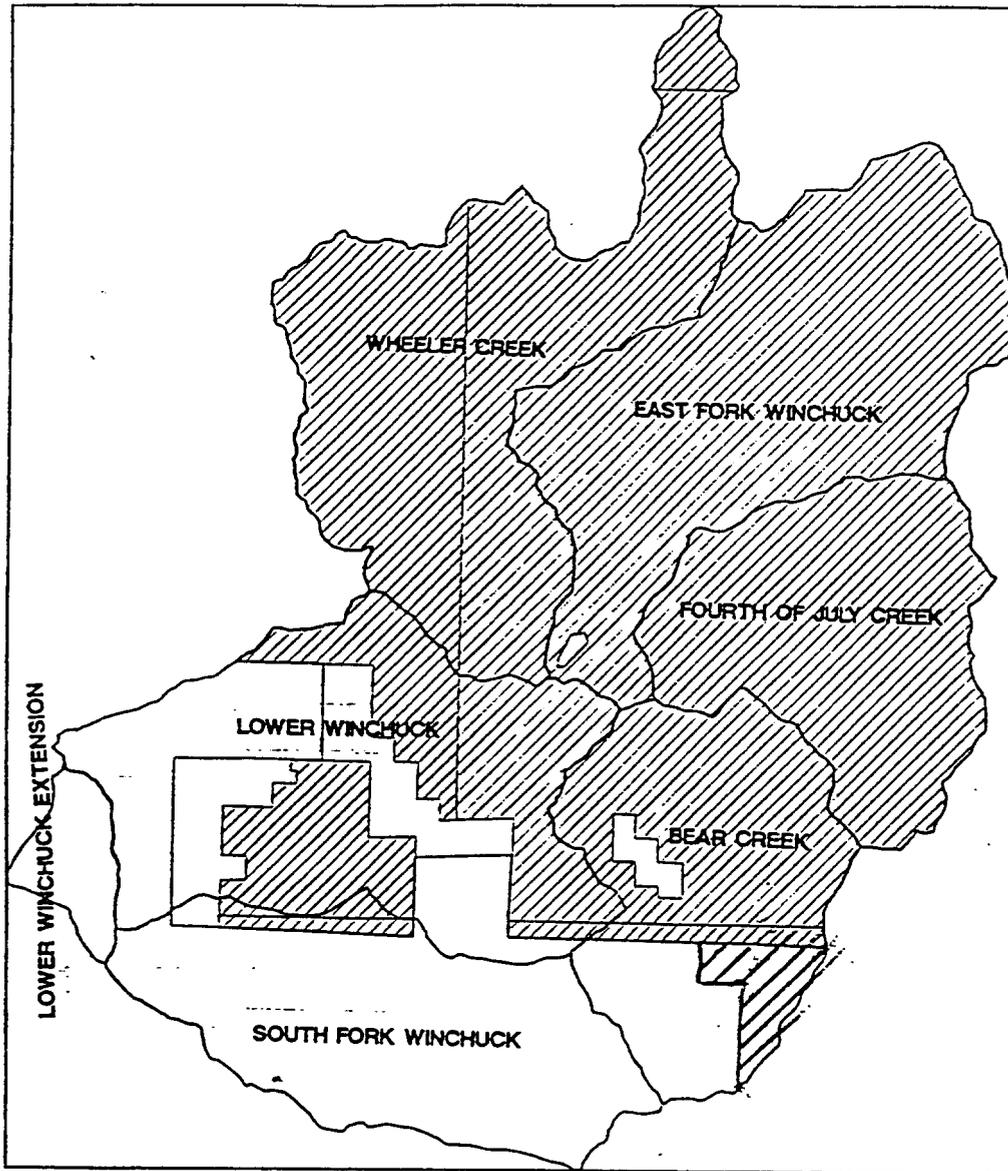
WINCHUCK RIVER WATERSHED VICINITY MAP



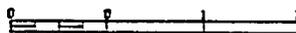
CHETCO RANGER DISTRICT

Scale: 1/2 inch = 1 mile

WINCHUCK RIVER BASIN



SCALE 1: 126720.



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FOREST SERVICE OWNED LAND



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