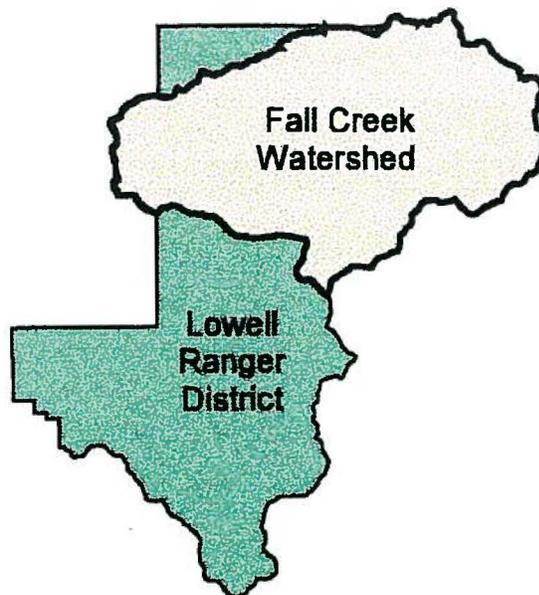
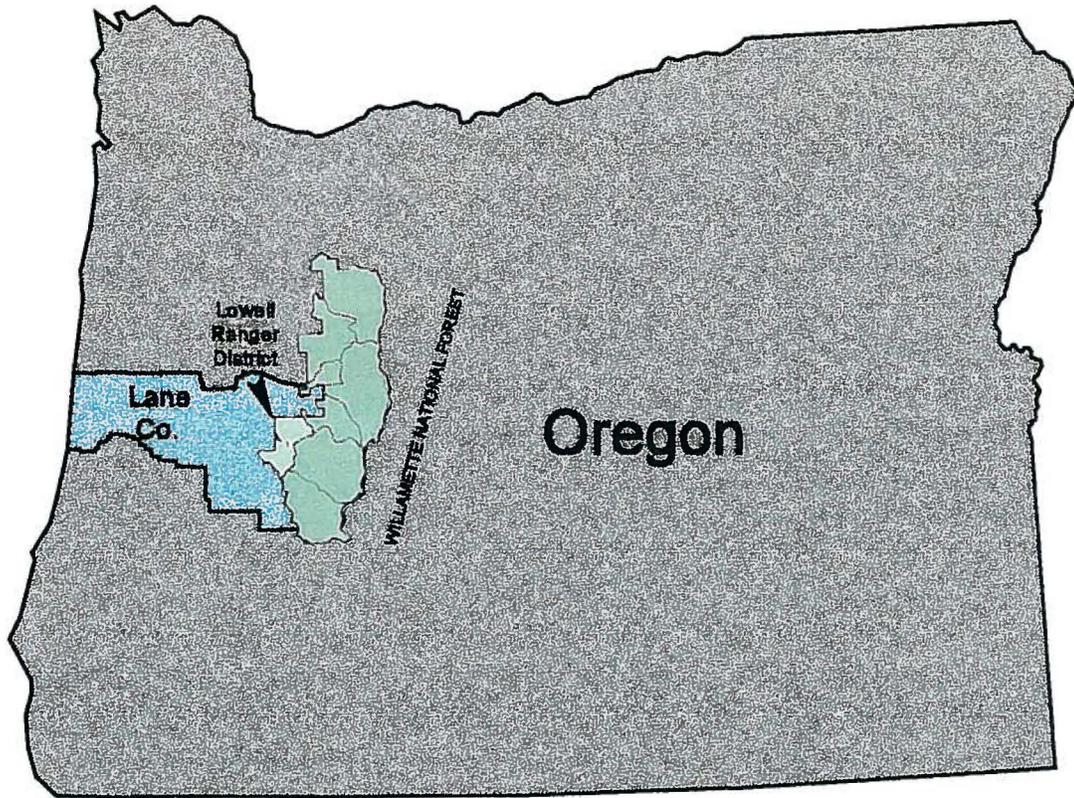


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State, County and Forest Boundaries

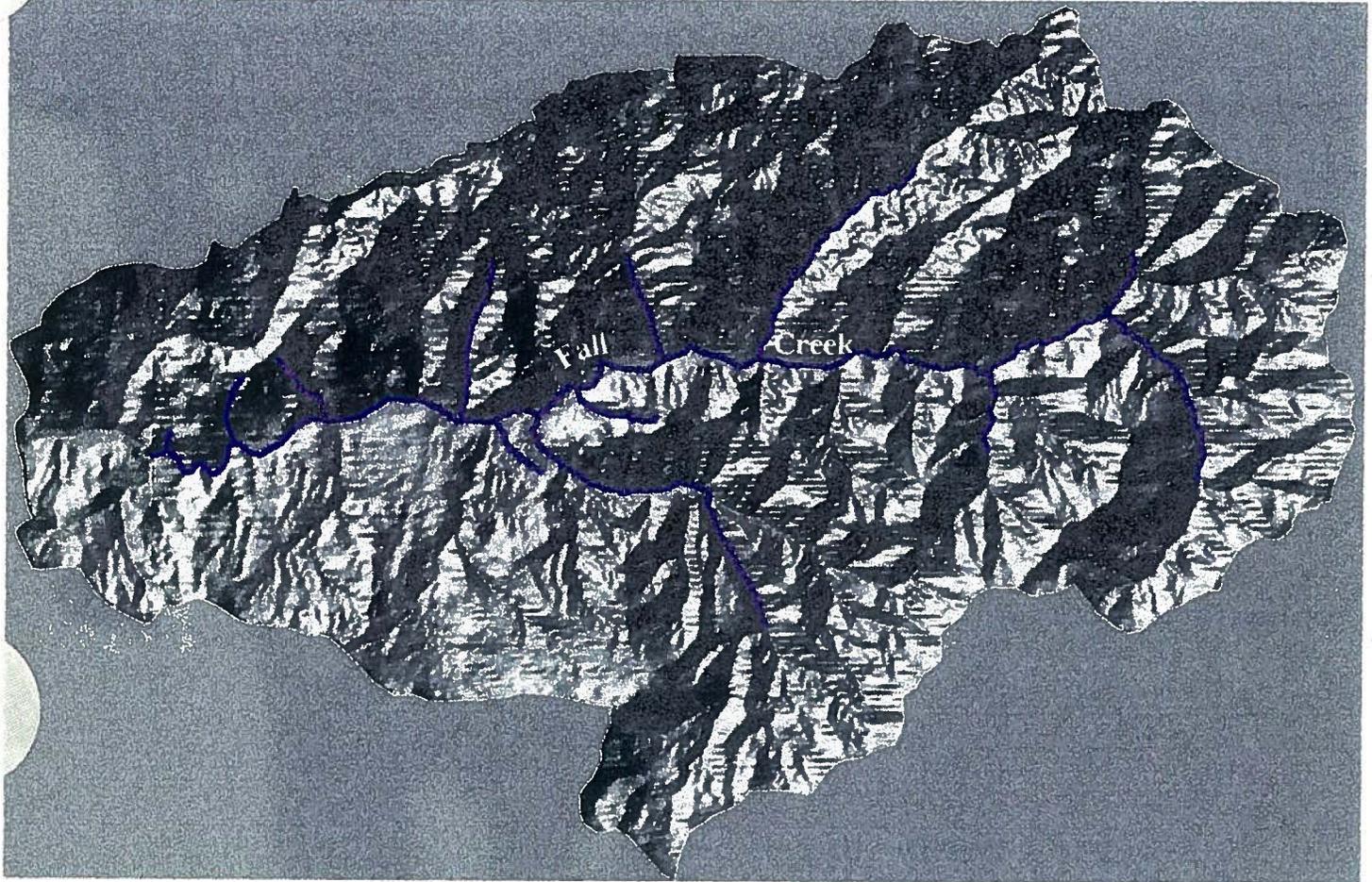


Lowell R. D. and Watershed Boundary

Fall Creek Watershed Analysis

Willamette National Forest

1:150000



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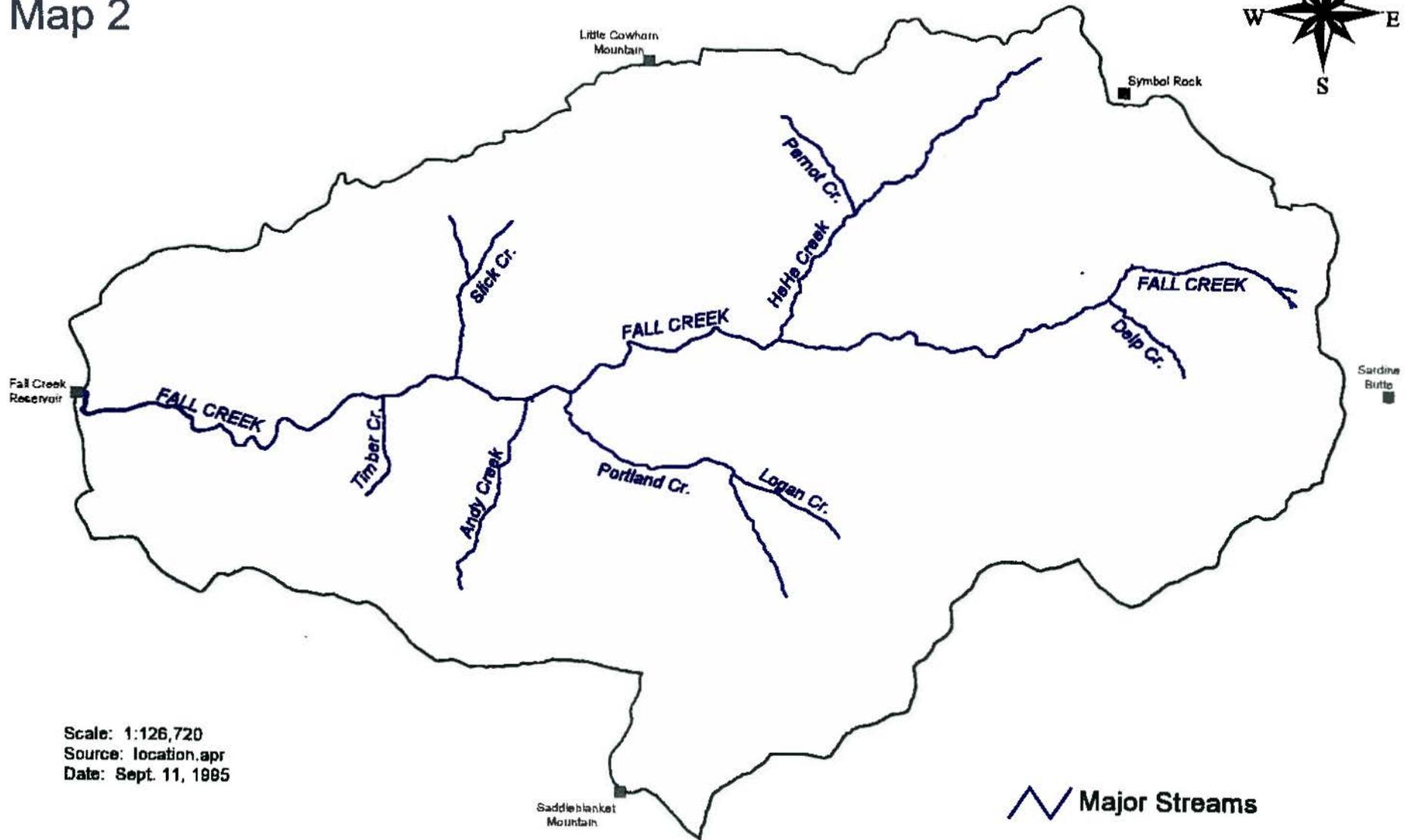
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MAJOR FEATURES

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Scale: 1:126,720
Source: location.apr
Date: Sept. 11, 1995



 Major Streams

 Watershed Boundary

INTRODUCTION

The Fall Creek watershed provides a wide range of uses and a variety of commodities to local residents. Demands on the watershed range from providing local businesses with forest products to recreational opportunities for local residents. Natural processes and management activities have shaped the landscape into its present form. This analysis will explain the processes which determined landscape changes over time, and recommend watershed management from a holistic (ecosystem) view while providing needed commodities to surrounding communities. Such an approach may make it possible to sustain the diversity and productivity of the watershed. This is not a decision document, but rather a guide for management to assist in sustaining the watershed productivity.

Management direction for the watershed is provided by the Record of Decision (ROD) of April, 1994 and the Final Supplemental Environmental Impact Statement (FSEIS) on Management of Habitat for the Late-Successional and Old Growth Forest Related Species Within the Range of the Northern Spotted Owl. (USDA, USDI, 1994). This FSEIS is popularly known as the Northwest Forest Plan and has amended the Willamette National Forest Land and Resource Management Plan (USDA, 1990). Hereafter, the Northwest Forest Plan and FSEIS will be referred to as the Northwest Forest Plan.

The Northwest Forest Plan requires that a watershed analysis be accomplished prior to any major land management activity within the watershed. This analysis has been completed to comply with this direction and to provide responsible officials with more comprehensive information upon which to base land management decisions.

The analysis area is located approximately 20 air miles east of Eugene in Lane County (*See Map 1*). Its size is approximately 120 square miles which equates to 76,704 acres. Major features of the watershed are delineated in *Map 2*. Specific land allocations outlined in the Northwest Forest Plan can be found in *Table 1* and *Map 3*.

This analysis is a continuation of a district wide assessment completed in June, 1994, for the 1994 Watershed Restoration Program. The Federal Agency Guide for Ecosystem Analysis at the Watershed Scale (Version 2.1) will provide guidance for the process. This analysis will provide:

- ◆ A general understanding of the ecological conditions and processes occurring in the watershed,
- ◆ A list of restoration projects which will enhance the ecosystem and close the gap between current conditions and the range of natural conditions,
- ◆ Support for the Late-successional Reserve Plan,
- ◆ Direct future access and travel management decisions,

- ◆ Identify recreation uses and trends, and
- ◆ Guidelines for further decision making regarding provision of commodities to benefit local communities.

In accordance with direction outlined in the Federal Agency Guide for Ecosystem Analysis, this analysis is comprised of the following components:

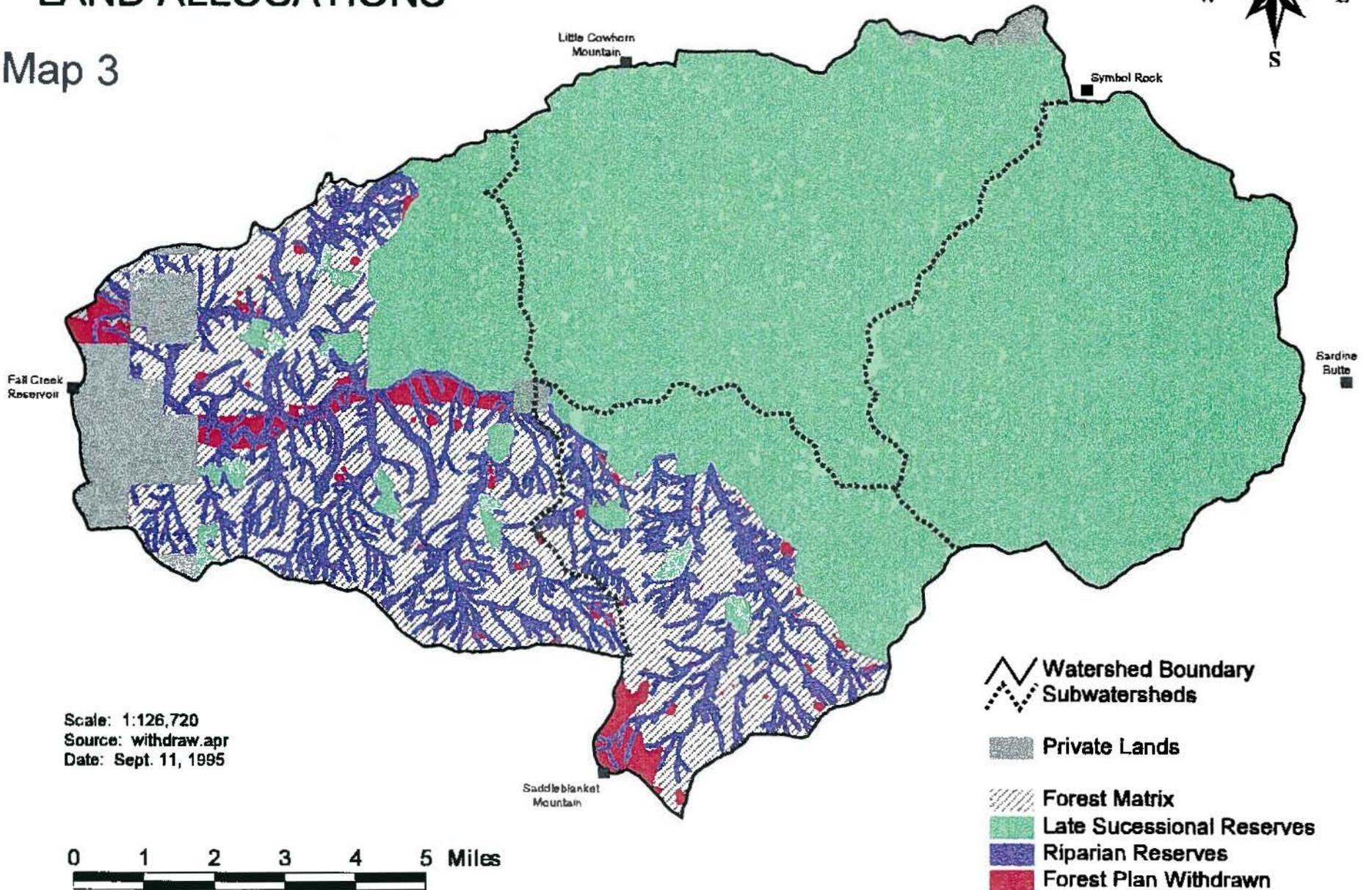
- ◆ A Characterization section which describes the unique or particularly important characteristics of the watershed (*Chapter 1*),
- ◆ An Issues and Key Questions section describing the various concerns and opportunities existing in the management environment, and identifying which need further consideration for best current and future decisions (*Chapter 2*),
- ◆ A Reference Condition/Current Condition section discussing the current watershed condition, presented in relationship to historical conditions of the watershed in order to put the various relevant resources in perspective (*Chapter 3*),
- ◆ An Interpretation section which explains the differences between historical, current and natural conditions, and how those factors affect the capacity of the watershed to achieve management objectives, presented in relation to the issues and key questions (*Chapter 4: this section provides answers to the Key Questions*), and
- ◆ A Recommendation section which identifies those management activities that could move the system towards the reference conditions or management objectives (*Chapter 5*).

Table 1. Northwest Forest Plan Land Allocations

Land Allocations	Acres	% of Watershed
Late-Successional Reserves	48,590	63%
LSR 100 acres	1,406	2%
Riparian Reserves	9,863	13%
Other Forest Plan Withdrawn	1,087	1%
Matrix	15,758	21%

NORTHWEST FOREST PLAN LAND ALLOCATIONS

Map 3



CHAPTER 1

CHARACTERIZATION

The purpose of this section is to place the watershed in context within the river basin and province, and to briefly analyze and describe the dominant physical, biological, and social features, characteristics and uses of the watershed.

PHYSICAL DOMAIN

GEOLOGY

The Upper Fall Creek watershed of the Willamette National Forest is part of the western Cascade subprovince of the Cascade Range. This subprovince is located at the northwest boundary of the Basin and Range Province. It consists of rocks from the Eocene through the Pliocene epochs, spanning a range of approximately 40 million years and ending about four million years ago (*See Map 4*). The watershed extends from the head of Fall Creek Reservoir on the western margin to the North Fork of the Willamette divide to the east; and from the divide with Little Fall Creek and the McKenzie River on the northern boundary to the divide with Winberry Creek on the south. The elevation ranges from 818 feet at the upper end of the Fall Creek arm of Fall Creek Reservoir to 4,969 feet above Mean Sea Level at the top of Saddleblanket Mountain.

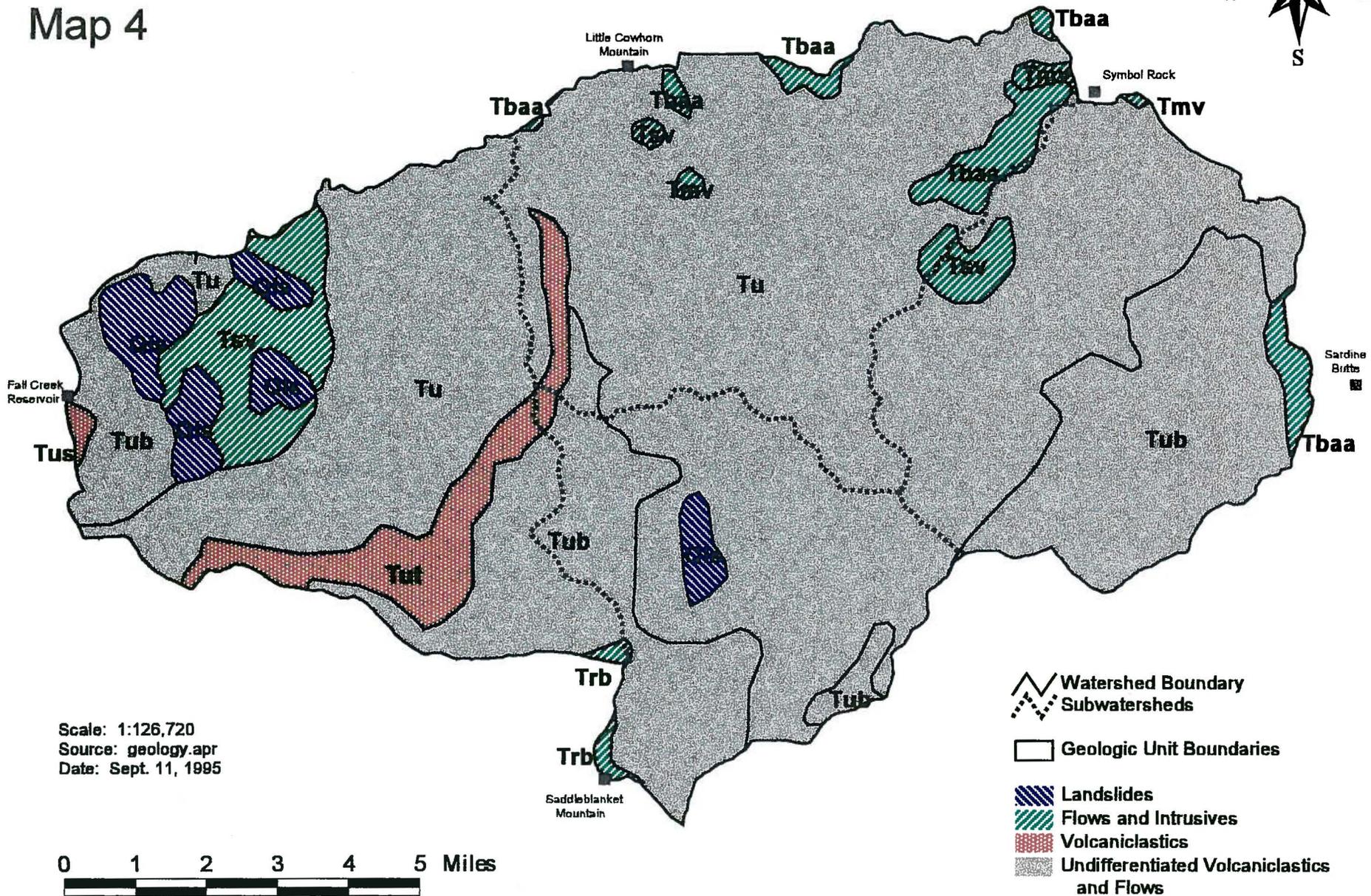
HYDROLOGY

The Fall Creek watershed climate is Pacific-Marine. Precipitation ranges from 40 inches at lower elevations to 70 inches at higher elevations. Most of the precipitation occurs between October and June as rain or snow. Due to the age and nature of the underlying volcanoclastic rocks, the riverine pattern is dendritic with high stream densities. Streams in the watershed originate at the top of ridges and become deeply incised with constrained valley bottoms as they move downslope. Stream gradients are high, ranging from above 20% in the upper portions of the watershed to less than 2% in the main Fall Creek corridor. High stream gradients produce high energy streams which carry large volumes of sediments to Fall Creek, where the stream gradient decreases and deposition occurs upstream of small geologically constrained areas or behind large woody debris. Due to the lack of large woody debris to capture and store sediments and bedrock confined channels, the Fall Creek riverine system is an excellent sediment transport system.

Historically, the Lowell Ranger District emphasized timber management, resulting in a large road system to access timber and other forest resources. Timber sale revenue paid for the majority of past road construction and road maintenance. However, timber harvest has declined with the shift toward ecosystem management. The Regional access and travel management policy dictates that all roads remain open unless some overriding reason for closure exists.

GEOLOGY

Map 4



Scale: 1:126,720
Source: geology.apr
Date: Sept. 11, 1995

0 1 2 3 4 5 Miles

- Watershed Boundary
- Subwatersheds
- Geologic Unit Boundaries
- Landslides
- Flows and Intrusives
- Volcaniclastics
- Undifferentiated Volcaniclastics and Flows

The District policy reflects this commitment to retain open travel corridors unless otherwise designated. However, the change in forest management has seriously reduced the District's operating budget and its ability to maintain such an extensive system. Therefore, some roads will be removed from the system, others closed until future access is needed, and many kept at the lowest possible maintenance level.

BIOLOGICAL DOMAIN

TERRESTRIAL

The Fall Creek watershed is located along the western boundary of the Forest, adjacent to private industrial forest and the southern Willamette Valley. These lands are managed under intensive forest and agricultural practices contributing very little to late-successional forest habitats. The forest landscape pattern in Fall Creek watershed is typically fragmented, similar to adjacent federal watersheds, but still possessing large tracts of late-successional and old-growth forests. These large blocks provide valuable habitat along the western edge of the Forest and contribute to the connectivity within and adjacent to the watershed. They are located along the Fall Creek corridor, Bedrock/Slick Creeks, Pacific/Marine Creeks and Platt Creek. As a result, the upper two thirds of the watershed have been designated as a Late-Successional Reserve in the Northwest Forest Plan.

Fall Creek watershed vegetation is composed primarily of the Douglas-fir and Western Hemlock forest series. These two forest series are commonly found on the low to mid elevations throughout the Central Oregon Cascades. Along with Douglas-fir and western hemlock, the most common associates are western redcedar, incense cedar, sugar pine, and western white pine. Hardwood species include bigleaf maple, red alder, chinquapin, and madrone.

Some of the most productive forest lands on the Forest are found within the watershed. Conifers can potentially grow to 120 inches in diameter, reaching heights of over 300 feet and living to 800+ years. As a result of the productive capabilities of these forest lands, this watershed has provided large quantities of high quality wood products to local economies during the last five decades.

This watershed is the most botanically diverse watershed on Lowell Ranger District. Seven populations of three sensitive plant species have been documented in rock garden, old-growth riparian, and moist meadow habitats. There is an abundance of habitat for the old-growth and riparian associated survey and manage bryophytes, fungi and vascular plants. Non-forested habitats such as the rock outcrops of Cowhorn Mountain, the large rock garden complex of Gold Point, wet and mesic meadows shrouding Saddleblanket Mountain, and riparian hardwoods associated with creek corridors add to overall biodiversity.

The watershed is host to a number of wildlife species typically found in forest habitats of the Central Cascades. They include Roosevelt elk, black-tailed deer, black bear, mountain lion, bobcat, cougar, flying squirrel, red tree vole, ruffed and blue grouse, mountain quail,

waterfowl, Pacific giant salamander, and red-legged frog. Due to its proximity to the Eugene/Springfield metropolitan area, there is substantial hunting, fishing and wildlife viewing pressure in the Fall Creek drainage.

Many threatened, endangered and sensitive (TE&S) species are known or suspected to occur within this watershed. These species are closely associated with late-successional and old-growth forest, diverse special habitats and interior forest habitat. The northern spotted owl is the only TE&S species that has been intensively surveyed and monitored. The entire watershed was designated as Northern Spotted Owl critical habitat by USFWS in 1991 under the Draft Recovery Plan.

AQUATIC

The Willamette River flows into the lower Columbia River downstream from Bonneville and all other dams on the Columbia. Fall Creek is within the Middle Fork Willamette Subwatershed of the Willamette River System.

Spring chinook are the only anadromous fish native to the Middle Fork Willamette River. Summer and winter steelhead were introduced into the system in 1953. Construction of Fall Creek Dam in 1965 limited migration. Currently, downstream passage facilities and an upstream trap are used by migrating salmon and steelhead, although existing runs are low in numbers. The Oregon Department of Fish and Wildlife manages Fall Creek as a recreational fishery and catchable rainbow trout are stocked on a yearly basis. Other fish species native to Fall Creek include rainbow trout, cutthroat trout, mountain whitefish, longnose dace, speckled dace, largescale sucker, and several sculpin species.

SOCIAL DOMAIN

The Fall Creek drainage is a refuge from the Willamette Valley heat during the summer, as it is usually ten degrees cooler than Eugene and is approximately an hour away. Fall Creek's lazy summer flow, combined with deep holes and shallow wading areas, is Springfield's "backyard" water paradise and the forest setting is a year-round attraction. Since it is usually free of snow, winter finds hikers on the trails and boaters in Fall Creek, when flow is high. Its proximity to the Eugene/Springfield metropolitan area also makes the Fall Creek drainage attractive to homeless people as an alternative camping area. Locals enjoy Fall Creek so much, they have formed the Fall Creek Consensus Group to preserve the stands visible from Forest Road 18.

HISTORIC HUMAN IMPACTS

The Fall Creek watershed has attracted people for at least 8,000 years. Archaeological and historic research suggests that a combination of human interaction and natural forces have shaped the landscape in the watershed and changed its character significantly during the last 150 years (Baxter, 1986; Minor, et. al., 1987).

At the time of European exploration at least two tribes, the Kalapuya and Molala, were thought to have inhabited this watershed. In later times, the Klamath were known to have visited the Lowell area on their way to the Willamette Valley.

Epidemic diseases and social dislocation following the arrival of fur trappers, explorers and settlers between 1790 and 1840, resulted in the near extinction of local tribes. Many of the descendents of local tribes are currently part of the Siletz, Grande Ronde, Warm Springs, and Klamath reservations. The earliest Euro-American settlements in Lane County were in nearby Pleasant Hill and Lost Valley in the 1840's. Several settlers made claims in the Fall Creek watershed near Clark Creek in the 1880's and 1890's. Prospectors panned Big Fall Creek, Gold, Portland, and Delp Creeks and gold was actively prospected in the upper reaches of Portland Creek and Sinker Mountain after 1895 (Beckham, et. al., 1981; Briem, 1937).

In 1891, Congress gave the president power to create forest reserves from public domain. In 1897, it passed the Forest Management Act which provided for the administration of the reserves and included forest fire suppression. The Forest Service embarked on a ground patrol system of fire detection in the early 1900's, using rangers on horseback and covering a system of trails and vantage points connected to ranger stations only by telephone lines. In the Fall Creek watershed, lookout sites or stations were established on Clark Butte, Little Cowhorn, Hehe Mountain, Saddleblanket Mountain, and Fawn Rock.

Beginning in 1912, the Forest Service permitted grazing allotments in the Fall Creek watershed for cattle and sheep. Nearby allotments included the Winberry drainage, and Saddleblanket, Sourgrass and Tire Mountains. Trail construction accelerated greatly with the advent of the Civilian Conservation Corps (CCC) from 1933 to 1937. This labor force constructed a system of trails and bridges with shelters, guard stations, lookout towers and associated buildings as well as ranger stations.

In 1933, the Fall Creek CCC Camp was built on Fall Creek Road about five and a half miles northeast of the town of Lowell. Crews from this camp and E.R.A. laborers improved Fall Creek Road and developed campgrounds at Dolly Varden, Big Pool, and Puma Creek. From 1936-37, the CCC constructed the Clark Creek Organization Camp which is eligible to the National Register of Historic Places (Winkler and Lindberg, 1990).

The Fall Creek watershed was first entered for commercial timber production in the 1940's. The earliest harvest units were located in the lower part of Fall Creek. These early units tended to be large 50-150 acre clearcuts with scattered clumps of seed trees. Reforestation was from natural regeneration or supplemented by planting seedlings. During the 1950's, harvest activities centered in Hehe Creek, generally related to salvage from the Hehe fire in 1951. The period of the 1960's through the 1980's was an era of intensive road construction and timber harvest activity. Harvest units averaged 20-30 acres in size and were dispersed across the landscape to provide wildlife habitat and develop road systems. The harvest rate averaged 10% of the watershed area per decade, but has declined in recent years. To date approximately 46% of the watershed has been harvested resulting in two billion board feet of timber.