

# **Chapter 3 - Affected Environment**



## 3.0 Introduction

This chapter describes the relevant resource components that might be affected by the proposed alternatives within the Kelsey Whisky Planning Area. The baseline conditions presented in this chapter are the basis for the Environmental Consequences (cf chapter 4) of the No Action Alternative. The descriptions focus on key issues as described in Chapter One. Discussions from previous analysis are summarized and incorporated by reference from the Northwest Forest Plan (USDA and USDI 1994), Medford District Proposed Resource Management Plan/Environmental Impact Statement (USDI 1995) and the more site specific Wild Rogue North Watershed Analysis (BLM 1999b) and the Wild Rogue South Watershed Analysis (BLM 2000). The watershed analyses are frequently referenced and are located at [www.or.blm.gov/Medford](http://www.or.blm.gov/Medford), under planning documents.

The following items were considered but are not present in the planning area: flood plains, regional aquifers and farmlands. There are currently no Areas of Critical Environmental Concern (ACEC) or Research Natural Areas (RNA) in the planning area.

## 3.1 Location and Description

The Kelsey Whisky Planning Area (Map 1) encompasses approximately 104,000 acres within Josephine, Douglas, and Curry Counties in southwestern Oregon. It includes the project area North of the Rogue River and the analysis area which includes the entire 5th field watershed. It is situated approximately 23 miles northwest of Grants Pass and bordered by the Galice and Bear Camp roads to the south, the Wild Rogue Wilderness Area to the west, and the Marial National Backcountry Byway on the north and east. It has the same boundaries as the fifth-field watershed known as the Rogue River/Kelsey Creek Watershed (REO #17100310004). The analysis is bisected by the Rogue River which also serves as the administrative boundary between two BLM Resource Areas: Glendale RA to the north and Grants Pass RA to the south.

The area is characterized by a Mediterranean climate with cool, wet winters and hot, dry summers. Annual precipitation increases from east to west. It ranges from about 40 inches at the mouth of Grave Creek on the east side of the watershed, to nearly 120 inches on Mount Bolivar to the west. Approximately 80 percent of the precipitation occurs from October through May. Elevation ranges from 400 feet to almost 4,900 feet. Table 3-1 presents a summary of environmental features of the northern portion of the watershed, the area in which management actions are being proposed.

Approximately 96 percent of the planning area is managed by the BLM. Isolated blocks of lands held in private ownership (3 percent) are located within the planning area, primarily in the vicinity of Marial and Black Bar Lodge. Galice, a seasonal recreational community, is about ten miles upstream of the planning area. In addition to private landowners, the U.S. Forest Service and State of Oregon manage approximately 1 percent and there are no major communities located within the watershed.

The Medford District Resource Management Plan (RMP) and the Northwest Forest Plan (NFP), designated seven land use allocations which apply to the planning area. General Forest Management Area (GFMA) lands have timber management as a major objective. Connectivity Blocks are also to be managed for timber production with modified harvest to provide for old growth structure. Late-Successional Reserves (LSRs) are to be managed for old-growth conifer habitat. Riparian Reserves are also to be managed for old-growth and late-successional habitat and to provide for optimum stream habitat. Spotted owl core areas are 100-acre blocks of older forest to be managed for late-successional habitat. Administratively withdrawn lands include lands withdrawn from intensive timber

**Table 3-1. Wild Rogue North Watershed Analysis – Summary of Environmental Features.**

GEOGRAPHIC INFLUENCE	TYPE	SPECIFIC TO THE WILD ROGUE NORTH WATERSHED	
Morphology	Watershed size	<ul style="list-style-type: none"> <li>• 61,693 acres</li> <li>• 57,718 acres</li> <li>• 105,000 acres</li> </ul> Wild Rogue North watershed BLM land (93 percent) (Entire 5 th field watershed)	
	Elevation range	• 690 - 4,300 ft - mouth of Grave Creek to near Mount Bolivar	
	Transient Snow Zone > 2500 ft	• 28,900 acres	
	Drainage pattern	• Dendritic	
	Orientation	• North to South	
	Drainage density	• 6.3 miles/mile <sup>2</sup>	
	Total stream miles	• 611 miles	
	Total fish stream miles	• 59 miles	
Meteorology	Annual precipitation Type Timing Temperature range	<ul style="list-style-type: none"> <li>• 40-120 inches east to west</li> <li>• Rain and snow</li> <li>• 80% occurring October thru May</li> <li>• 0-100 degrees F</li> </ul>	
	Min peak flow, near Grants Pass Max flow, near Agness	<ul style="list-style-type: none"> <li>• 195 ft<sup>3</sup>/s (Recorded on Jan 30, 1961)</li> <li>• 608 ft<sup>3</sup>/s (Recorded on July 9/10, 1968)</li> </ul>	
	Max peak flow, near Grants Pass Daily flow, near Agness	<ul style="list-style-type: none"> <li>• 152,000 ft<sup>3</sup>/s (Recorded on Dec. 23, 1964)</li> <li>• 290,000 ft<sup>3</sup>/s (Recorded on Dec. 23, 1964)</li> </ul>	
	Reservoirs	<ul style="list-style-type: none"> <li>• Several small pump chances &amp; heliponds in Kelsey and Mule Creeks.</li> <li>• Bobby pond - only constructed helipond.</li> <li>• No large bodies of water within watershed</li> </ul>	
Surface Water	Water quality limited stream miles	• 37.4 miles (303d listed for temperature above 64 degrees )	
	Groundwater	Regional Aquifers Springs	<ul style="list-style-type: none"> <li>• None</li> <li>• Numerous springs (not mapped)</li> </ul>

**Table 3-1. Wild Rogue North Watershed Analysis – Summary of Environmental Features.**

GEOGRAPHIC INFLUENCE	TYPE	SPECIFIC TO THE WILD ROGUE NORTH WATERSHED
Geology	Geographic Province	<ul style="list-style-type: none"> <li>• Klamath Mountains</li> <li>• <u>Rogue</u> – metavolcanic rock composed of volcanic rock including altered, greenish lava flows and rocks comprised of lava cinders and fragments. Sepentinite is also present.</li> <li>• <u>Dothan</u> -metasedimentary rock composed of thick sandstone layers alternating with other sedimentary rock and dense pillow lava flows. Sand, silt and mudstone contact prone to landslides.</li> </ul>
	Soils	<p>Shallow depth, many different series and complexes. Basin wide, generally a low water holding capacity and relatively infertile.</p> <p>Nutrient quality, depth and fertility increase moving from east to west across the watershed.</p>
Human Influence	Roads	• 237 miles
	Roads w/i 1 tree length of stream	• 84.0 miles (14% of total stream miles)
	Roads w/i 1 tree length of fish bearing streams	• 2.1 miles (3% of total stream miles)
	Road density	• 0-4.7 miles/miles <sup>2</sup>
	Agriculture	• Historical use on private lands.
	Communications sites	• Nine Mile Repeater
	Communities	<ul style="list-style-type: none"> <li>• No major communities</li> <li>• Several private residences scattered throughout the watershed.</li> </ul>
	Improvements	• Calvert Airstrip (inactive)
	Mining	<ul style="list-style-type: none"> <li>• Current placer claim on East Fork Whisky Creek.</li> <li>• Numerous historical claims along the Rogue River and lower reaches of Whisky and Mule Creeks.</li> <li>• Several hard rock mines.</li> </ul>
Recreation	• Rogue National Wild & Scenic River • Wild Rogue	

**Table 3-1. Wild Rogue North Watershed Analysis – Summary of Environmental Features.**

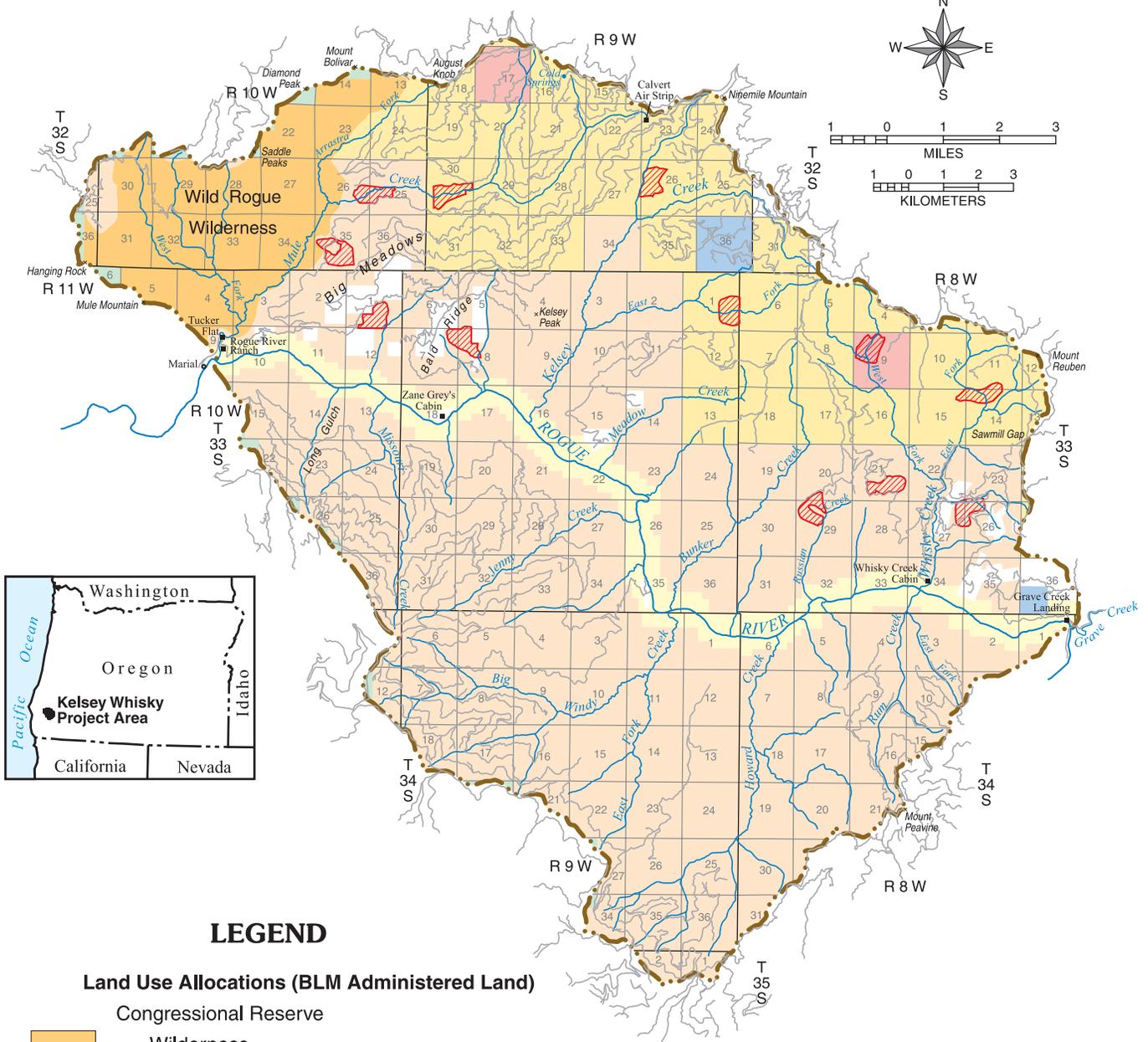
GEOGRAPHIC INFLUENCE	TYPE	SPECIFIC TO THE WILD ROGUE NORTH WATERSHED
Human Influence cont.		Wilderness <ul style="list-style-type: none"> <li>• Grave Creek to Marial Back Country Byway</li> <li>• Tucker Flat Campground</li> <li>• Various undeveloped campsites and trails</li> </ul>
	Timber production	9,258 acres (16%) of BLM land within watershed available for timber harvest. Age distribution on GFMA lands includes: 0-40 years: 28 % 80-200 years: 33 % 40-80 years: 17 % 200+ years: 22 %
	Progeny Test Sites	<ul style="list-style-type: none"> <li>• Three test sites: near Quail Creek, Mule Creek and Jacob Weil Spring</li> </ul>
	Utility corridors	<ul style="list-style-type: none"> <li>• Fiber optics line along Whisky Creek Road</li> </ul>
Biological	Vegetation	<ul style="list-style-type: none"> <li>• Primarily mixed conifer and hardwood.</li> <li>• Vegetative communities differ by slope, aspect, elevation and soils.</li> </ul>
	Threatened, or Endangered Species	<ul style="list-style-type: none"> <li>• Northern spotted owl (13 active sites) • Marbled murrelet (none found) • Coho salmon</li> </ul>
	Survey and Manage species	<ul style="list-style-type: none"> <li>• Del Norte salamander • Mollusks • Red tree voles • Fungi • Bryophytes • Lichens</li> </ul>
	Special Status Plants	<ul style="list-style-type: none"> <li>• Numerous species and locations</li> </ul>

management using the Timber Productivity and Capability Classification (TPCC) system and the congressionally designated Wild and Scenic Rogue River Corridor.

The land allocations for the Kelsey Whiskey Planning Area can be seen on Map 7 and include:

- 62 percent Late Successional Reserve and Northern Spotted Owl core areas
- 10 percent Riparian Reserves
- 15 percent Wild and Scenic River Corridor
- 3 percent TPCC withdrawn (TPCC withdrawn to the south is within LSR layer)
- 10 percent GFMA lands

Approximately 50 percent of the land located on the north side of the Rogue River and all of the land on the south side is included within the Galice Late-Successional Reserve (# OR-258). The Southwest Oregon LSR assessment indicates that approximately 60 percent of the Galice LSR is currently in late-successional habitat, approaching the desired objective of 70 percent (USDI and USDA 1995 pg 17).



**LEGEND**

**Land Use Allocations (BLM Administered Land)**

- Congressional Reserve
- Wilderness
- Wild and Scenic River Corridor
- Connectivity / Diversity Block
- Late Successional Reserve
- General Forest Management Area

**Land Status**

- U.S. Forest Service
- State of Oregon
- Private
- Spotted Owl Core Area
- Kelsey Whisky EIS Planning Area Boundary
- Road

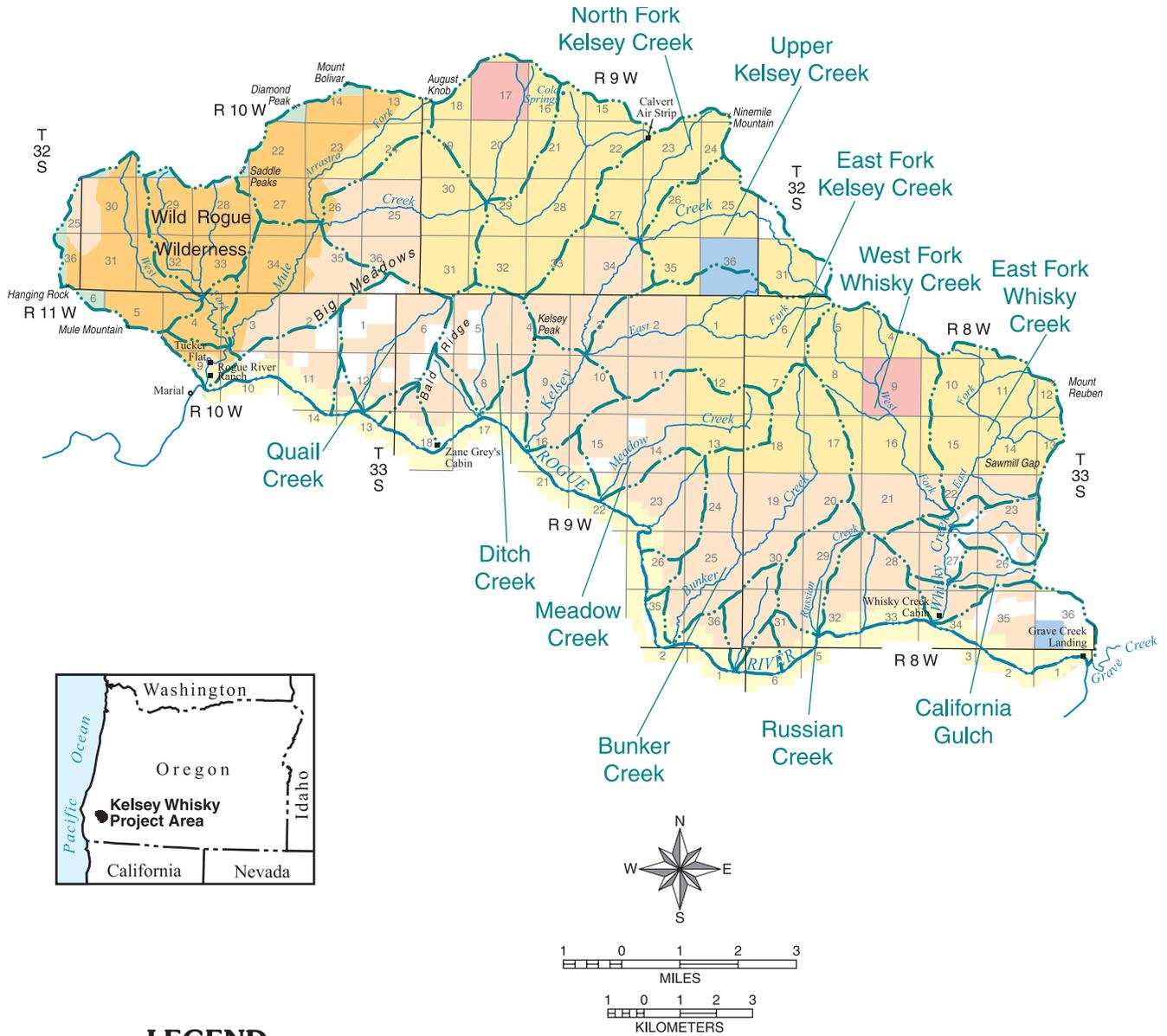
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Bureau of Land Management  
**MEDFORD DISTRICT**  
2003



**KELSEY WHISKY  
ENVIRONMENTAL IMPACT STATEMENT**

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**Map 3:** Current Land Use Allocations



**LEGEND**

- · — · — · Sub Watershed Boundary
- Land Status**
- Bureau of Land Management
  - Wilderness
  - Wild and Scenic River Corridor
  - Connectivity / Diversity Block
  - Late Successional Reserve
  - General Forest Management Area
- U.S. Forest Service
- State of Oregon
- Private

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**Map 8:** Sub-Watersheds

The East Fork Whisky Creek subwatershed encompasses almost all aspects and ranges in elevation from 1450 feet near the confluence with the West Fork of Whisky Creek to 4017 feet on Mount Reuben.

## 3.2 Soils

Soils in the planning area are derived from metasedimentary and metavolcanic rock types. These soils tend to be relatively deep, with more available nutrients than other soil types. They are also moderately erosive and prone to rotational and translational slides. Map #2 and #21 of the Wild Rogue North Watershed Analysis shows known areas of instability and areas unsuitable for timber harvest due in part to stability, shallow soils, or slope gradient, respectively. Many of the smaller basins exhibit multiple erosion channels, particularly in areas prone to rotational slumping. Metasedimentary soils are associated with the Dothan Formation. On the north side of the Rogue River they are found in the area west of Whisky Creek and east of Mule Creek. South of the Rogue River this formation is found west of Howard Creek. The East Fork Whisky Creek basin is comprised of two geologic formations. The Dothan, late Jurassic in age, consists of both metamorphic sediments and volcanics. This formation encompasses about 2/3rds of the basin. The Rogue Formation, also late Jurassic in age, is composed of ultramafic materials including serpentinite. Most of the mining activity occurred in this formation which is found in the southeastern portion of the basin. This unique mix of geology allows a great diversity of plant communities to be present.

Soils derived from metavolcanic rocks, primarily found in the Rogue Formation, are generally shallow and nutrient deficient. These soils are found east of Whisky Creek and west of Mule Creek. In general, they are less prone to landslides than soils derived from the Dothan Formation. However, in areas of contact between serpentinite and other geologic types in the Rogue Formation, there is a high risk of slope failure. Serpentinite seams are present in the east fork of Whisky Creek Drainage and west of Mule Creek as well as lands east of Howard Creek.

Variation in the hardness, grain, and possibly chemical composition of the sediments helped to produce a variety of soils. Soil depths range from over 40 inches to less than a foot. Some soils are buried by colluvial rock and are likely skeletal. Since rainfall, clouds, or fog does not totally compensate for low soil moisture holding capacity, the vegetation patterns tend to reflect soil depth and water availability. Deeper soils may be found in “pockets” close to the ridge tops in some drainages. Such lenses or pockets are not atypical.

### Josephine County and Curry County Soil Surveys

Speaker Josephine	72F	
Beakman Vermissa	8G	<60% slope
Vermissa Beekman	81G	60 to 100% south slope
Vermissa rock outcrop	82G	
Vermissa Beekman	80G	60 to 100% north slope

## 3.3 Hydrology

### 3.3.1 Wetlands, Flood Plains and Riparian Zones

There are no flood plains or regional aquifers in the planning area. The BLM has no ground water injection facilities in the planning area. There is domestic use of springs and perennial streams near Marial and Black Bar Lodge used for drinking water and garden irrigation.

Wet meadows are uncommon in the planning area, but when found, are located in the Dothan Formation east of Marial and west of Kelsey Creek on the north side of the Rogue River. On the south side, they occur west of Big Windy Creek. Generally, these meadows are smaller than one acre. They are the result of rotational slides that form small depressions.

There has been little previous timber management activity in riparian areas in the planning area. All streams are properly functioning, from a hydrologic standpoint. High road density and associated increase in the drainage network through road ditch lines in some portions of the Mule Creek and Kelsey Creek watersheds has potential for influencing timing and magnitude of peak flows but indicator factors like streambank stability and gravel accumulation in low gradient reaches suggests that it is not currently a problem. Approximately 81 percent of the Riparian Reserve acreage is in late-successional habitat condition; only 1 percent is not forested. The remainder is in early- and mid-seral stages due to wildfires and timber harvest. Map #12 of the Wild Rogue North Watershed Analysis shows riparian reserve land use allocations (USDI 1999b).

### ***Proposed Area of Critical Environmental Concern***

The East Fork Whiskey Creek subwatershed is a complete watershed system at the 7th field, including tertiary, secondary, and primary drainages containing relatively undisturbed riparian areas except the lower quarter mile which currently has an active placer mine with largely altered riparian vegetation. The riparian zone contains abundant downed wood and old growth conifers including Douglas-fir, Ponderosa pine, and Pacific yew. Riparian hardwoods such as big leaf maple, red alder, and vine maple are major components of the understory. The riparian habitat and its microclimate are intact throughout the 7th field watershed due to the absence of road construction and timber harvest. Stream conditions are typical of undisturbed forests: abundant large woody debris, excellent habitat diversity, minimal sedimentation, and cool water temperatures during summers. Few riparian ecosystems with these characteristics still exist in southwest Oregon.

## **3.3.2 Water Quality**

Beneficial uses of water for the Rogue Basin have been identified in the Wild Rogue North Watershed Analysis as private domestic water supply, public domestic water supply, industrial water supply, irrigation, anadromous fish passage, anadromous fish rearing, anadromous fish spawning, resident fish and aquatic life, wildlife and hunting, and fishing ( USDI 1999b pg.20, and Oregon administrative rules Chapter 340 Division 41 34-041-0362 Table 5).

Waterbodies that do not meet water quality standards of the Clean Water Act with implementation of existing management measures (Best Management Practices) are listed as impaired under Section 303(d) of the Clean Water Act. Mule and Whiskey Creeks, are listed by the Oregon Department of Environmental Quality for temperatures exceeding 64 degrees F for seven consecutive days (Clean Water Act, section 303d listing), from mouth to headwaters.

Stream temperatures are influenced by aspect, channel geometry, vegetation, stream width, and latitude. The Rogue River is listed for high temperatures and both Mule Creek and Whiskey Creek are tributaries to the Rogue River. They are both remote with little or no riparian manipulation in the past. Seventy-four percent of the Mule Creek riparian reserve is greater than 80 years of age with 16 percent less than 30 years of age (2 percent rock). Eighty-eight percent of the Whiskey Creek riparian reserve is greater than 80 years of age with 5 percent less than 30 years of age (1999b pgs. 21, 48). Approximately 26,900 acres of the watershed are riparian with 75 percent being greater than 80 years of age. The riparian zones are in properly functioning condition.

The high stream temperatures may be a result of natural conditions resulting from low summer precipitation, low water holding capacity of the soils, low summer flows and high ambient air temperatures. The data to support this is not currently available but the monitoring/evaluation section of the Water Quality Restoration Plan described below will include a monitoring plan and schedule.

The Oregon Department of Environmental Quality (DEQ) is scheduled to prepare a Total Maximum Daily Load (TMDL) in 2004. The Glendale Field Office will provide the elements from the Wild Rogue Watershed to support the TMDL in the form of a Water Quality Restoration Plan (WQRP). Most information needed to develop a WQRP are contained in the Wild Rogue Watershed Analysis. If the watershed analysis does not include all of the required elements, those details will be developed through the WQRP. The Watershed Analysis includes condition assessment and problem description. The BMPs from the Medford District RMP and ACS Objectives are currently followed and would become integrated to the Action Plan of the WQRP. The Glendale Resource Area has temperature for data Mule Creek (1994-1997), Whisky Creek Confluence (1994-1999), West Fork Whisky Creek and East Fork Whisky Creek (1998-1999) (USDI 1999b, App. D) which would be incorporated into the monitoring/Evaluation Plan.

The WQRP will include the following elements:

1. Condition assessment and problem description
2. Resource Considerations
3. Limiting Factor Analysis
4. Goals and objectives
5. Timeline for implementation, cost, funding
6. Responsible Parties
7. Reasonable Assurance of Implementation
8. Monitoring/Evaluation Plan
9. Public Participation Plan

## 3.4 Vegetation

### 3.4.1 Plant Associations and Communities

Plant communities are representative of the diversity encountered in the Klamath Mountains Province. Frequent fire disturbance has played an important role in the development of existing plant communities. Potential natural vegetation was mapped on three levels, using the system presented by Atzet and McCrimmon (1990) and further described in the North Rogue Watershed Analysis (BLM 1995). The series is the broadest category, plant associations are fine scale divisions and plant association groups are intermediate between series and associations. Table 3-2 presents Plant Series information in relationship to acres and percentage of the watershed.

The Mule Creek drainage has small areas of white fir series and western hemlock series predominately in the cooler north-facing micro-sites. The Oregon white oak series is found in scattered locations on dry, south-facing sites. Shrubfields with canyon live oak are found on rockier sites.

The Douglas-fir series is found at low elevations, near the Rogue River, on sites too dry for tanoak, and also at higher elevations, above the range of the tanoak. Knobcone pine occurs on the driest sites in the Howard Creek drainage and along Bonnie Ridge, indications of historic stand replacement fire events.

**Table 3-2. Plant series within the BLM portion of the Kelsey Whiskey Planning Area.**

<b>Plant Series</b>	<b>Acres</b>	<b>Percent of Watershed (BLM)</b>
tanoak	76,000	76
Douglas-fir	21,000	21
white Fir	1,000	1
western hemlock	400	<1
jeffrey pine	30	<1
ponderosa pine	50	<1
oregon white oak	100	<1
shrubfields (canyon live oak)	1,000	1
<b>TOTAL</b>	<b>~ 99,580</b>	<b>100</b>

***Proposed Area of Critical Environmental Concern***

The East Fork Whiskey Creek subwatershed has multiple resource values converging in a single location. In addition, there are historical, cultural and scenic values that add to the quality of the subwatershed and merit production for future generations. Historic trails, mine adits, mine tailings and remnants of structures as well as the unroaded character of the basin, undisturbed by timber harvest and seemingly wild and natural are some of the factors. The 34-8-1 road marks the east boundary of the basin and is currently a designated Back Country Byway to Marial. There are several vista opportunities along this route that provide good views into the subwatershed as well as into the Rogue Canyon in the distance.

The subwatershed lies amid the transition area between the Klamath Province and the Oregon Coast Range Province, with the proposed Area of Critical Environmental Concern boundaries within T33S, R08W, sections 10, 11, 12, 13, 14, 15, 22 and 23. Although cut by coastal rivers, the coast range provides a continuous, high elevation, migratory pathway into the Klamath Province. Elevations average about 2000 feet in the coast range but increase significantly in the Klamaths. The Klamaths, central to the southern part of the Pacific Northwest, also link with the California Coast Ranges, the Cascades and the Sierra Nevada Ranges.

The vegetation composition on 91 acres has the potential to fill the Oregon Natural Heritage cell for tanoak-Douglas-fir/salal-evergreen huckleberry (LIDE3-PSME/GASH-VAOV2.) The subwatershed is large enough to function as an independent ecological system and to support species that range over a large area and require the habitats and vegetation diversity provided by ecosystems represented in the basin. It is the largest known block of relatively unentered forest representing the Douglas-fir / tanoak series in the Medford District. It is representative of the whole series at the landscape level. It contains a mosaic of seral stages representative of the Douglas-fir / tanoak vegetation community, and can therefore provide important data on the natural processes occurring in the range of successional stages from early seral through old growth conifers. The area already contains species known to be associated with and used as indicator species of healthy old growth habitat. spotted owls, goshawk, pileated woodpeckers etc. are common to the area.

The East Fork Whiskey Creek area lies amid the migratory axes on the crest. The climate is influenced by marine air and colder, drier, inland highs. It is also located in the north-south transition between the temperate and Mediterranean ecosystems. It typifies the southern coast range transitional ecosystems.

East Fork Whisky Creek subwatershed is surrounded on the west by West Fork Whisky Creek, Bonnie Creek to the North and Reuben Creek to the east. The area contains features not only representative of both provinces, but also other unique elements which are not easily classified into either province according to the Oregon Natural Heritage Plan (ONHP). A plant group identified as Cell #30, the tanoak-Douglas-fir moist with evergreen huckleberry, salal and dwarf oregongrape, can be found here.

Both xeric and mesic plant communities are in the drainage as well as a broad range of age classes. Elevation differences and varied geology help to provide niches for the sugar pine, ponderosa pine, tanoak, and Douglas-fir communities. Patterns are also associated with aspect, slope, and soil differences. Age classes and community differences produced by fire are also evident. Low intensity underburns and stand replacement events have occurred leaving patches 5 to 25 acres in size throughout the variable matrix. There are several stands of very old trees on the upper slopes and along the creek bottom, with an array of age classes along the mid-slopes representing the varied fire history. Below is a synopsis of the different types of vegetation associations that occur within the East Fork Whisky Creek subwatershed

#### Tanoak - Douglas-fir / rhododendron-salal areas

These areas are found to occur on moderate slopes, various aspects, and on moderately drier areas within the proposed ACEC. It is another association for which East Fork Whisky Creek was nominated as an RNA. Douglas-fir is dominant in the overstory and in the regeneration layer. Hardwoods such as chinkapin and tanoak are codominants. The shrub layer is shared by salal and rhododendron. The absence of hemlock in the regeneration layer, and the fact that this association is found on somewhat drier sites with less northerly aspects differentiates it from the Douglas-fir - western hemlock / rhododendron / salal forest association.

#### Riparian vegetation zones

The riparian zones within East Fork Whisky Creek are characterized by an overstory dominated by Douglas-fir. The subdominant layer is shared by vine maple, big-leaf maple, alder, and the regenerating conifers. The shrub layer contains mainly stink currant and red huckleberry, and herbs include, western inside-out flower, fairy bells, sword fern, woods sorel, vanilla leaf, and pathfinder.

#### Evergreen Hardwood Area

There are some areas within the drainage that are dominated by evergreen hardwoods. These evergreen hardwood areas occur mainly on moderate slopes (30 to 60 %), and on the Speaker Josephine soils which are deeper and well drained. Dominant overstory vegetation species include madrone and tanoak. Canyon live oak is found interspersed within these areas. Douglas-fir occurs within these areas in the overstory and within the regeneration layer. The understory in these areas contains very little vegetation, but oregongrape, and groundcones occur occasionally.

#### Canyon Live Oak / Douglas-fir Vegetative areas

There are a few areas within the proposed ACEC where soils occur on extreme south facing slopes (over 60%). These areas are characterized by rocky steep ground with very thin, nutrient poor soils. Canyon live oak and Douglas-fir are the only two overstory species that can tolerate such conditions. Fire has historically swept through these slopes leaving the understory relatively clean, and the Douglas-firs within these areas could be as old as 400 years.

## 3.4.2 Seral Stage Patterns and Successional Processes

There are very few areas of naturally-occurring meadow habitat located in the project area. Big Meadows, located near the divide between East Fork Mule Creek and the Rogue River, is a large privately owned 70 acre meadow. Two smaller meadows, on public land, are located

near the north edge of the Anaktuvuk Saddle, and have been burned to improve forage conditions for elk.

In addition to those mentioned above, there are two other meadows near the Big Meadows area. One of these meadows, Bald Ridge, is owned by Superior Lumber Co, who has expressed interest in exchanging this property. This meadow is characterized by large erosion gullies and slump fractures. The other meadow is located on a similar ridge between Quail Creek and Ditch Creek.

The upper reaches of the watershed are characterized by large areas of fairly homogeneous stands of single canopy-layer Douglas-fir forests, which are approximately 200 years old. It appears that while light underburns occurred during the past several decades, the relatively fire-resistant Douglas-fir persisted. These underburns did not open forest canopies as timber harvesting has done in some areas. These same basic successional patterns appear to be operating on lower sites, but the high rainfall and deep soils have extended the fire interval rate.

The age class distribution within the watershed is presented in Table 3-2 & 3-3. The majority of stands are a combination of mature and old growth trees. In this watershed, mature stands include those between 80 and 200 years old; old growth stands are older than 200 years.

**Table 3-3. Seral stage distribution on BLM land by land use allocation, north of Rogue River.**

Stand Age	Acres	Seral Stage	Acres	
		Non-Forest/ Unclassified	766	
0-10 years	2,159	Early Seral	2,159	
11-20 years	3,744	Mid-Seral	11,524	
21-30 years	2,949			
31-40 years	4,831			
41-50 years	869			
51-60 years	192	Late Seral	2,804	
61-70 years	726			
71-80 years	1,017			
81-150 years	40,256	Late-Successional early mature	76,808	
151-200 years	21,339			late mature
200 years+	15,213			old growth
	(52,216)	Late-Successional / suitable owl habitat)	(52,216)	
80 years+	5,399	Modified Stand modified (partial cut stands)	5,399	
<b>TOTAL</b>	<b>99,460</b>		<b>99,460</b>	

Many stands in the watershed have been modified through past timber harvest or fire events (see Appendix 14). While overstory still consists of older trees, the canopy has been opened to the point where the understory has developed dense stands of brush or hardwoods. For many species associated with late-successional habitat these stands do not provide suitable habitat. See Table 3-3 for the acreage comparison.

The relatively large expanse of contiguous conifer forest in Arrasta Fork Mule Creek (with only scattered openings) represents near climax development for this area. While fires burned through this drainage in the past, most were probably of relatively low intensity during the 1800s and 1900s. The mosaic pattern of stands in the Kelsey Creek and West Fork Mule Creek subwatersheds are the result of repeated wildfires and the physical features of rocky, shallow soils and south aspects.

Late seral conifer species include Douglas-fir, white fir, sugar pine, ponderosa pine, grand fir, incense-cedar, western red cedar, western hemlock, Port-Orford cedar, and pacific yew. Jeffrey pine is the predominant late seral species on serpentine soils. Some of the more common understory vegetation in late seral communities includes tanoak, rhododendron and salal.

### 3.4.3 Special Status Plant Species

#### 3.4.3.1 Vascular Plants

Gentner's fritillary is listed endangered under the Endangered Species Act. Although it has been found in the Glendale Resource Area, the planning area is outside of its known range. It would be searched for during plant surveys, however, and protected if found. None were found in 2002 surveys.

Surveys within the Kelsey Whisky project area began during the 2001 field season, and were completed in the fall of 2002. Surveys are conducted with the intuitive-controlled method (BLM 1999). Two Bureau Sensitive species, Rogue River stonecrop and Oregon bensoniella, were located in one or more of the following fuels units: 23-2.1, 13-2b, 26-4.2, 2-2.2, 02-2, 13-2, and 26-4 (Appendix 6-B). Bureau sensitive species receive protection in the units in which they occur (cf. 2.3.3 Survey and Manage and Special Status Species). Oregon bensoniella was found in wet areas. Howell's lewisia and Rogue River stonecrop were found on rock outcrops. Sensitivity to fire is unknown, although their habitat is unlikely to carry fire in many cases due to low fuel levels.

The Bureau Assessment species, red larkspur, birdfoot cliffbrake, and stipuled trefoil were found in unit 02-2 (Appendix 6-B). Protection measures for Bureau Assessment species will be determined on a site-by-site basis. Sites could be underburned outside of the growing season. Bureau tracking species, Bolander's onion was found in fuels units 23-2.1 and 02-1A, and Howell's lewisia was found in fuel unit 26-4.2. Bureau Tracking species are tracked only for review purposes (Appendix 8).

Several other species of vascular plants have been found in the watershed and are suspected in the project area (Appendix 6 and 6-B). Clustered lady's slipper and California wild hollyhock have not been found in the watershed, but occur nearby and are suspected in the project area. Clustered lady's slipper is an interior forest species which requires inclusion of a large enough area to maintain current habitat and microclimate conditions. The planning area has been surveyed extensively in 2002.

Relative to the proposed Area of Critical Environmental Concern, several Bureau Tracking, Bureau Sensitive (BSO), and Bureau Assessment species have been found in the East Fork Whisky Creek subwatershed. Rogue River stonecrop was identified in sections 12 and 23. Largeleaf fission moss was found in section 13. Just outside of the subwatershed there are

sites of tortula moss, Siskiyou fritillary (Bureau Assessment), and Bolander's onion. These can also be expected to be found within the subwatershed.

### 3.4.3.2 Lichens, Bryophytes and Fungi

Species found during the 2002 surveys included starry hedwigia moss, olive-thorn lichen, tortured horsehair lichen, tortula moss, largeleaf fissidens moss and Muhlenberg's funaria. Additional information about these species, a listing of the Survey and Manage or Special Status lichens and bryophytes suspected in the project area, and a list of species requiring pre-disturbance surveys is presented in Appendix 7.

Species requiring surveys before ground-disturbing activities include Survey and Manage Category A and C Species. No fungi that occur in the area are included in Categories A or C. Noble Polypore, (Category A) is unknown in southwest Oregon, and therefore, would require not require any survey. Known sites of Category A, B, C, D and E species require protection. Bureau Sensitive species also require protection.

Bureau Assessment species: Muhlenberg's funaria moss, wideleaf crumia moss, and tripterocladium moss were found in the EIS area. Of those species, tripterocladium moss is located in timber management units 27-3 and 1-2: the rest were found in fuels units 26-4.2 and 02-2 (Appendix 7-B). Two nonvascular Bureau Tracking species, largeleaf fissidens moss and tortula moss, were found in the fuels and management units. Largeleaf fissidens moss was found in fuels units 26-4.2 and 26-4.3, and in timber units 27-3, 26-2 and 22-1. Tortula moss was found in fuels unit 29-1, and in fuels units 22A, 27-3, 27-1Bcg, 28-1-B, 6-3north, 12-4, 17-3, 8-1, 8-2, 7-2A, 35-2, and 31-1. Mitigation for Bureau tracking species is not required.

### 3.4.3.3 Port-Orford Cedar

This conifer tree species is generally found south of the Rogue River. It is confined to ultramafic rock types of the Rogue geologic formation. Though it prefers to reside in riparian areas, it can grow in other habitats. A small population of Port-Orford cedar is also located in the Mule Creek drainage.

While there is a chance of the spread of Port-Orford cedar root disease (*Phytophthora lateralis*) and the resultant death of cedar trees from infection with any of the action alternatives (as well as the no action), none is expected. There are no known occurrences of POC in any of the units proposed for treatment. The nearest unit that is proposed for harvest is approximately a mile from known POC. Log hauling from unit 35-4, along BLM road 32-9-32, under Alternative 2 would pass near an area containing POC. As only five thousand board feet of timber is expected from the treatment, only one or two loads would pass through the area. There is a great likelihood that log hauling would go along the West Fork of Cow Creek an area where Port-Orford cedar root disease is already present. Map #19 in the Wild Rogue North watershed analysis depicts where POC locations can be found (USDI 1999b).

## 3.5 Fire and Fuels

Historic fires and ignitions were reviewed in the Wild Rogue North Watershed Analysis (USDI 1999b) in some detail (USDI 1999b, pgs.56-59 and maps #15-Historic Fires and Ignitions, #16-High Fire fuels Hazard Areas, and #17-High Fire Ignition Risk Areas and Water Developments). Although this FEIS is referencing the watershed analysis, a portion of its write-up is included here for ease of understanding the long history.

### 3.5.1 Fire History

Historic natural fires in the watershed most frequently began in mid-summer and could continue to burn until autumn rains fell in October or November. This extended time period could often cause the fires to cover large areas. Although fires rarely burned at high intensities consistently across a landscape, in the 1870's inland fires in the Rogue Canyon could be seen by ships passing in the coastal waters at least 20 miles away. When high intensity fires did occur, they often reset the vegetative stand age to zero leaving soils vulnerable due to loss of vegetation and organic matter and increasing the likelihood of severe erosion.

Most fires were characterized by patchy, mosaic patterns, with areas of intense fire that killed overstory trees, but dominated by areas of low intensity underburns where only occasional trees or small patches of overstory trees were killed. Repeated, high intensity fires are revealed by the absence of older conifers on some sites that are now occupied by hardwoods. Evidence of low intensity fires is seen in most older conifer stands.

South-facing slopes typically experience a higher intensity of fire disturbance than north facing slopes. Large conifers on south-facing slopes generally have a patchy distribution, as compared to the north-facing slopes, which often have a more continuous canopy of larger coniferous trees. This is particularly noticeable on the south-facing slopes, where precipitation is 35-45 inches per year.

Fire records indicate ignitions occurred throughout the watershed. Two of the larger fires in the 1900s include the Quail Creek fire (2,800 acres in 1970) and the Galice Complex Fire (27,000 acres in 1987). Lightning is the most common source of ignition in this watershed. Due to the low summer precipitation and increased lightning frequency, July, August, and September are the months of greatest ignition activity.

Miners were one source of intentional ignition of fires; historically, they routinely burned areas along the Rogue River in order to open ground for mining. Native Americans were also a source of intentional ignition in this area prior to European settlement. Burning was done by Native Americans to encourage the resprouting of tanoak and to control pest populations. This practice also cleared the ground under the trees, which made hunting and seed and acorn gathering easier. They also burned along ridge tops to maintain travel corridors and openings for the production of hazel and beargrass, which were used for basket material one or two years after the site was burned. Big Meadows was one of most notable meadows maintained by the Native Americans.

Fire frequency and fire return interval vary throughout the planning area depending on stand characteristics, weather and topography. In the watershed, it appears that fires were probably more frequent and more intense in the hot, low elevation areas along the Rogue River than along the upper ridges where conditions were cooler and more moist. While fire frequencies varied a great deal, it is likely that the fire return interval for this watershed was in the order of 30-80 years (Agee 1993). The watershed experienced significant fires (500 acres or more) about every 20 years in the southeast portion of the watershed and about every 40 years around Marial.

Fire is directly linked with other disturbance factors. In conifer forests there are frequent post-fire insect attacks. Scorched trees are more likely to be successfully attacked by bark beetles and other insects. Crown scorch on ponderosa pine at levels about 50 percent is associated with 20 percent or more mortality by western pine beetle in mature trees; younger trees can survive more than 75 percent scorch with about 25 percent mortality.

Throughout history, fire has swept through the East Fork Whisky Creek area. Exact dates of past fires are not known, but many of the older trees within the subwatershed have fire scars.

Since fire has played a natural role in the ecological processes occurring in the area. Many of the older trees have fire scars, indicating past fire occurrence throughout the East Fork Whisky Creek area.

## 3.5.2 Fire Suppression and Management

Fire suppression efforts began in the early 1900s by the U.S. Forest Service but effective suppression in the area did not occur until after World War II. The Civilian Conservation Corps (CCC) began road construction into the area in the mid 1930s, converting some old trails into roads. With the advent of roads into the area combined with adequate personnel, suppression efforts became more effective.

Fire control has reduced the occurrence and the number of acres burned. Some vegetation manipulations, such as slash burning after harvest, are designed to reduce the spread of wild fires, to reduce fire intensity, and prepare the site for reforestation. Other management practices, such as pre-commercial thinning, would create short-term increase in accumulation of fuels, as well as the resulting risk of intense fires.

Current fire management still involves suppression of wildfires, both human-caused and natural ignitions. However, fire management has taken on several new directions that concentrate on fire prevention. Forested areas that are harvested on federal land usually receive some “prescribed fire treatment,” ranging from broadcast burns to hand-piling excess woody material that can not be sold for firewood, followed by burning the piles. Prescribed burning is a multi-purpose tool used for removal of logging slash resulting from harvest and control of vegetation, which improves reforestation planting and success while reducing the likelihood of a catastrophic fire.

## 3.5.3 Current Fuel Characteristics

Three factors were used to assess fuels and the potential for fires:

Fuel hazard - capability of fuels to carry a fire

Fire risk - the probability of ignition

Value - the relative potential for resource loss from a fire.

Fuel hazards were analyzed based on fuel models of different vegetation types. The highest hazard was related to brushy, light fuels and ladder fuels.

There were several aspects of high fire risk, including: ridge tops, where the probability of lightning strikes are highest, the major access roads which receive the most vehicle use, the Rogue River corridor, and the areas adjacent to private residences.

The following areas were considered high value:

-spotted owl core areas,

-the LSR,

-private residences,

-Tucker Flat campground and the Rogue River Ranch,

-Ninemile communication site,

-Fry gravesite.

The Rogue River is available for helicopters to dip water for fire suppression.

The potential for uncharacteristic stand-replacing fires in this area, along with most of the Klamath Province, has increased due to fire exclusion activities that began around the turn of the century. Historic lightning fire data within this area indicate that fires ranged from less

than an acre to more than 21,000 acres. With fire exclusion came an increase in dense vegetation in young and mature forest stands. The density of this vegetation has created ladder fuels, which have the potential to carry fire into forest canopies, increasing the risk of severe fire behavior. These types of fires make wild land fire suppression efforts difficult. The overall health of the forest has also been greatly compromised by this dense vegetation, due to the competition with trees for soil moisture.

Three factors were used to analyze fire management decisions: hazard, risk, and value. These factors are used to evaluate and set priorities for treatments while giving consideration to other management opportunities, such as wildlife habitat enhancement. Areas where all three factors were rated as high were deemed highest priority for fuels treatment.

The planning area is primarily composed of BLM lands with small blocks of non-federal lands. These lands are considered “high hazard and high risk” because of the presence of potential ignition sources and the light flashy fuels. Many of these pieces of private land have been logged in the past several years with no subsequent slash reduction treatment.

### ***Priority 1-high***

Within these areas there are few instances where all three rating factors are “high.” These include areas that received recent pre-commercial thinning (PCT) or brushing adjacent to well traveled roads, owl core areas, Critical Habitat Units (CHU) and within the Late-Successional Reserve (LSR) bordering non-federal lands.

### ***Priority 2-medium***

The second priority for fuels treatment include areas where high risk and high value overlap. In this area these consist of areas around spotted owl core areas, CHUs, lands adjacent to highly traveled roads, and heavily used recreation areas such as the Rogue River corridor, the back country byway and developed campgrounds. These areas are similar to the number one priority rating with the lack of recent PCT, brushing, or other management activities that create heavy slash loading.

### ***Priority 3-low***

The third priority for fuels treatment is where there are PCT, brushing, and other management activities not adjacent to well-traveled roads or near owl core areas and CHUs. This priority level may also include recreation use areas. The areas that have received PCT treatments exhibit a higher short-term hazard than unthinned stands of similar size and age. Generally, different stands are pre-commercially thinned each year creating new areas of high priority for hazard reduction treatments. PCT stands would fall from high priority for treatment as slash breaks down and decomposes, generally after the first three years.

## **3.6 Timber Resources**

The watershed is dominated by the Tanoak series (76%). Productivity in the watershed ranges from relatively low productivity (i.e., site classes 4 & 5 in the east and in the Wilderness Area) to higher productivity in Mule Creek (i.e., site class 3 & 4). The higher productivity in Mule Creek is due to higher levels of precipitation and richer soils. The sites with the lowest productivity, or high potential for reforestation failure, have been withdrawn from intensive timber management through the Timber Productivity and Capability Classification (see Map 13).

## ***Background***

Historically, timber harvesting has been minor to non-existent in the less productive Whiskey Creek, Big Windy Creek, Howard Creek, Horseshoe Bend, Missouri Creek and southern Kelsey Creek drainages due to low volume per acre and high road construction costs. These low productive sites are in contrast to the more productive Mule Creek drainage, where a substantial amount of timber has been removed.

Timber harvest in the last fifty years was accomplished through a variety of methods. Partial-cut and salvage harvest units are evident in the East Fork Kelsey Creek and Quail Creek drainages. Many of these units were logged during the 1970s. Typically, the harvest removed about one-third of the volume and most of the large snags. These stands are now dominated by a large conifer overstory above an undifferentiated understory of brush and conifer saplings.

Heavier partial cuts occurred primarily in East Fork Mule Creek and Mule Creek subwatersheds. The residual stands contain a sparse conifer overstory over a mixed understory composed of conifers, brush, and hardwoods.

Clearcutting practices began in the 1950s and reached their peak in the 1980s. Discrete patches were created within the older stands and were connected by a network of roads in the Mule, East Fork Mule, North Fork Kelsey, and Ditch Creek subwatersheds.

All of the old-growth timber on private land has been cut. State of Oregon lands have also harvested most of their larger trees. Recent harvest on private land has removed smaller trees left in previously logged lands and also second or third growth stands.

Partial cutting has resulted in stands frequently deficient in large snags and downed wood. In locations with a high component of live oak and madrone, low levels of snags and coarse woody debris may be a reflection of natural conditions.

### ***Proposed Area of Critical Environmental Concern***

A portion of the East Fork Whiskey Creek subwatershed is currently designated General Forest Management Area and a portion Late-successional Reserve (Table 2-1). Much of the area is currently withdrawn from the timber base (Appendix 10, Map A10-3a, & Map A10-3b) because of several factors including riparian zones, Spotted Owl Core areas, and soils and slope limiting factors. There is only one unit (9 acres) that is early seral. This unit received brushing and release treatment in 2001. Several clearcuts occurred historically, along the edges of the East Fork Whiskey Creek subwatershed and are of various ages, with a few clearcuts within the boundaries of the subwatershed.

## **3.7 Late-Successional Habitat**

Late-Successional Habitat is defined here as late-successional forest that provides habitat for late successional species. For analysis purposes, stands modified by partial-cut harvesting where previous entry has occurred were generally not included as late-successional habitat. Late-successional habitat is widespread and generally abundant within the planning area. All major drainages, including the previously entered drainages of Kelsey, Whiskey, and Mule Creeks, as well as along the Rogue River, contain substantial amounts of old-growth forest, which is defined as at least 10 percent stocked with trees of 200 years or older and 10 acres or more in size.

Taking into account factors such as degree of canopy layering, canopy closure, size of trees, and species composition, approximately 52,216 acres of late-successional habitat occur in the planning area. These areas provide available and functional habitat for spotted owl. Life requirements are met for nesting, foraging roosting and dispersal, with canopies multilayered and closure greater than 60 percent, or in more open areas where flight is possible, with canopy possibly single layered and closure also greater than 60 percent.

Many large intact blocks of late-successional seral stage (Table 3-3) exist within the watershed, with old-growth patches ranging from 20 acres to over 2,000 acres of continuous habitat. The extent of late-successional forest is so widely distributed it may be more meaningful to consider the entire northern portion of the watershed as a large area of interior forest, with some minor fragmentation effects in portions of the Kelsey Creek and East Fork Mule Creek subwatershed. Within the 97 square miles of the northern portion of the planning area, approximately 22 square miles are predominately in early seral stages.

Late-successional habitat within the northern portion of the planning area appears to be well distributed. Even where previous timber harvest has occurred, there are bands of older forest remaining, including along Whisky, Kelsey, and Mule Creeks. Whisky Creek contains old-growth bands along most of its length and mature forest where old-growth is not present. Kelsey Creek provides mature forest habitat along most of its length, although portions of it traverses through a naturally young stand. Through a portion of the area around Mule Creek was heavily logged, a band of old-growth habitat remains along the main stem of Mule Creek and East Fork Mule Creek.

The planning area includes the northern part of the Galice Late-Successional Reserve (#OR-258) (LSR) a portion of the Fishhook/Galice LSR, the largest LSR in southwest Oregon. It is in the most suitable condition (USDA/USDI 1995) of any of the LSRs, with 60 percent of BLM acreage currently in late-successional habitat. The Southwest Oregon LSR Assessment (1995) indicates that approximately 47 percent of the entire LSR is currently late-successional habitat. Approximately 60% of BLM lands are in older forest, approaching the desired LSR objective of 70% in late-successional forest (Map 9).

Thousands of species are dependent upon late-successional forests for their continued survival, including a very broad range of vertebrates, invertebrates, fungi, and molluscs (FEMAT 1993). For many species, large blocks of unfragmented habitat are especially important for survival because they provide habitat buffered from manipulated areas. A more detailed description of source population habitat can be found in the Wild Rogue North Watershed Analysis (1999)

### **3.7.1 Late-Successional Habitat and Natural Disturbances**

Late-successional habitat in this area is strongly influenced by fire (see Fire History above). Some low elevation stands have developed dense and overstocked tree understories. This density, combined with drought, has increased water stress on the older overstory trees. Also, on high fire risk areas stocked with a high proportion of pine or fir, it is suspected bark beetles have been killing trees at an increased rate. High stocking levels have increased fuel loading, especially in the plant associations which historically had frequent low and moderate intensity fires. Partial cuts in East Fork Kelsey Creek and Quail Creek areas have substantially increased the brush component, placing these areas at greater risk of stand replacement fire. Past clear cutting in the areas of Mule Creek, East Fork Mule Creek and North Fork Kelsey Creek has created additional risk of stand replacement fires through both brush invasion and new young plantations. This places older forest habitats at a greater risk to stand replacement fire.

Forest diseases do not appear to be affecting large areas within this watershed. Black stain, Swiss needle cast and white pine blister rust can eliminate trees which then creates natural openings of various sizes and shapes in isolated areas. Blister rust has the greatest potential to affect habitat. White Pine Blister Rust is present within the East Fork Whiskey Creek subwatershed. Surveys for other pests or disease have not been initiated or completed. Other natural disturbances such as windthrow are more evident near ridges of mountains and in areas with deep soils.

### 3.7.2 Connectivity

There are two fully functioning connectivity blocks within the planning area, located in T32S, R9W, section 17, and T33S, R8W, section 9 (Map #3). Section 17 has approximately 60 percent of habitat in old-growth forest. Section 9 has approximately 80 percent in mature or old-growth condition.

Habitat connectivity facilitates movement and genetic exchange between individuals of species. Late-successional connectivity for wide-ranging small mammals, including the fisher, and for more mobile species including the northern spotted owl is important for this area. The role it may play in connectivity at the provincial scale is underscored by the concepts underpinning the NFP. Specifically, it was intended that the two ranges, the Klamath/Coast Range, and the Cascades would be joined (and subsequently encourage population exchange) by the Siskiyou mountains (USDA/USDI 1998).

There are two areas of interest for connectivity to other watersheds. The first of these two areas includes the northeastern portion of the analysis area, including the East Fork Kelsey Creek and West Whiskey Creek subwatersheds, intended to link the Galice/Fish Hook LSR eastward into East and West Forks Whiskey Creek and the portions of the Grave Creek watershed identified for connectivity (USDI 1999a) to the LSR to the east, the Galesville/South Umpqua LSR (Map 11). The second of these two connectivity bands is located in the northern portion of the analysis area, including the North Fork Kelsey Creek and Kelsey Creek subwatersheds, intended to link the Galice/Fish Hook LSR to the Bobby Creek Research Natural Area to the north. The Southwest Oregon Late-Successional Reserve (LSR) Assessment (1995) notes that the Fishhook/Galice LSR provides an east/west older forest link connecting the coastal mountains across the Rogue Valley to the Rogue-Umpqua divide and the Cascade Province. The Grave Creek, West Fork and Middle Fork Cow Creek watersheds to the east and north consist of a checkerboard pattern of public-private ownership in which late-successional habitat is substantially reduced. The extensive mature and old-growth component of the planning area is important in providing many source populations to adjacent areas which have been previously harvested on both public and private land.

It appears that those animals which depend upon late-successional habitat to successfully migrate and interbreed with other populations beyond this watershed can move in a generally east-northeast direction through well-connected late-successional habitats of the LSR and Matrix in the project area. The late-successional habitat connection from the LSR into Matrix lands within the planning area largely occurs along upper Whiskey Creek, and in T33S, R8W sections 11,12,13, and 14. These sections currently contain approximately 25 percent old-growth (>200 yrs.), 25 percent late mature (151-200 yrs.), 30 percent early mature, 15 percent pole, and 5 percent early and mid-seral forested habitat.

The extreme northwest portion of the planning area includes the Wild Rogue Wilderness, estimated to have 30 percent older forest. The area to the west of the action area includes the Northwest Coast Late-Successional Reserve within the Siskiyou National Forest. The Wilderness Area probably provides some connection to the adjoining Northwest Coast LSR, which is managed for late seral conditions, and currently has many linkages of older forest habitat (USDA and USDI 1995). Connectivity to the west appears to be largely functional.

### 3.7.3 Snags and coarse woody material

Existing numbers of snags and coarse woody debris, key components of late-successional forest habitat, appear to be below RMP standards in portions of the planning area. A field review of snag and coarse woody debris conditions in East Fork Kelsey Creek and Kelsey Creek also indicated low levels of both of these components compared to RMP standards. Both of these two areas are relatively unentered.

### 3.7.4 Survey and Manage Animal Species

#### *Red Tree Voles*

Red tree voles are a Survey and Manage species and generally occur in forested stands older than 40 years, with old-growth appearing to provide optimum habitat because of its function both as a climatic buffer and with its high water-holding capacity which maximizes food availability and free water (Gillesberg and Carey 1991). Limited surveys for this species have been conducted within the watershed, primarily in the area of the Cold Mule timber sale. Currently it is estimated that 38,010 acres of suitable red tree vole habitat are present within the watershed.

#### *Great Gray Owls*

Great gray owls are a survey and manage species in the NFP. They are uncommon and associated with conifer forest adjacent to meadows. There are about 300 acres of suitable meadow habitat in the northwest portion of the planning area. While there was an unconfirmed detection of this species near Big Meadow in the mid-1990s, this meadow complex was surveyed to protocol in 1998 and 1999, with no detections of great gray owls.

#### *Molluscs*

Under the Survey and Manage SEIS, there are two species of terrestrial mollusc which are suspected to occur in the planning area, the Oregon shoulderband snail and the Chace sideband snail. The Oregon shoulderband frequents both rocky areas and hardwood stands. The Chace sideband is known to use talus areas and moist late-successional forests. No Survey and Manage aquatic mollusc species are known or suspected to occur within the watershed.

#### *Del Norte Salamanders*

Del Norte salamanders were identified as a Survey and Manage species in the NFP. Under the Survey and Manage SEIS they are in category D1, which means that high priority sites require protection, but no pre-disturbance surveys are required. All known sites are currently required to be protected until high priority sites have been established. They have been found in the watershed, but do not fall into project area units or areas identified for treatment. Based on soil information, vegetative characteristics, and rainfall it is suspected that they are widely distributed across the watershed.

## 3.8 Special and Unique Habitats

Special or unique habitats include meadows, cliffs, springs, caves and other habitat features. They account for a small amount of the total land base, but are important as wildlife habitat and are often highly fragile. Meadows are also uncommon in the planning area, and so are included in this category.

Two small meadows are located near the north edge near Anaktuvuk Saddle and have been burned to improve forage conditions. Two other meadows are located near the Big Meadows area. One is called Bald Ridge and is characterized by large erosion gullies and slump fractures. The other is a similar meadow on a ridge between Quail Creek and Ditch Creek.

There are widely scattered springs and a few man-made ponds and pump chances which provide habitat for waterfowl, reptiles, amphibians, and invertebrates.

Large areas of cliff and rock outcrop habitat occur within the Wilderness and along the Rogue River. These areas provide potential habitat for many unique wildlife species, including the peregrine falcon, and the golden eagle. There is currently one known peregrine falcon eyrie in the southeast sector of the watershed. There is one known golden eagle nest in cliff habitat along the Rogue River (USDA/USDI 1995).

## 3.9 Wildlife

### 3.9.1 Threatened, Endangered and Other Species of Concern

Special status species in the planning area are listed in Appendix 8 and include several classifications, among which are:

- Federally Threatened or Endangered species which are listed under the Endangered Species Act.
- Protection Buffer and Survey and Manage Species, which include those species identified in the Northwest Forest Plan and the Medford District Resource Management Plan as needing special consideration due to their association with late-successional habitat.
- Bureau Sensitive species, those species which the Bureau of Land Management considers to be of concern and which may have the potential in the future to become federally listed.
- Bureau Assessment species, those species considered as important to monitor and manage to prevent elevation of status to a higher level of concern.
- Species identified by the state of Oregon as warranting special attention, either through listing under the Oregon Endangered Species Act, or identified as an Oregon Special Status Species
- Neotropical Migratory Landbirds, those bird species which winter south of the Tropic of Cancer and breed in North America, many of which are in decline.

There are at least 60 potential sensitive species of wildlife in the watershed. The four species listed as threatened are discussed in detail in the following sections.

### 3.9.1.1 Northern Spotted Owls

Northern spotted owls are currently listed as a threatened species under the Endangered Species Act. A decrease in the habitat for spotted owls, as a result of timber harvest of mature and old-growth forests was the primary reason for listing (USDI 1994). Spotted owls nest in cavities or platforms in stands of mature or old-growth forest with high levels of canopy closure.

There are a total of 28 owl activity centers in the watershed, 13 north of the Rogue River and 15 south of the river. Activity centers in the LSR are part of the long term management strategy for owls in the Northwest Forest Plan. The remaining that occur in the Matrix are not part of the long term strategy and will be subject to habitat removal over time. An activity center is considered viable if there is at least 40 percent of the area within a 1.3 mile radius in a suitable habitat condition. Suitable habitat generally consists of stands with trees greater than 21" dbh with 60 percent or greater canopy closure. In this watershed, 15 of the 28 activity centers are in viable condition, indicating a relatively healthy late-successional condition, of twelve of the viable activity centers north of the Rogue River.

There are approximately 52,216 acres of suitable nesting, roosting, or foraging habitat for northern spotted owls in the planning area (Map 10), or 50 percent of the watershed. The percentage of suitable habitat in the north portion of the watershed is considerably greater than in the south, with approximately 66 percent of the land in suitable owl habitat condition.

Critical habitat for the northern spotted owl is a legal designation under the Endangered Species Act. This watershed includes northern spotted owl Critical Habitat Units (CHUs) #OR-65 and #OR-67 (Map 11). OR-65 consists of approximately 9,630 acres, located in the eastern part of the planning area. Most of OR-65 is within Late-successional Reserve but the remainder is found on General Forest Management Area land in the northeastern portion of the planning area. Specifically, this area includes T32S, R9W, sections 1, 12, and 13; and T33S, R8W, sections 4, 5, 6, 7, 8, 9 and 14.

Within critical habitat unit #OR-65 there are a total of 3,093 acres in Riparian Reserves, 317 acres in owl cores, and 1,984 acres in TPCC withdrawn lands, for a total of 5,394 acres, or 56 percent of the CHU being unavailable for scheduled timber harvest. The other 3,235 acres are currently available for harvest, or 44 percent.

Only a small portion of Critical Habitat Unit #OR-67 overlaps the northwest part of the planning area. It is immediately east of the Wilderness Area with two additional small sections at the western boundary.

#### ***Proposed Area of Critical Environmental Concern***

The East Fork Whisky Creek subwatershed has several high wildlife habitat values due to the large amount of undisturbed and unfragmented old growth conifer forest, the high quality riparian zones, and the range of elevation. Several important wildlife species have been observed in the area including the federally threatened Northern Spotted Owl. There is currently one nesting pair (One 4 All, see Table 4-14) of spotted owls within the East Fork Whisky Creek subwatershed. In addition, habitat potential exists for additional species which have been observed in and immediately south of the subwatershed such as the peregrine falcon, bald eagle (Federal Threatened), and townsend's big-eared bat (Bureau sensitive and species of concern).



**LEGEND**

- Federal Land Use Allocations**
- Adaptive Management Area
  - Administratively Withdrawn
  - Congressionally Withdrawn
  - Late Successional Reserve
  - Riparian Reserve / Matrix
  - Kelsey Whiskey EIS Planning Area

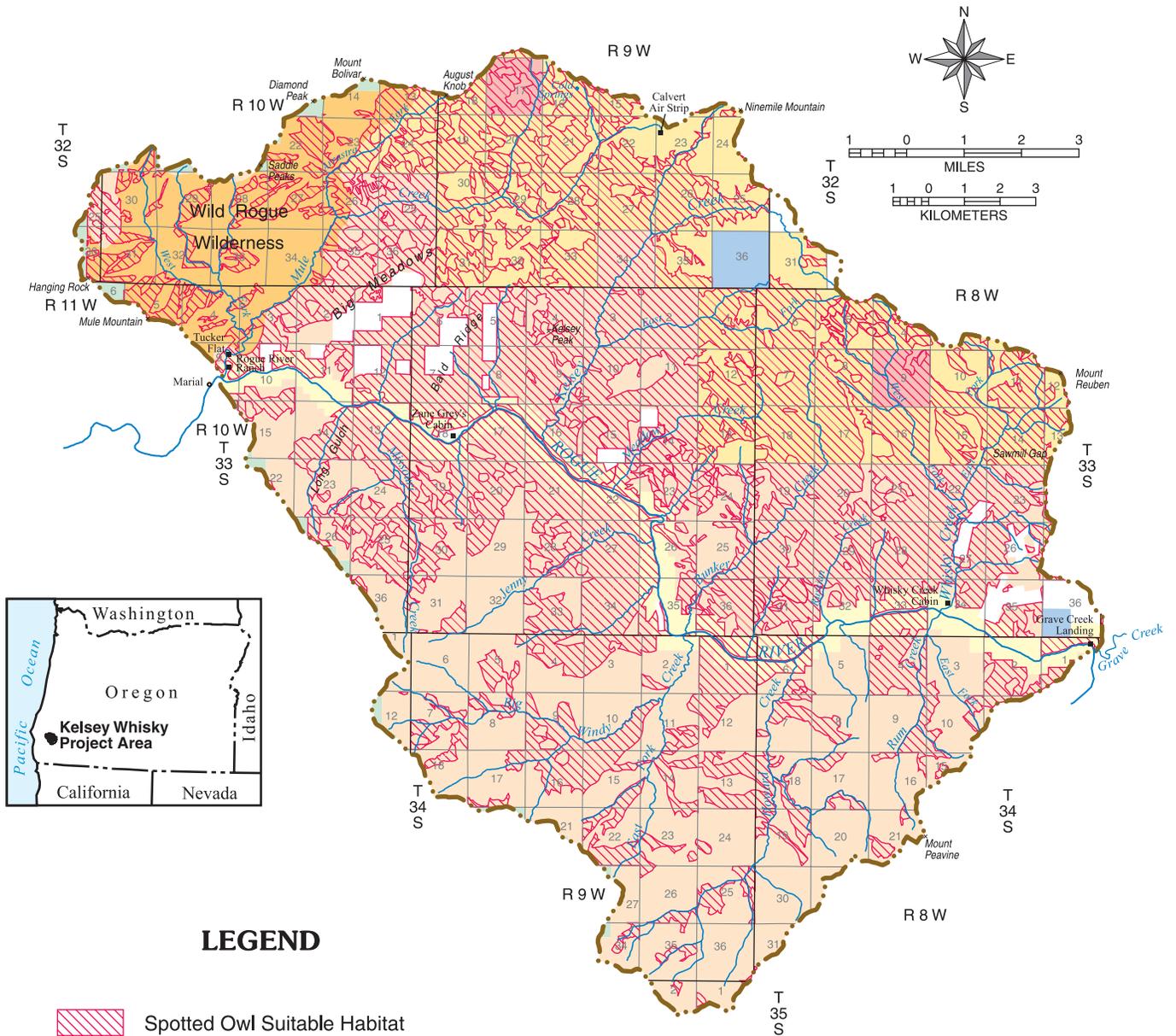
U.S. DEPARTMENT OF THE INTERIOR  
 Bureau of Land Management  
**MEDFORD DISTRICT**  
 2003



**KELSEY WHISKY  
 ENVIRONMENTAL IMPACT STATEMENT**

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**Map 9:** Planning Area in Relation to Other LSRs



**LEGEND**

-  Spotted Owl Suitable Habitat
- Land Status**
-  Bureau of Land Management Wild Rogue Wilderness
-  Rogue Wild and Scenic River Corridor
-  Connectivity / Diversity Block
-  Late Successional Reserve
-  General Forest Management Area
-  U.S. Forest Service
-  State of Oregon
-  Private
-  Kelsey Whisky EIS Planning Area Boundary

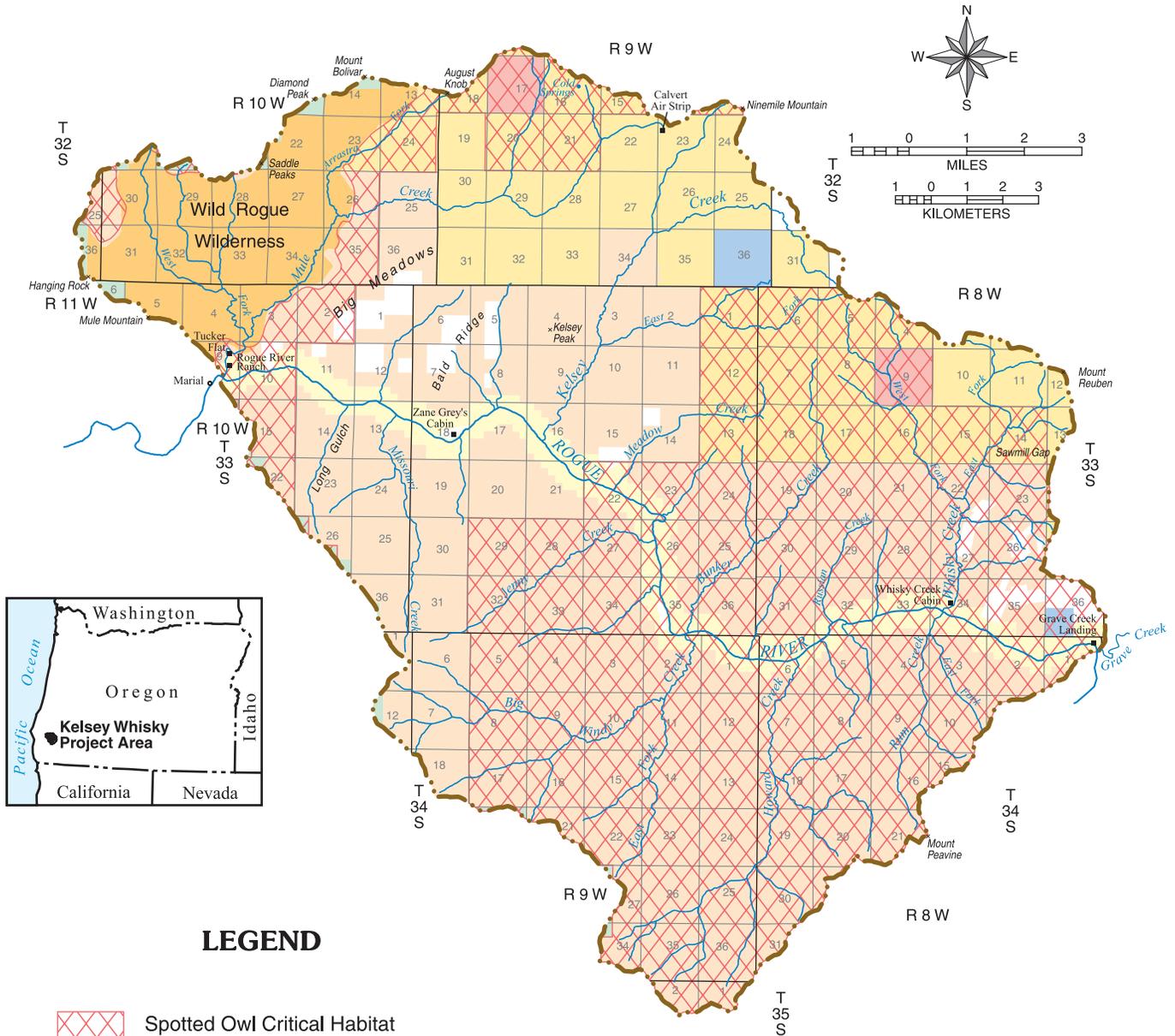
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**Map 10: Spotted Owl Suitable Habitat**



**LEGEND**

- Spotted Owl Critical Habitat
- Land Status**
- Bureau of Land Management Wild Rogue Wilderness
- Bureau of Land Management Rogue Wild and Scenic River Corridor
- Connectivity / Diversity Block
- Late Successional Reserve
- General Forest Management Area
- U.S. Forest Service
- State of Oregon
- Private
- Kelsey Whiskey EIS Planning Area Boundary

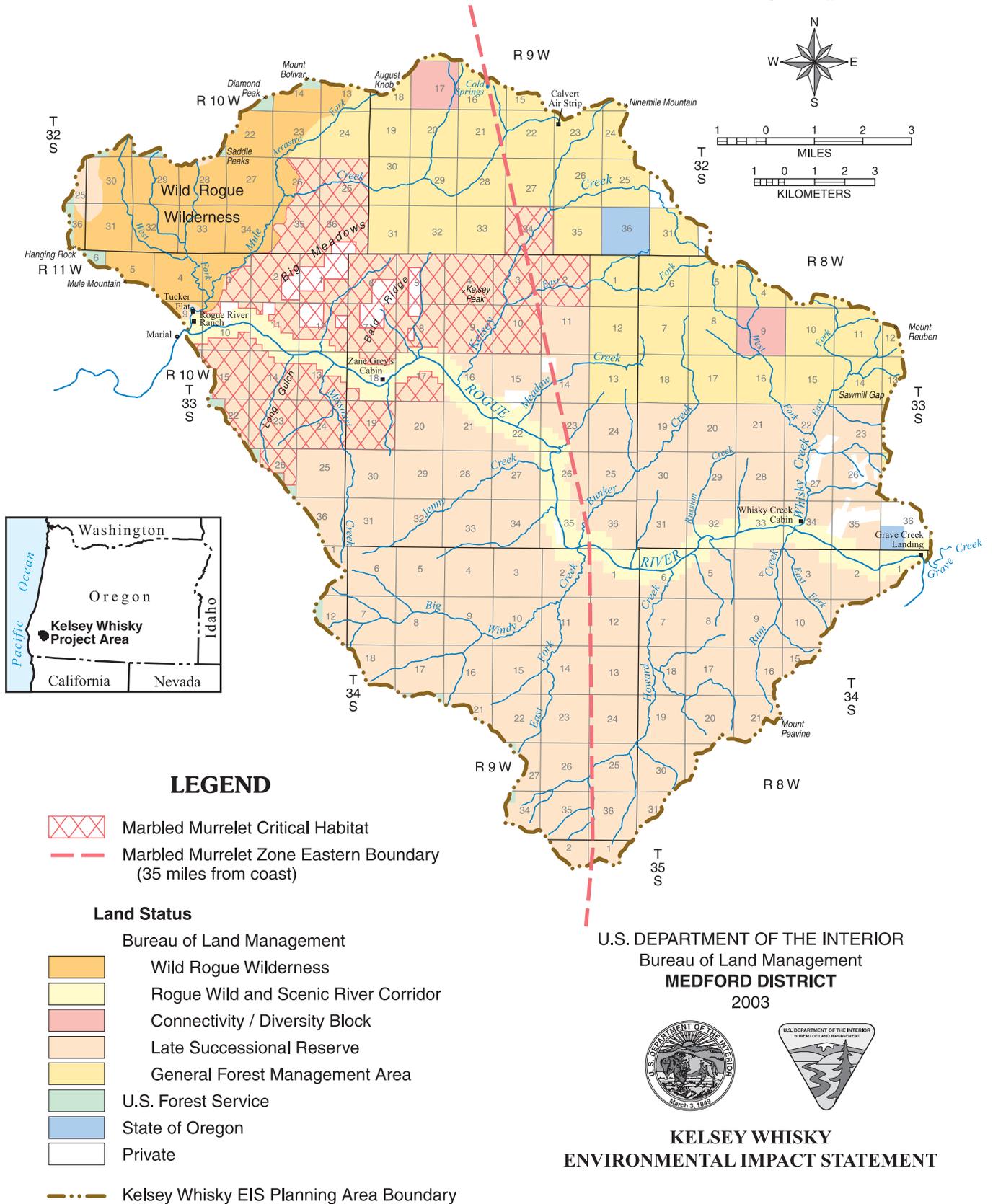
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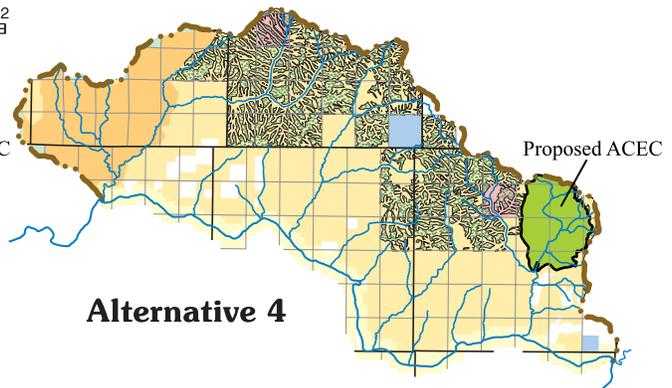
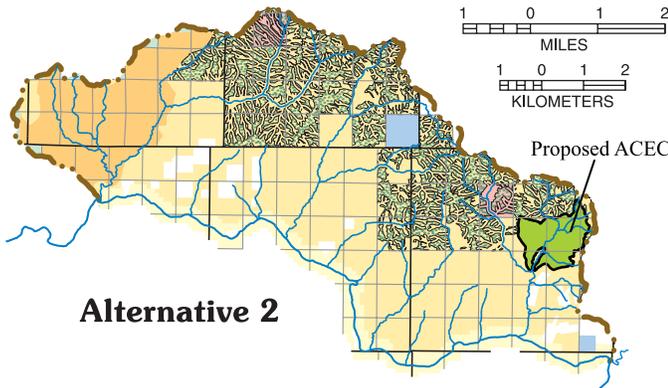
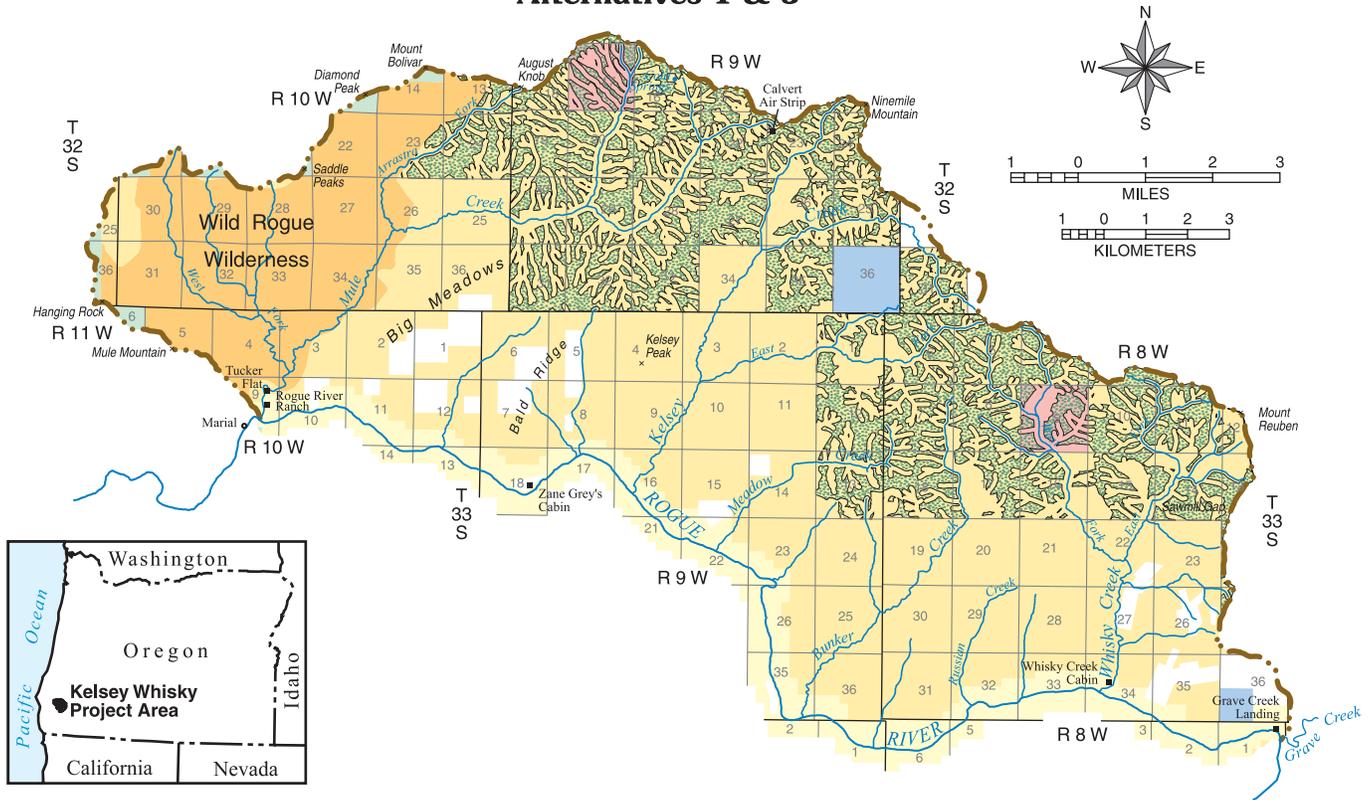
**Map 11: Spotted Owl Critical Habitat**



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**Map 12: Marbled Murrelet Critical Habitat**

### Alternatives 1 & 3



### LEGEND

-  Net Available Matrix Land
  -  Connectivity / Diversity Block
  -  Kelsey Whiskey EIS Planning Area Boundary
- Land Status**
-  Bureau of Land Management
  -  Wilderness
  -  Wild and Scenic River Corridor
  -  U.S. Forest Service
  -  State of Oregon
  -  Private

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**Map 13:** Net Available Matrix Land

### 3.9.1.2 Marbled Murrelets

Marbled murrelets, a federally threatened species, use inland forested sites for nesting. They nest exclusively in trees, typically in late-successional forest with greater than 60 percent canopy closure, within about 35 miles of the Coast. In southwest Oregon, no murrelets have been found east of this 35-mile line. Since 1995, there have been over 600 survey visits for marbled murrelets within the watershed, with no confirmed detections. This is not unexpected, since studies by the Siskiyou National Forest strongly suggest that in this part of southern Oregon, murrelets typically do not fly beyond the first major coastal ridge, about 12 miles from the coast, south of the Elk/Coquille drainages (USDA and USDI. 2000c).

Critical habitat for the marbled murrelet was designated in May, 1996, and includes CHU #OR-07-F within the analysis area (Map 12). Portions of the watershed are considered critical marbled murrelet habitat because they occur within 35 miles from the coast. The CHU lies entirely within the Late-Successional Reserves within 35 miles of the coast, and comprises approximately 14,253 acres within the watershed.

### 3.9.1.3 Bald Eagles

Bald eagles are a federally threatened species and have recently been proposed for de-listing. Suitable bald eagle habitat in the watershed occurs primarily along the Rogue River and many of the side drainages, including Whisky and Kelsey Creeks. There is one active nest within a few miles of the confluence of the Rogue River and Whisky Creek. Preferred nesting habitat usually consists of older forests near water, with minimal human disturbance.

### 3.9.1.4 Southern Oregon/Northern California Coho Salmon

SO/NC coho have been listed as threatened under the Endangered Species Act. Of about 51 miles of streams in the planning area that are accessible to Southern Oregon/Northern California coho salmon, an estimated 16 miles of habitat are north of the Rogue River in the Glendale Resource Area. Most habitat is marginally suitable for the species because of moderate to steep gradient, poor quality spawning and off-channel rearing habitat and natural barriers. Although habitat is generally in properly functioning condition (USDA/NOAA, 1996), sediment may be limiting production potential in most streams. Sediment sources are most likely both natural and human-caused. Mileages in Table 3-4 are estimates of the possible upper limit of the species distribution and are based on Oregon Department of Fish and Wildlife habitat survey data (ODFW 1998, 1999).

### 3.9.1.5 Other Species of Concern

Northwestern pond turtles, a species of concern, have not been observed using the watershed's small ponds, but are frequently observed along many sections of the Rogue River, where there are slow-moving river sections. Pond turtles were petitioned for listing under the Endangered Species Act in 1992 but have not been listed to date.

Tailed frogs, a species of concern, have been located in the planning area. This amphibian species, thought to be confined to turbulent streams in late-successional forest, is considered to be a potential for listing, with very low recruitment rates compared to other frogs, as well as a longer generation time.

This watershed lies within the Pacific Flyway, utilized by a wide variety of migratory birds. Waterfowl are likely to occur along the Rogue River, including species of concern such as the Harlequin duck, which uses fast-flowing water.

**Table 3-4. Streams and estimated distance of fish presence for coho salmon and steelhead, within the Kelsey Whiskey Planning Area.**

Stream Name	Miles of Coho	Miles of Steelhead
Arrasta Fork Mule Creek	0	1.2
East Fork Big Windy Creek	0.6	1.7
East Fork Whiskey Creek	2.1	2.1
Howard Creek	4.6	3.1
Kelsey Creek	2.6	2.6
Mule Creek	4.3	9.9
Rogue River	20.0	20.0
West Fork Mule Creek	1.4	2.6
West Fork Whiskey Creek	2.5	2.5
Whiskey Creek	2.3	2.3
Anna Creek	----	1.4
Booze Creek	----	.5
Bronco Creek	----	.1
Bunker Creek	----	1.2
Ditch Creek	----	.3
East Fork Kelsey	0.5	2.4
Hewitt Creek	----	.5
Jenny Creek	----	.3
Little Windy Creek	----	.7
Long Gulch	----	.6
Meadow Creek	----	.9
Missouri Creek	----	1.2
Wildcat Creek	----	.2
Rum Creek	----	.5
Russian Creek	----	.3

### 3.9.2 Other Wildlife Species

The Oregon Department of Fish and Wildlife (1993) notes that the relatively small Klamath Province supports the highest number of vertebrate species of any province in Oregon.

#### 3.9.2.1 Game Animals

There is historical information which indicates that in the late 1800s and early 1900s, elk and deer were abundant in the vicinity of Illahe (USDA 1938) and were frequently harvested not only for meat, but also for hides. This report cited information which indicated that hide hunters were driven from the area by the early settlers, who depended upon elk and deer for food. Bald Ridge and Ninemile were cited in this report as historical locations where elk had occurred.

Several meadows in the watershed provide habitat for elk. Big Meadows, as mentioned earlier, is a 200-acre opening in private ownership located near the divide between East Fork Mule Creek and the Rogue River.

The Mule Creek area was identified as a priority for elk management in cooperation with the Oregon Department of Fish and Wildlife (ODFW). This drainage was analyzed for elk habitat suitability using the Wisdom elk model (Wisdom et al 1985), which assesses habitat

effectiveness indices. The analysis indicated spacing, forage, and road density were all very low, while the cover index was a bit higher. That information led to efforts in the late 1980s and early 1990s to increase available forage through burning and seeding clearcuts. In addition, a major road management plan was instituted, resulting in motor vehicle road closures on approximately 32 miles of road. Prior to the road closures, the Mule Creek drainage had an open road density of 4.6 miles of road per square mile. Following road closures, the open road density dropped to 1.8 miles of road per square mile, close to the ODFW recommendations of no more than 1.6 miles of road per square mile for elk management. Following road closure, 500 native brush and shrub seedlings were planted along closed road beds and cut banks to improve foraging opportunities.

Black bears are believed to be relatively abundant throughout the analysis area, primarily due to large blocks of undisturbed habitat, proximity to the Rogue River, and large areas with low road densities. Bears were evidently abundant in the watershed at the turn of the century, according to an interview with Wallace Rondeau, who lived in the area in the early 1900s (Shaffer 1983). According to the Oregon Dept. of Fish and Wildlife (M. Wolfer, pers. comm.), black bear densities in the analysis area probably exceed one per square mile. A 1987 report (ODFW 1987) notes that the heaviest bear densities in the state occur in southwestern Oregon. All lands within one mile of the river are closed to black bear hunting.

Mountain lions are thought to be common in the analysis area. A historic report by Siskiyou National Forest refers to a large cougar population in the watershed (USDA 1925).

### 3.9.2.2 Other Animal Species

American martens, a member of the weasel family, are considered to be indicator species of old-growth habitats in Oregon, where they are closely tied to large quantities of standing and downed snags and coarse woody debris, often near streams (Jones and Raphael 1990). They select dense cover extending above the snow, and in winter they utilize tunnels to access the area below snow level. They have been documented in the late-successional reserves of southwestern Oregon (USDA/USDI 1995). Fishers, also a medium-sized member of the weasel family, are a rare carnivore associated with dense, mature, and old-growth forest stands (Powell 1982), and adults are associated with large habitat blocks. Fishers are known to use riparian areas as travel corridors in both winter and summer (Jones 1991). Resting sites in California have been found to be associated with snags and abundant downed logs (Buck et al. 1983), and natal sites have been found in cavities of live or dead trees (Banci 1989). A fisher was observed in the watershed in 1996 by a BLM biologist, in the southern sector in the vicinity of the Galice access road.

Ringtails, an uncommon cat-sized nocturnal mammal, are known to occur in southwest Oregon, with the Klamath Province identified as their center of abundance in the state (ODFW 1993). With extensive rocky terrain and abundant tanoak, this area is believed to support a healthy ringtail population. These nocturnal mammals have been spotted several times along the Rogue River and the Galice Creek road in the eastern portion of the watershed.

### 3.9.3 Fisheries

Fish distribution in the analysis area is poorly known due to the area's inaccessibility. Mileages in Table 3-4 are estimates of the possible upper limit of both species distribution and are based on Oregon Department of Fish and Wildlife habitat survey data. High stream gradient limits the suitability of most of Mule, Whisky, and Kelsey Creeks for ESA-listed southern Oregon/northern California coho salmon (Table 3-4). Twenty miles of the Rogue River in the analysis area supports a large number of fish species (USDI, 1999a).

Mule Creek, Kelsey Creek, and Whiskey Creek, the primary fish-bearing streams in the Planning Area, are functioning properly overall, although some factors such as sediment limit stream productivity. Sources of streambed sediment in Mule Creek, Kelsey Creek and Whiskey Creek are roads, naturally unstable soils and, to a lesser extent in Whiskey Creek a small scale placer mining claim. Degraded substrate has negative implications for fish spawning success and winter refugia, as well as for aquatic macroinvertebrate community composition and abundance.

High road density and associated increase in the drainage network through road ditch lines in some portions of the Mule Creek and Kelsey Creek watersheds have potential for influencing timing and magnitude of peak flows but indicator factors like streambank stability and gravel accumulation in low gradient reaches suggests that it is not currently a problem. Road density in most of the 7th field HUC's in the project area is quite low (USDI 1999b, p.11, Table 3).

Riparian habitat on nearly all fish-bearing streams in the planning area is largely undisturbed by roads and timber harvest. The amount of riparian habitat that has been directly affected by historic and current placer mining activities is minimal.

Riparian connectivity is relatively high, ranging from 70 to 98% (USDI 1999b, Table 17) greater than 80 years of age (the age at which late successional characteristics begin to appear). Acres in this condition will continue to increase since they are protected from future timber harvest under the Northwest Forest Plan. High riparian connectivity favors not only aquatic organisms and processes but also terrestrial plants and animals that use these areas as travel corridors.

Although maximum summer water temperatures in Mule and Whiskey Creeks exceed state standards, the condition reflects natural conditions (USDI 1999b, p.20-23). There is only limited data for other streams due to their remote locations and general inaccessibility. However, based on the general lack of land management activities in all or the majority of their watersheds and high degree of late seral connectivity of Riparian Reserves, it is believed that water temperatures in all subwatersheds are well within the range of natural variability.

Refer to the Wild Rogue North Watershed Analysis (USDI 1999b) for additional information on stream and watershed conditions.

## 3.10 Roads/Transportation System

Virtually all the roads north of the Rogue River were originally constructed to provide access for timber harvest or fire control. Some roads were constructed to provide access to private lands, especially along the Rogue River, or for recreational access to the river. Road density analysis within the 5th field watershed is described in the Wild Rogue North Watershed Analysis. Road density can be used to measure drainage alteration and increase of intermittent stream channels created by a variety of existing road prisms that interrupt the landscape. The East Fork Whiskey Creek subwatershed has only one road extending partially into it. This unroaded character has remained relatively undisturbed by timber harvest and is seemingly wild and natural.

Road information analyzed at the subwatershed level show that the area most heavily affected and of greatest management concern is the Mule Creek drainage. Information has been analyzed at the sixth-field watershed level and shows high road densities in the area. Most road construction and harvest activities occurred in the late 1980s. Spur roads to harvest units were generally not surfaced. These roads are showing more erosion than in other drainages due to lack of surfacing and lack of maintenance.

Three primary routes provide major access to the Kelsey Whisky EIS area. The Mt. Reuben road, Bobby Access Road, and Dutch Henry road. All of these roads have been used for log hauling. The Mt. Reuben road is the oldest route, which was improved from its origins as a primitive route to Marial. The Dutch Henry road was the first major log haul route from Kelsey Mule road to Glendale. The Bobby Access road was constructed by the United States Federal Highway Administration as a more direct route for log haul to Riddle. Since log hauling has declined sharply, these roads now provide some redundancy of access.

Road maintenance is conducted by the different land owners and management agencies. BLM maintenance levels range from minimal standards on short spur roads to high standards on main access roads. The goal is to provide a transportation system for various recreational activities, private access, logging, fire fighting access, and other land management uses.

Roads maintained at a high level in previous years are not being maintained to that extent any longer (cf. section 1.1.4). To reduce maintenance requirements and erosion potential, some un-needed roads have been decommissioned. Other roads are gated or blocked until future access is needed and many others are maintained at the lowest possible levels. BLM roads have a maintenance level assigned to them as a guide for the amount and frequency maintenance should be performed (Appendix 3). Roads are monitored and maintenance levels are modified when needs and conditions change. Most roads, primarily old logging roads, were originally constructed with single lanes with turnouts with a ditch on the inside, and cross drain and bottom lay culverts installed to facilitate drainage.

BLM roads are generally open for public use unless blocked by gates or other methods. Gates and other road barriers regulate vehicle access to reduce maintenance costs, soil erosion, transfer of noxious weeds, and wildlife disturbance. Non-federal roads in the area generally are not surfaced, but are frequently maintained to provide seasonal access to homes in the area and for timber management. Roads with existing reciprocal rights-of-way are listed in Table 3-6.

Many spur roads in the area have ditch lines that are partially or completely filled with slough from cut slopes. Many cross drain culverts are partially or completely blocked with sediment from ditch lines. In the Kelsey Whisky area very few of the roads were constructed with water dips. Most road surfaces, however, are not badly scoured or rutted, and most spur roads are free from major slides or debris blocking the roads. See section 3.9.3 for a discussion of roads and fisheries.

Paved roads and through roads (Table 3-5) are generally maintained for more user comfort and convenience and to connect major administrative features. Paved roads provide a higher volume of commercial and recreational traffic than administrative traffic. The entire roadway is maintained at least annually. Maintenance problems are repaired as they are discovered. The life of a paved road without re-sealing is about 15 years but can vary, depending on the amount of hauling occurring on the road. Natural weathering processes also deplete paved roads, such as frost heave, summer heat, dilution by rain water and break up due to over growth along the road way. The reciprocal rights-of-way roads in the project area are identified in Table 3-6.

There are developed sources in the watershed where water may be acquired for use on the roads. Some water sources are in need of improvement to increase water supply for both wildlife and road maintenance needs. Water is used when placing surface rock and for road maintenance, which permits proper processing of the road surfacing material.

### ***Proposed Area of Critical Environmental Concern***

Currently there is one road, (34-8-1) that borders the proposed East Fork Whisky Creek RNA/ ACEC along the eastern and northeastern boundary. This is a gravel surfaced road. Two more roads, which are natural surfaced, are currently being considered for decommissioning. These

**Table 3-5. Pave Roads in the Kelsey Whisky Project Area.**

Road Name	Road Number	Miles	Remarks
Cow Creek Road	33-7-2	11.06	Mainline road – Through route
Cow Creek Road	30-6-32	0.29	Mainline road – Through route
Mt. Reuben Road	34-8-1	4.40	Back Country Byway – Surface protection
West Fork Cow Creek	32-8-1.1	3.9	Mainline road – Through route
Bobby Creek Access	32-8-9.2	6.65	Through route
Calvert air strip		0.32	Emergency use – Fire
Kelsey Mule	32-8-31	5.10	Through route
Marial	32-9-14.2	4.10	Back Country Byway’
Dutch Henry	32-7-19.3	8.42	Through route

**Table 3-6. Reciprocal Right-of-Way in the Kelsey Whisky Planning Area.**

Right of Way Number	Road Number	Location *	Right of Way Holder
870	31-9-35	T31S,R9W	Larry Brown Timber
605		T32S,R8W,sec30	Superior Lumber
605A		T32S,R8W,sec31,32	Roseburg Resources
700		T32S,R8W,sec31	Roseburg Resources
870	32-8-31, 32-8-24	T32S,R8W	Larry Brown Timber
605		T32S,R9W,sec13-35	Superior Lumber
870	32-9-14.2	T32S,R9W	Larry Brown Timber
605		T32S, R10W, sec11-14,22-8,33-36	Superior Lumber
441		T33S,R9W,sec7	K&C Lumber
605		T33S,R9W,sec1-16,18,22-26,35,36	Larry Brown Timber
605		T33S,R10W,sec1-3,10-12	Superior Lumber
870	34-8-1	T34S,R8W	Larry Brown Timber

\*(T=township, R=range, sec=section, S=south, W=west)

are ridge top roads that are grown in and no longer passable by vehicles (33-8-23 and 33-8-11.1). There is a trail or fire access route on the ridge top between the east and west forks of Whisky Creek.

## 3.11 Social Environment

### 3.11.1 Rural interface

Private parcels within the planning area range in size from about 20 to more than 300 acres. Most of these are clustered near Marial, west of Kelsey Creek. Exceptions are mining claims in the Whisky Creek drainage, Black Bar Lodge and two parcels in the Meadow Creek

Drainage. Many of the private parcels within the planning area are actively managed for timber or mineral extraction with entries occurring within the last 5 years.

There are nine residential structures on private land within the planning area, including three within the river corridor. About half of these structures are occupied on a year-round basis and Black Bar Lodge is a commercial enterprise. All are currently surrounded by public land, managed as a Late-Successional Reserve and most are within an area classified as possibly seen from the Wild and Scenic River corridor, implying probable limitations on management actions on Federal lands in the surrounding area. None of these parcels were identified as Rural Interface Areas in the Medford District Resource Management Plan (RMP), although some of the parcels with residences do meet the criteria described in the RMP.

Major issues related to rural interface management within the planning area would likely be those identified in the RMP as creating the greatest impact on interface areas, including: fire and fuels management and related effects such as smoke, visual resource management and protection of views from within residences in the area, short- and possibly long-term increased noise levels, and dust and other problems associated with increased vehicular traffic.

### 3.11.2 Recreation

Dispersed recreation such as hunting, hiking, swimming, camping, driving for pleasure, and cycling are the primary uses within the planning area. The Grave Creek - Marial National Back Country Byway starts at Grave Creek and skirts the eastern edge to Ninemile Mountain then bisects the area to the western edge at Marial on the Wild Section of the Rogue River. The 34-8-1 road serves as the eastern boundary and is currently a designated National Back Country Byway to Marial. There are several vista opportunities along this route that provide very good looks into the East Fork Whisky Creek as well as into the Rogue Canyon in the distance. The route from Ninemile Mountain to Marial is the only vehicular access into the Wild Section and is used by land owners, government agency employees and members of the public accessing recreation facilities in the area, primarily at Tucker Flat Campground and trail heads for the National Rogue River Trail and the Wild Rogue Wilderness. The route from Grave Creek to Ninemile Mountain and continuing west on the Kelsey-Mule Road is used as an alternate shuttle route for winter rafting on the Rogue River. Usage monitoring on the route from Ninemile to Marial completed in approximately 1996 determined use averaging less than 25 vehicles a week. No further studies have been completed but staff observations in the area seem to indicate that use has remained fairly consistent with previous surveys.

The Rogue River is a popular recreation resource on a national scale. It attracts thousands of recreationists annually, for rafting, fishing and hiking. Within the planning area, the river has been designated a Wild and Scenic River. The Rogue River trail is located on the north side of the river. Virtually all of the use associated with the river is concentrated within a few hundred yards of the river, rarely extending north of the trail.

The Glendale-Powers Bicycle Area - Main Route, designated in 1993, runs along the northern edge of the planning area and utilizes the Kelsey-Mule Road from Ninemile Mountain to the end of the Kelsey-Mule Road where the Dutch Henry Road crosses from the Umpqua Drainage to the Rogue River Drainage at the headwaters of the West Fork of Whisky Creek. Bicycle use on the route is light but has increased in recent years with several group events with use totaling more than 100 participants. Vehicular use on the route has remained fairly constant with an average of less than 100 vehicles a week in the warmer months.

Hunting use of the area seems to be most concentrated in the Mule Creek Drainage and appears to be relatively light based on staff observations. Much of the Mule Creek Drainage

has been closed to vehicular use and has probably resulted in some reduction in hunting use in the planning area.

Recreation sites in the planning area outside of the Wild and Scenic River Corridor are very limited. Rainie Falls and Whisky Creek Overlooks on the Mt. Reuben Road just west of Grave Creek, Tucker Flat Campground at the mouth of Mule Creek, Buck Prairie trail head on the western edge of the West Fork of Mule Creek Drainage, Mt. Bolivar trail head on the Kelsey-Mule Road at the head waters of Arrasta Fork of Mule Creek, and Cold Springs at the headwaters of Mule Creek are the primary sites outside of the river corridor. This is also the access to the Wild Rogue Wilderness. The planning area as a whole receives approximately 2,500 visitors a year.

## 3.12 Visual Resources

Land within the Congressionally-designated Rogue Wild and Scenic River corridor and the Wild Rogue Wilderness are classified as VRM Class I requiring that the existing character of the landscape be preserved. There are approximately 15,180 acres in this category (see Map 14).

The Medford District Resource Management Plan established that areas seen from the Wild Section of the Rogue National Wild and Scenic River and outside of the designated corridor would be managed as Class II Visual Resource Management (VRM) areas. Management direction for this area is to retain the existing character of the landscapes, allowing for low levels of change to the characteristic landscape and activities which did not attract the attention of the casual observer. The inventory done for the RMP indicated that there were approximately 32,696 acres classified as VRM Class II. A more accurate inventory for this analysis was conducted using a more intensive, GIS-based process. As a result, it appears that a more accurate estimate of the VRM Class II lands is 26,364 acres. This does not represent a change in the RMP decision, but rather a more detailed analysis than was possible when the RMP was established. Use of the current acreage based on more accurate analysis is appropriate under 43 CFR 1610.5-4.

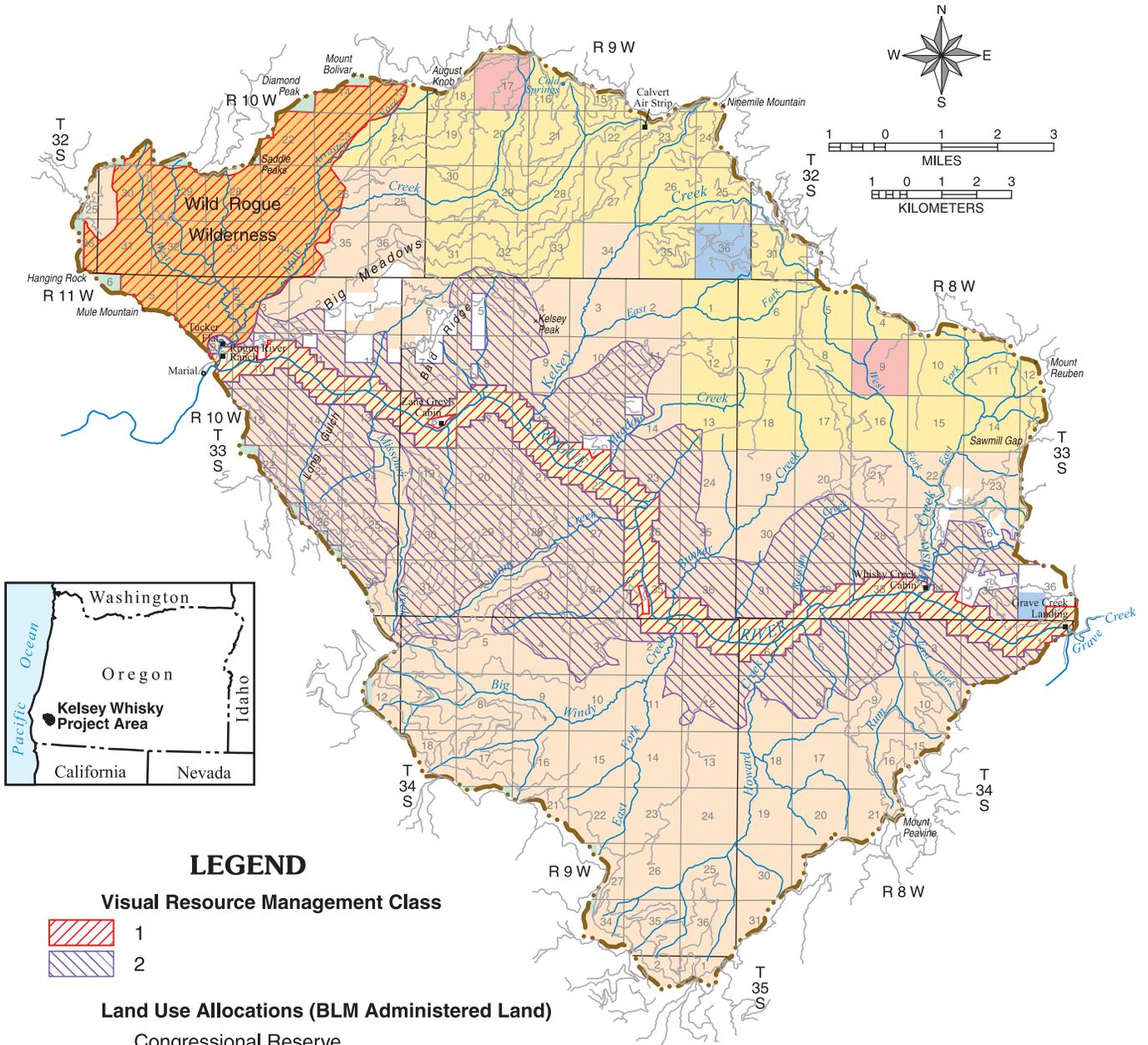
Rural interface areas, BLM-administered land within one-quarter mile of private lands zoned for 1-5 acre or 5-20 acre lots, are managed as VRM class III, allowing moderate levels of change to the existing character of the landscape. All other areas are managed as VRM IV allowing for major modifications of the existing landscape character.

Some of the planning area was burned in the Quail Creek Fire and later in the Galice Complex Fires. Evidence of these incidents are visible from within the Class I, II and III VRM lands.

## 3.13 Population and Economic profile

### 3.13.1 Introduction

The Kelsey Whiskey Creek Study Area is located within BLM's Glendale Resource Area. The area is located primarily in Curry, and Josephine Counties, with a very small portion in Douglas County. Primary access to the area is from the I-5 corridor via the Merlin-Galice Road. This road is a designated back country byway. Additional access point communities include Wolf Creek and Glendale from the East and Agness and Powers from the West. No communities are located in the study area. (USDI, BLM, 1992) To effectively compile an economic profile of the area, Coos, Curry, Douglas and Josephine Counties were selected as the analysis unit. This is a very large area relative to the Kelsey Whiskey Creek study area but



**LEGEND**

**Visual Resource Management Class**

-  1
-  2

**Land Use Allocations (BLM Administered Land)**

-  Congressional Reserve
-  Wilderness
-  Wild and Scenic River Corridor
-  Connectivity / Diversity Block
-  Late Successional Reserve
-  General Forest Management Area

**Land Status**

-  U.S. Forest Service
-  State of Oregon
-  Private

-  Kelsey Whisky EIS Planning Area Boundary
-  Road

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**KELSEY WHISKY ENVIRONMENTAL IMPACT STATEMENT**

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**Map 14: Visual Resource Management (VRM Classes 1 & 2)**

has been selected to encompass all of the access point communities. The major economic and population centers in this portion of southern Oregon are Coos Bay/North Bend (Coos County), Roseburg (Douglas County), and Grants Pass (Josephine County). Medford is also a major population and economic center located outside the profile area in neighboring Jackson County, approximately 45 miles via car from the Kelsey Whiskey Creek study area boundary.

The nearest communities with commercial air service are Medford and Coos Bay. The nearest Amtrak service is in Klamath Falls. Visitors to the area generally arrive by motorized vehicle. Commercial recreation services also provide transportation for their customers, primarily visitors using the Rogue Wild and Scenic River.

## **3.13.2 Study Area Profile**

### **3.13.2.1 Population, Age Distribution, and Ethnicity**

For the unincorporated access point communities of Powers, Agness, Merlin, and Wolf Creek/Sunny Valley 1990 Census information by zip code is available. Population for these communities is as follows: Powers, 966; Agness 122; Merlin, 1,996; and Wolf Creek/Sunny Valley, 1,296.

Southern Oregon counties have relatively high percentages of population ages 65 or older when compared to statewide rates. While demographic changes since 1990 have increased the number of people in this age group it is representing a smaller portion of total population in Oregon as a whole. In contrast to the southern Oregon counties of Coos, Curry, Douglas, and Josephine which increase in number and proportion (Wineburg, 1998). Information on age distribution and immigration suggests that Coos, Curry, Douglas and Josephine counties are all attracting retirees.

Coos, Curry, Douglas and Josephine counties, like Oregon as a whole have limited ethnic diversity. Native Americans are represented at a rates greater or equal to the overall state rate throughout the region. Of particular interest is the access point community of Agness. During the 1990 Census, 45 of 122 persons in that zip code were reported to be Native Americans.

Native American residents may participate in unique cultural practices associated with reserved treaty rights. Activities may include, fishing, hunting, and gathering plant materials for food or ceremonial purposes. No reservation lands are located in the Kelsey-Whiskey Creek area.

In some areas, collection of special forest products and employment relative to forest resources are closely associated with Hispanic, Asian, and/or Russian ethnic groups.

### **3.13.2.2 Employment and Wages**

In 1999, an estimated 24,920 people were working in Coos County. This includes approximately 3,530 self-employed persons. An estimated 2,340 people were unemployed in 1999. Federal, state and local government was the largest employment sector with 5,680 employees. The lumber and wood products industry is the dominant manufacturing employer, with 1,380 of the 2,550 manufacturing employees. Lumber and wood products employment has declined by 990 jobs, or 41.8 percent, since 1990 (State of Oregon, Employment Department, Various Years).

The construction and services sectors have been the leading growth sectors. The construction sector employed 850 people, up 23.2 percent since 1990. The services sector employed 4,690

people in 1999, up 38.3 percent since 1990. Overall, Coos County has been experiencing slow employment with growth in construction, services, and government just barely offsetting losses in manufacturing, and transportation, communications, and utilities (State of Oregon, Employment Department, Various Years).

In 1999, an estimated 7,750 people were working in Curry County. This includes almost 1,490 self-employed persons. Wage and salary workers were more common, totaling 6,260. Trade was by far the largest employment sector with 1,830 employees in 1999. This was followed by services with 1,300, and government with 1,290. The lumber and wood products industry is the dominant manufacturing employer, with 630 of the 890 manufacturing employees. Lumber and wood products employment has declined by 100 jobs since 1990 (State of Oregon, Employment Department, Various Years).

The services sector has been the leading growth sector in Curry County since 1990, up 36.8 percent. Growth in all the non-manufacturing sectors has offset employment losses in manufacturing and government. Overall, the civilian labor force in Curry County has declined by 1,400, or 14.3 percent, since 1990. This counteracts the underlying population trend which increased by 2,723, or 14.1 percent, during the same period. Two factors are at work to cause this unusual situation. First, is the increase in retirees and population over age 65. Retirees and seniors are generally not working or seeking work, thus do not count as part of the civilian labor force. In addition, discouraged workers who have been unemployed for a long period may have given up seeking new employment, thus do not count as part of the civilian labor force (State of Oregon, Employment Department, Various Years). Unemployment, although higher than in 1990, has been on a downward trend since 1997.

In 1999, an estimated 41,020 people were working in Douglas County. This includes approximately 3,790 self-employed persons. An estimated 4,220 people were unemployed in 1999. Trade, services, and government was the largest employment sectors, all with over 8,000 employees. The lumber and wood products industry is the dominant manufacturing employer, with 6,360 of the 8,060 manufacturing employees. Lumber and wood products employment has declined by 1,870 jobs, or 22.7 percent, since 1990 (State of Oregon, Employment Department, Various Years).

The construction sector has been the leading growth sector. The construction sector employed 1,590 people, up 59.0 percent since 1990. Overall, Douglas County has been experiencing good employment with growth in non-manufacturing sectors offsetting losses in manufacturing (State of Oregon, Employment Department, Various Years).

In 1999, an estimated 26,680 people were working in Josephine County, which includes approximately 4,830 self-employed persons. An estimated 2,440 people were unemployed in 1999. Trade and services were the largest employment sectors with 5,880 and 5,790 employees respectively. The lumber and wood products industry is a major manufacturing employer, with 1,370 of the 3,270 manufacturing employees. Lumber and wood products employment has declined by 640 jobs, or 31.8 percent, since 1990 (State of Oregon, Employment Department, Various Years).

The construction and services sectors have been the leading growth sectors. The construction sector employed 1,040 people, up 65.1 percent since 1990. The services sector employed 5,790 people in 1999, up 43.7 percent since 1990. Overall, Josephine County has been experiencing good employment with growth in construction, services, and government more than offsetting losses in manufacturing. (State of Oregon, Employment Department, Various Years)

### **3.13.2.3 Personal Income and Poverty Rates**

Per capita personal income in southern Oregon was well below Oregon's statewide level of \$25,912 in 1998. The region also had a higher portion of income derived from transfer payments than the state as a whole. Transfer payments include Social Security payments, Aid to Families with Dependent Children, unemployment compensation, disability payments, and other government payments. Typically transfer payments are a major source of income for retirees and low-income people. The percent of income derived from dividends, interest, and rent was also higher than statewide. This income represents returns on accumulated assets held by individuals and is often a large portion of income for the self-employed and retirees. Earned income, typically wages and salaries was below the statewide proportion. The distribution of income by source is not unexpected given the skewed age distribution in southern Oregon, particularly Coos and Curry counties.

The poverty rate estimate for 1997 in each of the counties was as follows: Coos, 16.7 percent; Curry, 13.9 percent; Douglas, 14.6 percent; and Josephine, 18.7 percent. These rates are higher than Oregon's statewide rate of 11.6 percent (Bureau of Census, 2000). Recently released guidelines for determining eligibility for assistance established the income limit for a family of four to be \$17,050 in 2000.

### **3.13.2.4 Revenue Sharing**

Federal lands are not subject to state or local property taxes. In recognition of the state and county services that are provided (e.g., roads, emergency services, and law enforcement) Congress passed legislation in 1976 to provide Payments in Lieu of Taxes to all states and counties where public lands are located. The Bureau of Land Management is currently charged with making these payments on behalf of itself and other federal agencies. Revenue is distributed using a complex formula based on acres of federal land, population, and the total of the previous years' revenue sharing from on resource use collections (timber, range, mining, etc).

Oregon counties also receive payments based on timber harvested from revested O&C railroad lands. Coos and Douglas counties also receive payments based on timber harvested from revested Coos Bay Wagon Road (CBWR) lands. Since 1991, payments have been based on historic payments instead of timber receipts. Congress has passed several laws establishing the formula and length of time for these "safety-net payments." The most recent law, the "Secure Rural Schools and Self Determination Act," P.L.106-393, establishes payments based on the average of the three highest payments to each county between 1986 and 1999 and guarantees payments through Fiscal Year 2006. The payments are also scheduled to increase based on the consumer price index. The legislation applies to revenue sharing by both the BLM and Forest Service.

## **3.13.3 Local Economic Activity Generated by Public Land Resources**

### **3.13.3.1 Introduction**

The Bureau of Land Management and other federal land management agencies often make commodities available for use by the private sector. For example, the BLM sells timber to private firms, issues permits for special forest products collections, and issues permits for commercial recreation uses. Opportunities also exist for exploration and development of locatable and leasable minerals. Mineral materials are made available for sale and to state and regional governments for public uses without charge.

### 3.13.3.2 Lumber and Wood Products

Three sales have occurred in the area since 1990. Two were sold to a firm in Riddle, Oregon and the third to a firm in Grants Pass, Oregon. Total volume in the three sales was 20,668 thousand board feet (MBF). The southern Oregon region of Coos, Curry, Douglas, and Josephine Counties, is a productive timber region. Timber harvest in 1990 for the four county region totaled 1,593,069 MBF from all ownerships. Harvest has steadily declined since 1990, with 1999 totaling 708,068 MBF, a decrease of more than 50 percent in less than a decade. The majority of the decrease can be attributed to decreases in BLM and Forest Service harvests. Harvest in 1999 from BLM lands was just 20 percent of harvest in 1990. The reduction in Forest Service was even greater, just 11 percent of the 1990 harvest.

### 3.13.3.3 Special Forest Products

Data are not available for the economic impacts of special forest products in this area, but they are certainly far smaller than that of timber. The planning area is very remote and rugged, making it less attractive to potential harvesters than areas closer to communities or major transportation links, such as I-5. Beargrass, cedar boughs and other floral greenery are the primary products in this planning area. There does not appear to be a major potential for mushrooms or other products.

### 3.13.3.4 Minerals and Energy Resources

The commercial mineral potential appears to be limited in this area. There are a few individuals and small companies in the planning area which extract some gold from streams in the area, but the income and economic impacts to the local economy are considered to be nominal. See the cultural section below for discussion of historical mining in the area. Most mining is casual use. The planning area is considered low potential for either oil and gas or geothermal resources. There are no current federal energy mineral leases and no known interest at this time.

### 3.13.3.5 Recreation

By far the largest economic effect from recreation activities comes from visitors using the Rogue River for boating and fishing. Over 25,000 visitors a year use the Wild and Scenic Section of the River, generating an estimated income of approximately \$13 million (Economic Strategies 1998). This level of recreation use has direct impacts on the nearby communities of Galice, Agness, Grants Pass and Gold Beach which serve as embarkation and take-out points for float trips. In addition, outfitters, guides and associated business in Merlin, Grants Pass and other communities are greatly benefitted from this activity. Visitor use levels during the summer are regulated by the BLM and the US Forest Service and they appear to be stable for the near future (Austermuhle and Wicks 2000).

### 3.13.3.6 Utility Corridors and Wind Energy

The planning area does not include any BLM designated utility corridor. There is no known need for transmission facilities in this area. There is no known need for a right-of-way for communications and no known interest in wind energy development in this area.

## 3.14 Minority and Low Income Populations (Environmental Justice)

There are no minority communities or low income communities within or nearby the planning area. The Glendale Resource Area recognizes the concerns for environmental effects, including human health, economic and social effects, of its actions, including their effects on minority communities and low-income communities, as required by the National Environmental Policy Act (NEPA).

## 3.15 Cultural Resources

Much of the following description was taken from the *Cultural Resource Survey and Historic Overview of the Kelsey Whisky project area - lands north of the Rogue River*, by John Jones.

Archaeological evidence for the human habitation of southwest Oregon dates back at least 11,500 years. The earliest evidence is limited to scattered finds of distinctive dart and spear points, called Clovis points. These points are markers for the Paleo-Indian Culture, a specialized hunting adaptation focused on large Pleistocene mammals. Evidence for the Early Archaic adaptations to changing post-Pleistocene climates between 10,000 and about 7,000 years ago, is very scanty, but large broad stemmed points and broad-based pentagonal points of locally distinctive form are characteristic time markers for this period (Aikens 1993:227).

By about 7,000 years ago, several sites located along the Rogue River and its primary tributaries document a long period of relative cultural stability. Evidence from the Marial site (35AR11-73), as well as several other sites similarly situated on terraces along the Rogue River, indicate that a broad based hunting and gathering foraging pattern was characteristic across southwest Oregon for several thousand years. Although stylistic markers document changing cultural patterns over time, between about 8,500 years and up until at least 3,000 years ago, a similar subsistence pattern is characteristic across the area (Connolly 1994, 1995; Winthrop 1993).

Between about 7,000 and 3,000 years ago, during the Middle Archaic period, human inhabitants of the Rogue River environs area initially lived in small, mobile groups and hunted and gathered within defined territories (Winthrop 1993). Seasonal base camps were occupied along the main stem of the Rogue River. Reliance on hunting, especially deer, and on collecting a wide variety of plant foods are evident in archaeological assemblages. At this time, fishing was a component of the subsistence pattern but did not have the heavy emphasis that developed in the late Middle Archaic Period and that became a primary focus of the Late Archaic adaptations after about 2,000 years ago (Connolly 1994, 1995; Winthrop 1993).

Around 3,000 years ago, a gradual shift occurs in the adaptive patterns of the inhabitants of southwest Oregon. The mobile, wide spectrum resource gathering, foraging pattern characteristic throughout Middle Archaic times is replaced by a more sedentary, collector strategy with a heavy emphasis on riverine and streamside resources.

By 2000 years ago, during Late Archaic times, the collector pattern is well established at several sites located along the main stem of the Rogue River. Streamside adaptations are established with an emphasis on taking anadromous fish such as salmon and steelhead, collecting and processing acorns from adjacent oak woodlands, collecting seeds such as tarweed from grasslands on the valley floors, and camas bulbs from the numerous swampy lands and valleys. Pithouse villages are established on streamside terraces at important fishing sites along the Rogue and Applegate rivers. Plant food processing tools such as mortars, metates, and pestles indicate the significance of plant foods resources while and

scrapers, projectiles, and a variety of flaked stone tools show a continued emphasis on hunting numerous upland animal species. This period heralds the introduction of the bow and arrow, and the possible invasion of Athabascan speakers into the area (Connolly 1995). Occupation at these sites intensifies over time and stable villages with established cemeteries are found by about 1,500 years ago. This pattern persists and is characteristic of the ethnographic lifeways documented for the many linguistically diverse Takelma and Athabascans groups living along the Rogue River and its tributaries at the time of historic contact.

The project area includes portions of the territories of several different ethnographic groups. The Penutian speaking Lowland Takelma were generally centered along the Rogue river east of Grave Creek, but provided a placename that probably corresponds to Rainie Falls, “a portage for canoes and big waterfall way down Rogue River.” Various Athabascan groups were centered along the river and its tributaries to the west. The wild portion of the Rogue River corridor was the territory of the Shasta Costa Athabascans while the Tal-tuc-tun-te-de were centered on Galice Creek (Atwood and Gray 1996:56-57). The boundaries of these groups overlap in the project vicinity. Portions of this area could have been used for seasonal hunting, gathering, and fishing by both Athabascan and Takelma.

The diversity of language signals very distinct ancestries; yet, the groups occupying southwestern Oregon at the time of historic contact were culturally very similar and practiced similar lifeways (Pullen 1996). The people were all hunter-fisher-gatherers who made their living from a wide variety of resources to be found in the narrow canyons and small interior valleys they occupied. The main villages, central settlements of a few houses each that were occupied for the greater part of the year, generally were located on alluvial terraces of the major streams. Here, they built substantial semi-subterranean plank houses. The villages are situated relative to good fishing sites, at the confluence of streams, and where acorns and other storable plant resources were abundant. Surrounding uplands were used to gather a wide variety of plant foods, to hunt deer and elk, and to procure materials for making baskets and tools (Gray 1987; Pullen 1996).

Major sources of food were salmon, trout, suckers, crayfish, and freshwater mussels from the streams; deer, elk, bear, squirrels, rabbits, acorns, and pine nuts from the savannas and forests, and camas bulbs, sunflower seeds, and tarweed seeds from the grasslands (Aikens 1993: 223-224). In the spring, people left their villages to gather camas bulbs and to fish. Although salmon and steelhead were primary capture species, as they could be collected in large numbers during seasonal spawning runs, numerous trout species and other fish were taken (Pullen 1996).

A wide variety of plant foods became available throughout the summer and seeds were dried and stored for winter use. Acorns from black and white oaks and tanoak were an important food source (Pullen 1996 IV-11). Salmon harvest was especially important in summer and early fall. Weirs were built across streams to channel the fish through narrow openings where they could be speared or netted, and winter villages were sited near rapids and other good fishing places. Hunting deer and elk and fishing for a wide variety of species were important year round but especially during fall and winter (Aikens 1993; Pullen 1996; Atwood and Gray 1996).

The wild stretch of the river between Marial and Grave Creek did not have large terrace features located above the flood zone and would not have been suitable for winter village sites. Numerous small meadows, terraces, and river bars were strung along the river between the mouth of Mule Creek and Horseshoe Bend. In fact, this stretch of the river was known as “the Meadows” because of the several small grassy meadows located about 1,500 to 2,000 feet above the river on the north side (Walsh 1972:11). These areas served as a place of retreat during the Rogue River Indian Wars.

The gravel bars along the river below Horseshoe Bend, and those once located near the mouth of Whisky Creek were the locus of gold bearing gravels and were largely obliterated during

the early placer mining era. Between Meadow Creek and Whisky Creek, the Dothan geologic formation is devoid of valuable minerals (Parry 1999a, 1999b), and this stretch preserves some evidence of the native uses of the river. Archaeological evidence suggests important fishing sites were located along the middle portion of the rugged canyon (Neilsen 1978a, 178b, 178c; Gray 1994).

Upland areas would have been used for hunting and occasional plant gathering (Winthrop 1995). Trails originally used by native peoples were later developed for packers and miners, suggesting that the project area was well traveled by native peoples. Stream bottoms support thick riparian vegetation, and although often suitable for hunting stations and for fishing sites, were not travel corridors strung along the river and did not serve as seasonal camps. Instead, trails were located along ridge tops, benches, and other open areas and generally linked the Rogue River to settlements located north on Cow Creek as well as to those along the river above and below the project area. Small meadows located near springs in the central upland area would have been used as short-term camps.

Few prehistoric archaeological sites have been recorded in the steep, dissected terrain north of the Rogue River. Both deer and elk were once very numerous in these lands (Rivers 1979), and this area probably was used for seasonal hunting and plant gathering. Trails later used by historic packers and miners followed earlier ones developed by the native inhabitants. As evident during the Rogue River Indian Wars, local Native Americans had very specific knowledge of this back country. They used it to military advantage in hiding out from the militia and in staging attacks on nearby settlements (Walsh 1972). The small meadows edging the river and along major streams, as well as those centered around springs such as Copsey, Meadow, and Cool were much larger than today. The landscape was much more open during ethnographic and early historic times as the natives used fire to maintain the meadows and control brush (Pullen 1996). Today, many of the small meadows are either covered with brush fields or have been invaded by surrounding forest (Dave Reed, personal communication, 2000).

### ***Contact Period***

Although the wild portion of the Rogue River figures importantly in the history of the Kelsey Whiskey project area, Indian camps from this period and battle sites are located along the river corridor outside the survey area. The militia headquarters at Little Meadows and Fort Lamerick at Big Meadows are located within the survey area, but physical evidence of these historic uses have not been located.

### ***Gold Mining***

No large placer deposits are located within the Kelsey Whiskey survey area. The slopes of the drainages are simply too steep to accumulate gravels. During the 1880s, when hydraulic mining was at its peak, ditches were built that directed water from tributary streams to the placer operations in the bottom of the canyon. One ditch flume was built in 1890 along the slopes of Whisky Creek and ran for one-half mile between creek source and Whisky Creek Cabin (Atwood and Gray 1996: 101). It provided domestic water for the cabin and power for hydraulic mining on the river below. A portion of this ditch may have crossed BLM lands in the survey area. Other ditches may be located along drainages above major placer workings and would be expected to be within about one-half mile of the river. There are no recorded uses of the survey area by Chinese miners. Their activities appear to have been restricted to the placer deposits located along the river.

Although the major historic lode producing mines were patented and now are located on private lands, numerous mines in the Mt. Reuben District are located on BLM lands and are shown on the USGS 7.5' Mt Reuben quadrangle.

## ***Settlement***

The Rogue River Ranch is located outside the survey area. Two graves of decedents of the Billings and Fry families are located in the survey area in the vicinity of Big Meadows. Big Meadows was used for grazing by the Billings and Frys and evidence of fencing, gravesites, corrals, and watering troughs may be found on adjacent BLM lands.

## ***Transportation and Communication***

Numerous early trails are shown on a variety of maps including GLO survey maps, revestment maps, Metsker's Maps, and on USGS 15' and 7.5' quadrangles. Apart from those developed specifically for hiking along the Rogue, most have been converted to dirt roads or jeep trails. There is, however, no perfect correspondence between the original trail templates and the roads that were developed later. Map plots are imprecise on early GLO maps, and many are likely to be covered with brush rendering them invisible today (Dave Reed, personal communication, 2000).

## ***Civilian Conservation Corps***

In the rugged lands along the Rogue River canyon, there were few roads or bridges, and the CCC spent considerable energy in constructing roads across this remote area. The road today known as the Grave Creek to Marial National Back Country Byway (a.k.a. Mount Reuben and Marial Roads) was constructed by the CCC, initially as a truck road.

## ***Summary***

The BLM contracted for a historical overview of the Kelsey Whisky area as well as a 15% sample survey of the total project area. An archeological survey of 6324 acres was completed during the summer of 2000. The majority of historic sites are related to historic mining activity, settlement and early transportation.

The prehistoric sites are limited in number but the variety of site types indicate that this area has long been known and used as a source of food, shelter, and passage. The majority of historic sites are related to historic mining activity. Adits, structure flats and remains, prospect pits, ditches, and a myriad of associated artifacts made up the bulk of the archaeological remains found in the project area. The next largest historic site type were historic trails. These were found in various stages of preservation and were used by miners and homesteaders throughout the project area including in and surrounding the East Fork Whisky Creek subwatershed. These sites include historic trails, mine adits, mine tailings and remnants of structures. Also in relation to transportation, the Mount Reuben and Marial Roads are representative of an interesting time in history when the CCC and other Federal programs operated in the area.

## ***Proposed Area of Critical Environmental Concern***

The East Fork Whisky Creek area was relatively undisturbed prior to the 1850's. Historical information indicated Native Americans had a few trails into the Rogue River Canyon most of which were on ridge tops. In the 1850's, gold was discovered and the miners improved many of the trails into pack routes. Placer and load exploration occurred through the 1930's. There are several exploration pits and adits within the proposed ACEC. For the most part, this early exploration has been healed over by vegetation. During the early 1930's the first road into the area was constructed by the CCC's. This road forms the eastern and northeastern boundary of the proposed ACEC. Several small units were harvested in the 1960's and then about once a decade up to present. These were seeded or planted back to conifer and are early/mid seral stages at present. The youngest of the harvest units was planted in 1994. The total acreage of

harvest was 67 acres. All of the harvested acres are located near the eastern boundary road. The core of the subwatershed is intact and undisturbed except for early mining exploration.

## 3.16 Native American Religious Concerns

Native American habitation of the planning area is known to have begun approximately 8,500 years ago. Confirmation of early Native American use of the area comes to us via the archaeological deposits found at Marial, a prehistoric and historic settlement located near the mouth of Mule Creek at the western end of the planning area.

The Shasta Costa band of Tututni Native Americans occupied the area along the Rogue River watershed from Agness to Grave Creek, and south along the Illinois River watershed. They were the predominate users within the EIS planning area. Other tribes, such as the Tututni, Chetco and Coos used and passed through this area on the way to the coast. Directly east, and slightly overlapping in territory around Grave Creek, were the Lowland Takelma. To the north of the planning area lived the Cow Creek band of Umpqua Tribe.

Historic records of the area began with the journals of trappers and the botanist David Douglas, who came to this region in the 1820's. Pioneer settlement began in the 1850's, aided by the discovery of gold on Galice Creek. The arrival of miners and farmers engendered a series of conflicts with the local Native Americans, leading to the period known as the Rogue Indian Wars of 1853 to 1856. By 1856 most of the surviving Native Americans in the planning area were either forcibly removed to the Grande Ronde or the Siletz reservations in northern Oregon, or were killed by "licensed" Indian hunters. By the end of this period, due to disease, war and internment, most of the original Native American inhabitants had been extirpated from the area.

Unlike the designated areas for the Cow Creek band of Umpqua Native Americans to the north, there are no areas within the Kelsey Whiskey EIS Planning Area that are known to be currently important as Native American religious sites or are in use for traditional purposes at this time. However, we will continue to coordinate with Native Tribes during this process.

## 3.17 Areas of Critical Environmental Concern

There are currently no Areas of Critical Environmental Concern (ACEC) or Research Natural Areas (RNA) in the planning area. The Bobby Creek RNA is adjacent to the planning area, near the upper portion of Kelsey Creek.

The area proposed for the East Fork Whiskey Creek subwatershed area contains a plant group that would fill a cell of the Oregon Natural Heritage Plan. The large size of the East Fork Whiskey Creek area represents an ecologically functional Douglas-fir/tanoak system that has very little human-caused disturbance.

## 3.18 Wilderness

The planning area includes a portion of the Wild Rogue Wilderness Area, north of the Rogue River, established under the Endangered American Wilderness Act of 1978. Interpretation of that law has resulted in all lands within the Wild Rogue Wilderness, including the Oregon & California Lands generally administered by the Bureau of Land Management, being administered by the Siskiyou National Forest. Management of this wilderness area is covered by the Siskiyou National Forest management plan. The boundary of the wilderness was

established as part of the Congressional Act but has never been established through on-the-ground surveys.

## 3.19 Wild and Scenic River

The management practices for the Wild and Scenic section of the Rogue River and for the Wild Rogue Wilderness Area are adequately covered by management plans for those areas. The corridor along the Rogue River in the planning area is managed by the BLM; the Wild Rogue Wilderness Area is managed by the Siskiyou National Forest. While the management actions being proposed in this Final EIS are located close to these two areas, they are fully consistent with those management plans and would not affect the management of the areas or the resources involved. Altering the management direction for either the Rogue River or the Wild Rogue Wilderness Area is outside the scope of this Final EIS as discussed in the Notice of Intent and the purpose and need for the action.

The analysis area is bisected by the Congressionally-designated Rogue Wild and Scenic River. Management actions for BLM-administered land beyond that corridor are affected by restrictions to protect the view from within the corridor.

Several streams within the planning area were reviewed for eligibility and suitability for possible inclusion within the Wild and Scenic River Management System under the Medford District Resource Management Plan. Management actions on BLM-administered land along the following segments, generally defined as 1/4 mile on either side of the stream, are restricted to protect the outstandingly remarkable values identified in the RMP: Big Windy Creek, East Fork Windy Creek, Dulog Creek, and Howard Creek. All of these segments are located south of the Rogue River, within the area managed as a Late-Successional Reserve, with all effected lands administered by the BLM.

## 3.20 Air quality

Air quality concerns are regulated by the 1963 National Clean Air Act as amended in 1966, 1970, 1977 and 1990. The 1977 amendment provided for the prevention of significant deterioration (PSD) program. The intent of the PSD program is to limit air degradation in those areas of the country where the air quality is much better than standards. Under this provision, certain national parks and wilderness areas were designated as Class I Airsheds whereas the remainder of the country was designated Class II. Although the PSD permit provisions of the Clean Air Act apply only to major stationary sources of air pollution (motor vehicles are mobile sources), the Environmental Protection Agency (EPA) used them to determine the degree of potential impacts of other sources on air quality. Forest management activities in the analysis area do not require a PSD permit.

The Oregon Smoke Management Plan, a part of the required state implementation plan (SIP), identifies strategies for minimizing the impacts of smoke from prescribed burning on the smoke sensitive areas within western Oregon. Particulate matter with a nominal size of 10 microns or less (PM 10) is the specific pollutant addressed in the SIP.

Three designated air quality areas (defined by the Oregon Department of Environmental Quality) may be affected by management activities within the planning area. The Kalmiopsis Wilderness, located approximately 21 miles to the southwest, is designated as a Class I smoke-sensitive area. Regulations prohibit prescribed burns on days that allow smoke to flow into the Kalmiopsis between July 4 and Labor Day (beginning of September). The Wild Rogue Wilderness Area is a Class II smoke-sensitive area. The Grants Pass non-attainment area is 30 miles southeast. The Medford/Ashland non-attainment area is 56 miles east-southeast of the watershed. Both non-attainment areas are far enough away that they do not

impact these areas. The non-attainment status of these communities is not attributable primarily to prescribed burning. Major sources of particulate matter within the Rogue Valley is smoke from woodstoves, dust, and industrial sources. The contribution to the non-attainment status of particulate matter from prescribed fire has historically been less than 4 percent of the annual total.

Air quality and visibility monitoring sites do not exist in the immediate vicinity where treatments would occur, therefore, existing air quality information is not available. Generally speaking, air quality is excellent since there are no stationary sources of particulate matter production and the planning area is remotely located.

Smoke sensitive receptors adjacent to the planning area include Rogue River Ranch, Rogue River Corridor, Rand Galice, and the Kalmiopsis and Rogue Wilderness areas. Times of high public use occur primarily in late spring through early fall. Smoke intrusions may occur (but not likely) as far north as the Cow Creek drainage. In this case, the towns of Reuben and Glendale may have the potential of being impacted. The prevailing winds between late spring and fall are up canyon and uphill (west to southwest).

When burning under spring-like conditions, larger fuels are not consumed due to higher fuel moisture. Fuel consumption is lower, creating fewer emissions, with smoke dispersal easier to achieve under the general meteorological conditions. Advanced ignition techniques, such as aerial firing, further reduce total emissions by accelerating the ignition period and reducing the total combustion process due to the reduction in the smoldering stage. Hand piling of slash has allowed selective burning of woody debris during late fall and winter but only under weather conditions that allow optimal smoke dispersion. These mitigation measures can be used to bring emissions below de minimis levels as required in the Clean Air Act.

The National Ambient Air Quality Standards (NAAQS), set by the authority of the Clean Air Act (CAA), cover six "criteria" airborne pollutants: lead, sulfur dioxide, carbon monoxide, nitrogen oxides, ozone and particulate matter. The lead and sulfur content of forest fuels is negligible, so these two forms of air pollution are not a consideration in prescribed burns.

Prescribed burning does emit some carbon monoxide (CO), from 20 to 500 lb. per ton of fuel consumed. This would be a concern if there were other persistent large CO sources in the immediate vicinity. CO is such a reactive pollutant, however, that its impact is quickly dissipated by oxidation to carbon dioxide where emissions are moderate and irregular and there is no atmospheric confinement.

Burning also emits moderate amounts of volatile organic compounds (VOC) and minor amounts of nitrogen oxides (NO<sub>x</sub>). These are precursors to formation of ground level ozone. Here, fire-related emissions may be seen as important only when other persistent and much larger pollution sources already cause substantial non-attainment of NAAQS.

Particulate matter smaller than 10 micrometers (PM 10) is a term used to describe airborne solid and liquid particles. Because of its small size, PM 10 readily lodges in the lungs, thus increasing levels of respiratory infections, cardiac disease, bronchitis, asthma, pneumonia, and emphysema.

The fate of PM emissions from prescribed burning is twofold. Most (usually more than 60%) of the emissions are "lifted" by convection into the atmosphere where they are dissipated by horizontal and downward dispersion. The "unlifted" balance of the emissions (less than 40%) remain in intermittent contact with the ground. This impact is dissipated by dispersion, surface wind turbulence and particle deposition on vegetation and the ground. The risk of impact on the human environment differs between the two portions of smoke plume.

## ***Ground Level Smoke***

Unlike smoke aloft, the potential for ground level smoke to create a nuisance is immediate. This part of the smoke plume does not have enough heat to rise into the atmosphere. It stays in intermittent contact with the human environment and turbulent surface winds move it erratically. Also in comparison to smoke aloft, human exposure is more intense, relatively brief (a few hours) and limited to a smaller area. Smoke aloft is already dispersed before it returns to the human environment while ground level smoke must dissipate within that environment. Dissipation of ground level smoke is accomplished through dispersion and deposition of smoke particles on vegetation, soil and other objects.

The pollutant most associated with the Medford District's resource management activities is PM 10 found in smoke produced by prescribed fire. Monitoring in southwest Oregon consists of nephelometers (instrument designed to measure changes in visibility) in Grants Pass, Provolt, Illinois Valley, Ruch and eventually in Shady Cove. One medium volume sampler is collocated with the nephelometer at the Provolt site. The medium volume sampler measures the amount of PM 10 and smaller at ground level.

## **3.21 Non-native and invasive species**

### ***Noxious Weeds***

Noxious weeds are plants that originated in another area, typically Asia or Europe. They can displace native plant species and biodiversity. In their ecosystem of origin, these weeds are not problems because they evolved with natural controls such as insect predators, fungi, and other competing plants, but these control agents are not present in North American ecosystems. Noxious weeds may affect the structure of ecosystems by altering the composition of plant communities. They can do this by producing abundant seed, having fast growth rates, and exploiting the entire soil profile for water and nutrients. The soil can be damaged by noxious weed populations by lowering the amounts of organic matter and available nitrogen. Some weeds can even cause the soil temperature changes to be more extreme than normal.

A roadside inventory for noxious weeds in the Medford District was conducted from 1996 to 1998. In addition, noxious weeds were reported during timber sale unit surveys for special status plants. Eight different species of noxious weeds are known to be growing in the planning area: Canada thistle, meadow knapweed, scotch broom, Spanish broom, purple loosestrife, yellow star thistle, Klamath weed and tansy ragwort. Since weeds can easily spread, populations probably exist beyond those currently on the inventory. Weeds are spread in many ways, including road building, logging, recreation activities, waterways, animals, weed-contaminated hay and wind. Noxious weeds prefer disturbed sites where they can out-compete the native community.

Yellow star thistle is found by the Grave Creek boat landing and the Rogue River trail. It was introduced to North America from the Mediterranean region of Europe. The thistles are sharp and walking through them can be painful. They also cause a nervous disorder in horses that leads to death.

Purple loosestrife was introduced into North America from Europe in the early 1800s as horticultural stock and as a contaminant of ship ballast. It can spread in wet environments rapidly. Rogue River canyon has been inventoried with substantial populations found.

Klamath weed or St. John's wort is native to North Africa, Europe and parts of Asia. The major reasons for the plant's introduction into other countries was cultivation for medical

purposes or ornamental value. Today, it is so widespread in the watershed and surrounding areas that it is considered established and is not inventoried.

There are 28 inventoried sites of Canada thistle in the watershed, all along roadsides. Canada thistle is a native to southeast Europe and Asia. It was introduced to Canada by early settlers, probably as a contaminant of crop seeds and now infests every county of Oregon.

Meadow knapweed is native to Europe and is now common from British Columbia to northern California. There are three known sites of meadow knapweed, all along roadsides.

Scotch broom is native to Europe and is currently widespread in Oregon, where it was originally introduced as an ornamental. There are five known sites along roads in the watershed.

Spanish broom has been found at 16 sites in the watershed, all along roads, except two found along the Rogue River. The sites on the Rogue River have been treated since 1997.

Tansy ragwort is a native to Europe. It was first reported around North American seaports in the early 1900s, indicating it was probably introduced as a contaminant of soil used as ships' ballast. The plant is toxic to cattle and horses. There are 34 inventoried sites along roads in the watershed. The biological control, cinibar moth, has been released in areas outside of the watershed.

### ***Proposed Area of Critical Environmental Concern***

Presently there are noxious weeds found on several roadsides bordering the East Fork Whiskey Creek subwatershed including Yellow starthistle, tansy ragwort, St. John's wort, knapweed, and scotchbroom. Currently there are no known populations of noxious weeds within the subwatershed.

### ***Animals***

Several non-native animal species have become established in the watershed. These species sometimes directly compete with native animals for food, water, cover and shelter. Bullfrogs compete and consume native frogs and young western pond turtles. Opossums compete with native striped skunks and raccoons. Brown-headed cowbirds and starlings parasitize native bird nests. Wild turkeys have been introduced into the watershed by ODFW and are now thought to be successfully established there. They are known to occur in the Bald Ridge area and may compete with native wildlife species for acorns.

## **3.22 Hazardous or solid wastes**

There are no known hazardous material sites in the planning area. When hazardous substances are discovered abandoned on public lands, they are identified, investigated, and arrangements for removal and disposal are made in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Resource Conservation and Recovery Act (RCRA), Oregon Department of Environmental Quality (DE), and the Department of Transportation (DOT) regulations.

Emergency response procedures are described in the District Hazardous Materials Non-Facility Emergency Response Plan. The response actions would be consistent with the above regulations, and the nature of the emergency.