

dissipate the energy of high flows and provide critical calm water habitat for juvenile fish during floods, are often associated with unconfined, low gradient reaches. Low gradient reaches are sensitive to increases in sediment and temperature and decreases in LWD.

Low gradient reaches are rare in the LNS watershed, except in the mainstem where the lower four reaches have gradients of 1 percent or less. In the tributaries using the reaches defined by ODFW, only the lower reach of Elkhorn Creek and three reaches of Opal Creek have gradients of less than 4 percent, although several tributaries have short sub-reaches of low gradient channel. In the unsurveyed tributaries, Sinkers, Little Sinkers, and Fish creeks have gradients of less than 4 percent in the lower quarter mile.

Human Uses

What are the major human uses in the LNS watershed? Where do they generally occur in the watershed? What are the current conditions and trends of the relevant human uses in the watershed? What makes this watershed important to people?

Human use is the predominant disturbance factor in the LNS watershed today. It is therefore important to have some understanding of the types and extent of human uses in the watershed. Much of the influence human use has had on ecological processes in the watershed is discussed in the terrestrial and aquatic sections of this chapter. This last section will more fully describe past and present human uses in the watershed, the current social environment, and concerns associated with those uses.

General Socio-Economic Environment

Before discussing specific human uses in the LNS watershed, it is important to provide a general socio-economic context surrounding and including the watershed. The entire LNS watershed falls within Marion County.

The LNS watershed is located near the middle of Marion County. The 1996, Regional 3 Economic Profile, prepared by the Oregon Employment Department, was the major source of the socio-economic information used to address the socio-economic environment for the LNS watershed. Region 3 includes Marion, Polk, and Yamhill counties. Information from a recent demographic study on the North Santiam Canyon was also used.

The closest incorporated communities to the LNS watershed are Lyons, in Linn County, and Mill City. Some of the North Santiam Canyon communities like Mill City fall within Linn and Marion counties, though the zone of influence tends to be dominated by Marion County. Both communities have a population of under 2,000 people. There is a small unincorporated community named Elkhorn located in the LNS watershed along the LNSR. Both Stayton and Salem are larger communities in Marion County which are within a 15 to 45 minute commuting distance.

Population and Demographics

Migration into Marion County is the driving force in expected population increases, given the county's proximity to the I-5 travel corridor, a high quality of life, and continued growth in

construction and high tech manufacturing. The population of Marion County was 252,800 in 1994 and is expected to increase 11 percent to 280,438 by the year 2000. From the year 2000 to 2010, an increase of 14 percent is expected for a total population of 319,729. While most of the increases in population would be expected to occur near the more urban areas of Salem, some additional residential pressure will still be felt in nearby rural areas.

The median population age for Marion County is increasing as the "baby boomers" of the 1950s and 1960s become older. The U.S. Census figures rank Oregon's population as fourth nationally; the oldest median age of 35.8 years and 39.6 years for Marion County. In Region 3, numbers from the 1980 and the 1990 show that the "age 65+" group has grown more than twice as fast as any age group in total population.

Census data also indicate that ethnic diversity is increasing in Marion County. Between the 1980 and 1990 survey, those identifying themselves in a non-white category increased 71 percent, for an overall total of 5 percent for the county. The largest growth occurred in the Asian/Pacific Islanders and the Hispanic categories. Increases are partially related to shifts in self-identification from white to the non-white category.

Economy

Marion County's economy and employment have historically been tied to state government, agricultural, and lumber/wood industries. Marion County's overall industry is relatively strong with growth in the manufacturing of mobile homes and in high tech industries. Food processing and agricultural industries also continue to be strong. However, most of the increase in manufacturing activity has centered around the larger population centers in Marion County.

The timber industry in Marion County has experienced significant changes in the last several years which has resulted in employment decreases. Part of this is due to a reduction in the timber supply on federal forests. In addition, between 1979 and 1987, the mechanization of mills and other increases in efficiency resulted in a 40 percent reduction in the number of workers required for a given level of production. The loss of these timber-related jobs has resulted in either the relocation of timber workers or a shift to a different type of job, often requiring commuting outside the North Santiam Canyon. Today, the economies of the smaller rural communities around the LNS watershed are still tied closely to the timber industry, with 8 of the 10 leading employers in the North Santiam Canyon being timber-related.

While the lumber/wood fiber industry will continue to play an important economic role in the North Santiam Canyon, communities are working to diversify their economies. Participants from the 13 communities in the North Santiam Canyon formed the North Santiam Canyon Economic Corporation to help develop and implement an overall strategic plan for their future. Some of the common objectives include increasing the number of family wage jobs (both through existing business expansion and new business development), improving infrastructure, improving education and workforce job skills, maintaining and improving quality of life, and improving human resource services.

One of the major challenges that many of the canyon communities face is the on-site infrastructure needs (i.e., water and sewer) of many new businesses. With state and federal low interest loans, grants, and technical assistance, some of the communities have been working to

upgrade their infrastructure and inventory lands with development potential. Business opportunities being discussed in the canyon include retrofitting old timber mills for other manufacturing activities, increasing tourism/retail businesses, value-added wood manufacturing, cottage industries, telecommuting, and locally based special forest product co-ops.

The NSR is one of the major water sources for the City of Salem. Salem has concerns about the potential impacts of land uses and additional development in the NSR drainage and its major tributaries, including the LNSR. This has been and will continue to be a major issue that the canyon communities, major watershed landowners, and the City of Salem will need to address together.

Today, the LNS watershed's major potential for contributing to Marion County's socio-economic health is tied most closely to providing wood products, meeting water supply needs, and providing outdoor recreation and eco-tourism opportunities. The extent to which the watershed provides for each of these resources is discussed in more detail in the following sections of this analysis.

Forest Products

Federally Managed Lands

Approximately 68 percent of the lands in the LNS watershed is managed by federal agencies. The BLM manages approximately 18 percent (13,222 acres) in the western half of the LNS watershed. The USFS manages the other 50 percent (36,144 acres) in the eastern half of the watershed.

BLM-administered Lands: Timber management activities on BLM-administered lands is tied to the LAU specified in the Salem District RMP. Approximately 5,600 acres of BLM-administered lands located outside of RR fall within a GFMA or CONN LUA. Under the guidance of the RMP, regeneration and thinning harvest is expected in both the GFMA and CONN LUAs over the next decade. Timber management activities on federal lands would meet or exceed the requirements of the Oregon State Forest Practices Act (FPA).

Land Use Allocation	Outside Riparian Reserves		Inside Riparian Reserves	Total
	Percent	Acres	Acres	Acres
Matrix/GFMA	50%	3,556	3,124	6,680
Connectivity	36%	2,562	2,154	4,716
LSR	1%	30	44	74
Elkhorn Creek WSR	7%	473	564	1,037
District Directed Reserves	6%	418	297	715
Total	100%	7,039	6,183	13,122

Note: Elkhorn WSR Corridor Acres are estimated based on interim boundaries.

Table 26: Land Use Allocations for BLM Lands in the LNS Watershed.

USFS-administered Lands: The USFS manages 50 percent (36,144 acres) of the lands in the LNS watershed as part of the Detroit Ranger District, Willamette NF. The majority of these lands are located in the eastern half of the watershed. A majority of the lands (25,800 acres) managed by the USFS will become the OCW and the Opal Creek SRA once the conditions of the Opal Creek legislation are met. The remaining lands fall under a LSR or within the Elkhorn National WSR corridor. Timber management activities on lands managed by the USFS in the LNS watershed would be prohibited or very limited, depending on the management objectives for each individual area.

Special Forest Products

Interest in the harvesting of Special Forest Projects (SFPs) is growing in the North Santiam Canyon. The North Santiam Economic Development Corporation (NSEDCC) worked with Musselman and Assoc., Inc., a consultant firm, to develop an efficient methodology for determining the volume of a given SFP present in a given area and its market value. NSEDCC hopes to have the model field tested on some of the lands in the North Santiam Canyon. This might help land managers more accurately determine the amount and value of SFPs in a given area. NSEDCC would also like to develop a marketing strategy that would encourage and assist individuals interested in collecting and selling SFPs from the North Santiam Canyon.

BLM-administered Lands: The collection of SFPs for both personal and commercial use is allowed on most BLM-administered lands in the LNS watershed in compliance with the Salem District RMP. Currently there is no formal inventory data on the type and amount of SFPs on BLM-administered lands the LNS watershed. When possible, information about SFPs are gathered during stand exams. Permits for the collection of SFPs are issued in response to requests. Based on past permits issued, some of the SFPs collected on BLM-administered lands in the LNS watershed include mosses, mushrooms, transplants, burls, edible plants and floral and greenery, and non-sawtimber wood products like firewood. The collection of moss is the most popular commercial SFP. Authorized and unauthorized collection of similar SFPs most likely occurs on private forest lands as well.

USFS-administered Lands: On lands managed by the USFS, the collection of SFPs is not allowed in Bull of the Woods Wilderness or the proposed OCW. Outside of those areas, the most common SFPs collected are fir boughs or bear grass.

Industrial Timber Lands

Industrial forestry is the predominant private land use in the western half of the LNS watershed. Approximately 23 percent (16,613 acres) of the lands in the watershed are managed by private timber companies or individuals for the primary purpose of providing commercial timber products.

Most private industrial forest companies seek to meet the economic objectives of their firm, while managing their lands on a sustained yield basis. However, changes in economic factors and differences in individual company policy can significantly affect harvesting levels and practices in the short and long term. For this reason, general assumptions about the management of private industrial forest lands in the LNS watershed must be made. These assumptions are based on observed past and present management practices. For the purposes of this analysis, it is assumed that unless otherwise stated, private industrial forest lands in the LNS watershed will continue to be managed for commercial timber products on a sustained yield basis, with an average rotation age of 50 to 60 years.

Management practices among individual private woodlot owners also vary. For this reason and because there is such a small percentage of small woodlot owners in the watershed, it is assumed that these lands would be managed in a similar manner as that of private industrial forest lands. Private industrial and small woodlot owners are required to meet standards and guidelines provided in the Oregon FPA. These assumptions would be subject to any new information gathered at a future time.

State of Oregon Administered Lands

The Oregon Department of Forestry (ODF) manages approximately 3 percent (1,857 acres) of the land in the LNS watershed. Located in the western half of the watershed, the lands ODF manages are in fairly small parcels (less than 320 acres) and are intermixed with BLM and private lands (see Ownership Map). These lands are managed to provide a continued source of revenue to counties and the state general fund on a sustained yield basis. They also provide for other public

uses when appropriate. For the purposes of this analysis, it is assumed that state lands would be managed in a similar manner as private industrial forest lands with an average rotation age of 50 to 60 years. Management of state lands is also required to comply with the Oregon State FPA.

Major Concerns

With the increasing regulation and restriction of forest management activities on both private and public forest lands, private industrial forest landowners are concerned about being able to manage their lands according to the company's objectives. This is a general concern that applies to many areas, not just the LNS watershed. Because of the mixed ownership pattern in the western half of the LNS watershed, access rights across BLM lands and other lands are also a concern. Other general concerns are associated with public use problems such as illegal dumping, equipment damage, vandalism, fire danger, long-term occupancy, and the unauthorized removal of forest products. Because of these problems, access to private lands along LNSR has been or is in the process of being gated off. Many of these same access and public use concerns are applicable to the other land owners in the watershed.

There are also individuals and organizations concerned about the impacts of timber harvest on overall forest and ecosystem health. The NFP attempted to address many of these concerns for both BLM and USFS lands. Based on the comments received in the questionnaire that was sent out at the beginning of the LNS watershed analysis, water quality is of particular concern since many residents of Stayton and Salem utilize water from the NSR of which the LNSR is a major tributary.

Mineral Uses

Mining activity on public lands in the LNS watershed is associated with recreational mining (primarily the LNSR and Cedar Creek) and rock quarries for road building. Currently there are no large commercial mining operations in the LNS watershed.

In the eastern half of the LNS watershed, a continuous strip of placer mining claims are located along or adjacent to the LNSR from the Willamette NF boundary to the terminus of Cedar Creek located near Shady Cove Campground. Many of these placer claims are located near popular dispersed recreation sites. Placer claims also extend along Cedar Creek upstream from Shady Cove Campground to just beyond the Bornite Project site. Activities on these claims include gold panning, sluicing, and dredging. Two of the claims, one at Three Pools Day Use area and the other at Shady Cove Campground, are owned by the Willamette Valley Miners Association and are open to the public for gold panning and prospecting.

As directed by the Act, subject to valid existing rights, all lands within the proposed wilderness and scenic recreation area are withdrawn from (1) any form of entry, appropriation, or disposal under the public land laws; (2) location, entry, and patent under the mining laws; and (3) disposition under the mineral and geothermal leasing laws. During the interim, the area has been segregated from mineral entry, essentially closing the area to the staking of any new mining claims; however, ownership of existing valid claims may be transferred to another individual. Any existing claim that falls invalid becomes segregated from the mining laws and cannot be

reclaimed. Recreational prospecting will still be allowed. Guidelines for that use will be developed as part of the Opal Creek SRA Management Plan.

Bornite Project

The Bornite Project, a proposed underground copper mine, is located approximately three miles southeast of Shady Cove Campground along Cedar Creek. This project was proposed to the USFS in 1991 by Plexus Corporation (now known as Kinross Copper Corporation) and approved in the Decision Notice for the Environmental Impact Statement in April 1993. Since that time, Kinross has attempted to obtain the necessary permits needed to operate the mine as described in the EIS completed for the project. In the fall of 1993, it was discovered that a ruling by the ODEQ disallowed any discharge of waste water from commercial sites into streams within the North Santiam drainage. As a result of this finding, the Three-Basin Rule was established to better define the ruling. In 1994, Kinross began lobbying for a rule change to allow the mine to operate with modifications to the waste water discharge systems. No rule changes were made and subsequently in the fall of 1996, Kinross Copper Corporation filed a lawsuit against the state of Oregon in the Multnomah County Circuit Court, contending that the state violated its constitution by essentially condemning the company's property without just compensation by not allowing the development of the mine. Kinross Copper Corporation's motion was denied, and as of December of 1997 the case is now before the Oregon Court of Appeals.

Amalgamated Mill Site Clean-up Project

The Amalgamated Mining Company built the Amalgamated Mill in the 1930s and reportedly operated the site into the 1940s. The mill was primarily used to process metal sulfides and some silver and gold. The building which housed the processing activities was partially crushed by snow in 1949 and subsequently destroyed by fire. During production, mined rock transported to the site was crushed, and the desired minerals were extracted with a froth flotation process. The finely ground waste materials (tailings) were discarded downhill from the mill into a tailings pile situated on an unlined, uncovered rock bench carved out of the underlying rock by blasting. Log cribbing (wooden retaining wall) prevented the tailings from migrating toward Battle Axe Creek. The primary hazards associated with these tailings were the presence of high concentrations of heavy metals including lead, cadmium, copper, and zinc.

By 1991, the log cribbing had deteriorated and was allowing the tailings to slough towards and into Battle Axe Creek, a major tributary to the LNSR, and a water source for the City of Salem. In the fall of 1991, Hart Crowser, under a USFS contract, conducted a time-critical removal action to move the tailings away from the banks of the creek. The tailings pile was then covered with plastic and secured until a more permanent remedy could be completed. Between 1992 and 1995, the USFS and Persis Corporation (the identified Potentially Responsible Party and parent company to Shining Rock Mining Company) began negotiating for possible solutions to handle the material. In April 1996, Persis entered into ODEQs Voluntary Cleanup Program to facilitate the timely remediation of the tailings at the Amalgamated Mill site. ODEQ and the USFS, working with Persis, evaluated a number of potential remedial alternatives ranging from on-site disposal in an encapsulated fill, to removal off-site at an approved landfill facility. An extended public comment period was held from June 20 until September 20 in 1996. Subsequent to the

closing of the comment period, the U.S. Congress, through the federal appropriations process, provided \$750,000 for the off-site removal of the waste materials. Final alternative selection was made based on the combination of federal and private funding to haul the material off-site.

On March 19, 1997, the USFS signed the Record of Decision for the Amalgamated Mill Site Cleanup project, and hauling the tailings to an eastern Oregon landfill was selected as the appropriate action. Project work began in early May of 1997, and final cleanup and reclamation of the site was completed in July of 1997. Initial estimates calculated tailings and waste materials at approximately 5,500 cubic yards; however, the final quantity exceeded 7,000 cubic yards. The area received seeding and regeneration planting in October of 1997.

Jawbone Flats/Patented Claims Listed in Opal Creek Legislation

As identified in the Act, there are several patented mining claims and mill sites listed that are owned by Friends of Opal Creek (Friends), a non-profit organization created for the preservation and education of old-growth forests and ecosystems. These claims, patented in 1991 and originally owned by the Shiny Rock Mining Company, were donated to the Friends in December 1993. The Act identifies the following claims: Ruth #2, Morning Star, and Santiam #1, be donated the United States not later than 2 years after the date of enactment (September 30, 1996). This also included the patented mining claims known as the Times Mirror Claims (Eureka #6, #7, #8, and #13). For the remaining claims (Ruth #1, Princess, Black Prince, and King #4), a binding agreement must be executed between the Secretary of Agriculture and Friends, specifying the terms and conditions for the disposition of these claims. Finally, an access easement across the three mill sites (Hewitt, Poor Boy, and Starvation) (a.k.a. Jawbone Flats) must also be established within this 2-year time frame.

Major Concerns: Respondents to the watershed scoping questionnaire frequently expressed concerns about the potential impacts of the Bornite project and any future commercial mining activities to water quality, recreation, and visual resources. There is also a limited amount of concern about the impacts of recreational mining.

Recreational miners and valid claim holders are concerned about maintaining their mining rights. Currently, conflicts between recreational mining and other recreational use is limited; however, claim holders are concerned with the growing problems associated recreation use (littering, sanitation, etc.) on or adjacent to their claims.

Transportation and Travel

Roads play an important role in the level and pattern of human use in a watershed. North Fork County Road and Gates Hill Road provide the main access into the watershed. Most of the secondary roads leading from these two main roads are associated with timber management activities and are rock surfaced.

Gates on private lands limit vehicle access to public lands in the western half of the watershed either seasonally or year round (see Map 23). The BLM has also gated off areas where long-term occupancy, fire hazards, illegal dumping, and unsafe shooting have been a problem. This trend is

likely to continue, if negative impacts associated with public use are not reduced.

Much of the eastern half of the watershed is roadless. The Opal Creek Legislation requires that a transportation plan be completed for the area. While existing primary roads (2207 and 2209) some secondary roads (201 and 225) in this portion of the watershed will continue to be maintained, there may be some modifications to vehicle travel as a result of the transportation plan.

Major Concerns: Balancing resource protection with providing vehicle access to public lands will continue to be a challenge in the LNS watershed. This is especially true where public lands are intermixed with private lands.

Water Uses

Water uses and concerns within and downstream from the LNS watershed are described in the aquatic section of this chapter.

Residential and Agricultural Uses

Most of the residential dwellings in the LNS watershed are located along or near the LNSR below the Willamette NF boundary and are a mix of year-round and vacation homes. Commercial farming and livestock raising are limited in this watershed.

Past and recent timber harvest activities on private, state, and BLM-administered lands are observable in the western half of the watershed. Forest management activities on BLM-administered lands located adjacent to or near private non-forest uses, especially residential dwellings, can create potential concerns for the BLM and the residential property owners. In an effort to address these concerns early in the project planning process, areas with a potential for high sensitivity were identified in the RMP as Rural Interface Areas (RIAs). RIAs include areas where there are residential dwellings or zoning within ½ mile of BLM-administered lands.

The three primary county private land zoning classifications in the LNS watershed are forest conservation use, rural residential use, and park use. Forest conservation use is the predominate zoning (see county zoning map) and restricts lot division to no less than 80 acres; however, variances can be obtained. Most of the lands zoned for rural residential use are located in the lower portion of the LNS watershed near the LNSR. The park use zoning is for the Elkhorn Valley Golf Course.

The LNS watershed has 1,727 acres of BLM-administered lands located within a RIA ½-mile buffer (see Rural Interface map). The expected intensity of forest management activities within a RIA is guided by the underlying LUA. The potential intensity of forest management activities on lands with a LUA of GFMA would be higher than those with a CONN LUA. Significant timber harvest activities in RR are generally low. Since RR are intermixed with both the GFMA and CONN, they may help buffer some of the potential impacts of a project, depending on the specific proposal and site characteristics.

Most of the RIAs in the LNS watershed have the potential for high sensitivity depending on the project type, size, and location. Consideration of RIA issues early in the project planning process is very important in this watershed.

Major Concerns: The concerns of residential owners in the LNS watershed that are adjacent to or near public lands are focused in the protection of their quality of life related to water quality, visual resources, and disturbance (noise, dust, log truck traffic, smoke, etc.) associated with timber harvest activities. They are also concerned about the ongoing negative impacts associated with high levels of recreation use such as litter, dumping, vandalism, and theft.

Visual Resources

Though not a direct human use, the view in or from a particular area is an important resource to both those living in or visiting an area. The LNS watershed is an area with high scenic values. The watershed is dominated by a forested setting with a mix of seral stages, interspersed with water and geologic features. The west half of the LNS watershed has been modified to a greater extent by human use, associated with residential activities, timber management activities, power line corridors, and recreational activities. While one or more of these modifications are evident from a specific location in the western half of the watershed, they tend to blend in with the form and texture of the natural landscape. The eastern half of the watershed has had fewer human caused modifications and is much more natural appearing.

BLM-administered Lands: Given that BLM-administered lands are intermixed with private forest lands, the BLM has only a limited amount of control over the viewshed as a whole. Regardless of visual resource management (VRM) on BLM-administered lands, timber management activities will be observable on private forest lands. A VRM classification system was used to inventory all BLM-administered lands in the Salem District RMP. Within the VRM system, there are four classes, with scenic values on Class I lands being the most outstanding and protected, and scenic values Class IV lands being lower and in areas generally less seen with less modification restrictions. The RMP provides guidance for each VRM classification. Below is a summary of the VRM classes on BLM-administered lands in the LNS watershed (also see Map 20, Visual Resource Class with ½ mile Rural Interface Zone).

Class I	Class II	Class III	Class IV
11 acres	1,846 acres	8,727 acres	2,550 acres

Table 27. VRM Classifications in the LNS Watershed.

Class I Lands

“Provide for natural ecological changes in VRM Class I areas. Some very limited management activities may occur in these areas. The level of change to the characteristic landscape should

be very low and will not attract attention. Changes should repeat the basic elements of form, line, color, texture, and scale found in the predominant natural features of the characteristic landscape.”

Class I lands in the LNS watershed are made up of several isolated waterfalls (see VRM Classification Map) and make up less than 1 percent of BLM-administered lands. There is no developed access to the waterfalls. All of the falls are located within a RR, which should provide an adequate buffer from any adjacent projects. Each will have to be evaluated on an individual basis should a nearby project be proposed.

Class II Lands

“Manage VRM Class II lands for low levels of change to the characteristic landscape. Management activities may be seen but should not attract the attention of the casual observer. Changes should repeat the basic elements of form, line, color, texture, and scale found in the predominant natural features of the characteristic landscape.”

Approximately 14 percent of BLM-administered lands in the LNS watershed are classified as Class II. Most of the Class II lands are those that are observable from the LNSR, Little North Fork Road, Elkhorn Creek, or developed public or private recreation facilities.

A general field review of the watershed indicates that the sensitivity level of the Class II lands would be fairly high depending on the individual characteristics of a proposed project. Design features such as green tree retention or buffers are very important for projects on Class II lands. The impacts on visual resources associated with any proposed project on Class II lands will need to be evaluated for each project.

Many of lands classified as Class II are observable from residences and may be located within RIAs as well. Below is a list of lands which fall into both a Class II and RIA zone. These lands should be given special consideration for any project planning.

Class II Lands in RIAs

1. Township 9 South, Range 2 East, Sections 9 and 11
2. Township 9 South, Range 3 East, Sections 1, 7, 8, 9, and 10
3. Township 8 South, Range 4 East, Section 31

Class III Lands

“Manage VRM Class III lands for moderate levels of change to the characteristic landscape. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements of form, line, color, texture, and scale found in the predominant natural features of the characteristic landscape.”

The majority (68 percent) of the BLM-administered lands in the LNS watershed are classified as VRM Class III. A brief field review of some of the Class III lands was conducted and indicates

that the overall sensitivity of Class III lands in the LNS watershed varies depending on several factors. Most of the critical viewpoints in this watershed are similar to those associated with the Class II lands but are generally not as observable. Many of the Class III lands are also intermixed with private industrial forest lands where timber management activities may be readily observable. A proposed project's impacts to visual resources on Class III lands will also vary depending on the specific project design features and a number of mitigating factors such as the presence and location of RR, roadside vegetation buffers, and vegetation buffers around residences. Again, impacts to visual resources on Class III lands should be evaluated at the project level.

Class IV Lands

“Manage VRM Class IV lands for moderate levels of change to the characteristic landscape. Management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the effect of these activities through careful location, minimal disturbance, and repeating the basic elements of form, line, color, and texture.”

Approximately 18 percent of the BLM-administered lands in the LNS watershed are classified as Class IV lands. Class IV lands generally have a low visual sensitivity and fall into the “seldom seen” category in the Salem District VRM inventory. In this watershed, Class IV lands are not observable from any critical viewpoints and are often adjacent to private industrial forest lands in which forest management activities are clearly evident. Access to some of these public lands is limited due to gated or closed roads. While sensitivity on Class IV lands is low, the impacts of any proposed projects to visual resources should still be evaluated.

USFS-administered Lands imber harvest and other human uses are much less visually evident in the eastern half of the LNS watershed. Less than 2,000 acres of the 36,000 acres of land managed by the USFS have been harvested since 1953. Most of the harvesting activities occurred in the Cedar Creek, Dry Creek Frontal, and portions of the Elkhorn Creek SWB's. Most of the other stand level disturbance visually evident in the eastern half of the watershed is attributed to fire.

When the Opal Creek legislation becomes final, only those activities which enhance the management objectives or are necessary for visitor safety will be allowed. In the interim, the viewshed in the eastern half of the watershed will be managed consistent with the guidance the Opal Creek legislation provides related to visual resources.

Recreational Uses

The LNS watershed offers a wide spectrum of scenic settings in the forested foothills of the Cascade Mountain Range for variety of developed and dispersed recreation opportunities. The LNS watershed's proximity to the population centers of Salem and Portland make it an important recreation resource in the Willamette Valley. The Opal Creek drainage is also regionally and nationally known for the educational and scientific opportunities it offers.

The mix of public and private lands and recreation facilities in the watershed makes the coordination of visitor management and providing visitor services information complex and challenging. Other than standard county road signs and recreation site entrance signs there is little visitor orientation information about the recreation facilities and opportunities available in the watershed. This is especially true during the summer weekend peak use periods when the ODF office is closed.

To more clearly describe the recreational experience the LNS watershed offers, the Recreation Opportunity Spectrum (ROS) planning system was used to inventory the recreation resources on private and public lands in the watershed. In classifying recreation opportunities, ROS considers access, remoteness, naturalness, facilities and site maintenance, social encounters, visitor impacts, and visitor management. There are seven major categories which progress from the most primitive to the most developed. These consist of primitive, semi-primitive non-motorized, semi-primitive motorized, RN, roaded modified, rural, and urban (see Appendix F2). The LNS watershed offers several of the settings including primitive, semi-primitive non-motorized, RN, roaded modified and rural.

Because the eastern half of the LNS watershed is almost contiguous USFS-administered lands, it was described separately from the western half of the watershed.

Western Half of the LNS Watershed

The lower 18-mile segment of the LNSR extends from the Willamette NF boundary to its confluence with the NSR just south of State Highway 22. The LNSR is the focal point for recreation in the western half of the watershed, offering a variety of developed and dispersed recreation opportunities.

National WSR Status

The 18-mile segment described above was found to be eligible for inclusion into the National WSR System in the BLM's Salem District RMP. The segment was given a potential "recreational" classification, and the Outstandingly Remarkable Values (ORVs) identified were scenic, recreation, and fisheries. Because the BLM administers 18 percent of the lands in the interim 1/4-mile river corridor, a suitability assessment or study was not completed in the Salem District RMP. Until a suitability assessment or study is completed, the BLM will continue to protect the ORVs and free-flowing values on BLM-administered lands within the interim boundary to the extent authorized by law.

Rural Recreation Setting and Activities

Most of the lands along the lower segment of the LNSR fall under the rural ROS setting. Rural settings are often characterized by an environment that is culturally modified to the point that it is a dominant feature with moderate social interaction expected. The primary cultural modifications along the LNSR are associated with residential dwellings, timber harvest activities, utility corridors, and public facilities (county roads, forest roads, developed recreation sites, and fire stations). Though the cultural modifications are very evident, they tend to blend with the natural

landscape, offering a modified but diverse scenic rural setting for those living in and visiting the LNS watershed. The majority of the lands along the LNSR are privately owned, limiting public river access to BLM and county-administered lands and facilities.

The primary recreation activities along the lower segment of the LNSR are water based including swimming, fishing, tubing, sunbathing, and a limited amount of non-motorized boating. Picnicking, camping, hiking, photography, scenic driving, and recreational placer mining are also popular activities. Golfing and more developed athletic activities are also available at private facilities.

The Marion County Sheriff's Department has been helpful in providing law enforcement support through a cadet program. Under the cadet program, officers-in-training patrol the high visitor use areas in full uniform and patrol vehicles. This program has helped provide increased presence in the watershed. The continuation of this program is dependant on the annual availability of funding.

Developed Recreation Facilities

All of the developed recreation facilities described below are located along the LNSR and are directly accessed from North Fork County Road (Map 22). These facilities are very popular and heavily used during the peak use season from Memorial through Labor Day weekend.

Traditional funding for recreation facilities maintenance is declining at the federal, state, and local levels. This will make looking for partnership opportunities and alternative funding sources very important in the future.

Marion County Parks: As of July 1, 1997, the Marion County Public Works Department began managing the three county parks in the LNS watershed. The parks were previously managed by the Regional Park and Recreation Agency, a partnership between the City of Salem, Marion County, and Polk County. The Public Works Department hopes to develop a management strategy for these and several other county parks in the near future. No use fees are charged at any of the sites.

All three sites are open April through October and feature popular swimming and picnicking areas. North Fork and Bear Creek Park provide paved parking, vault restrooms, picnic sites, and river access trails. Salmon Falls is a little more primitive providing gravel parking, river access, and vault restrooms. Salmon Falls also has a fish ladder structure at the falls. Although access to the ladders is blocked and prohibited, problems with individuals swimming through the ladder's chambers has been a management concern for several years.

BLM Recreation Sites

Canyon Creek and Elkhorn Valley Recreation Sites are managed by the BLM, Salem District, and are open mid-May through mid-September. Both sites have vault restrooms, potable water, river access, picnic sites, and paved parking. A volunteer campground host aids park staff in the operation of both recreation sites.

Elkhorn Valley Recreation Site has 22 family camp units and is the only developed overnight facility in the western half of the LNS watershed. Elkhorn also has a 2-mile trail system, some of which has river frontage. Planned improvements include installing a chlorinated water system with spigots at key locations in the park and providing electricity for lighting to the restrooms and to the host site by the spring of 1998. There is room for facility expansion in the park at Area C, a previously developed area that was decommissioned several years ago. Several years ago another location was seriously damaged, and there was not sufficient funds to repair the site. The structures in Area C were transferred to the damaged site so it could remain. The site could be rebuilt as individual units or as a group-use area. There may also be potential for future development on BLM-administered lands on the other side of the LNSR. Additional expansion of the site would also be possible if adjacent private landowners ever express an interest in an exchange or acquisition.

Dispersed Use

Dispersed recreation opportunities along the LNSR are fairly limited in the western half of the watershed. Marion County has several long pullouts buffered with an island of vegetation along North Fork County Road; these are used by the public as parking and river access to the LNSR. There are no restroom, water, or trash services in the pullouts. Overnight use is prohibited, although a limited amount does occur. Marion County has closed some of the pullouts and is evaluating the long-term status of the remaining ones.

Roaded Modified Recreation Setting and Activities

Most of the remaining lands in the western half of the LNS watershed (excluding Elkhorn Creek National WSR) fall under the roaded modified setting. Roaded modified settings are often characterized by a forest or other natural environment, with obvious modifications such as logging, mining activities, road access, and some facility development. Moderate social interaction is expected.

The natural setting on private and public lands has been significantly modified in many areas by timber harvest activities and high road densities. Public access to parts of the watershed are limited by private and BLM gates (see Map 23). Road gating has occurred as a result of repeated problems with garbage dumping, unsafe firearm use, vandalism, equipment damage, vehicle abandonment, long-term occupancy, and unsafe fire use. There are small pockets of RN (less than 500 acres); however, they are not large enough to warrant a distinction from the dominant Roaded Modified setting.

There are no developed facilities in the roaded modified setting in the LNS watershed. Use of the roaded modified lands is moderate. Dispersed campsites can be found at many of the old timber harvest landings and at the end of short spur roads in areas that are open to vehicular access. Buck Lake, a small lake located on BLM-administered lands in the southeast portion of the watershed, also receives dispersed camping and day-use. Problems with litter and vehicle abandonment have made it necessary to block vehicle access to the lake, but walk-in access is welcome.

In addition to some of the recreational activities described for lands in the rural setting above, lands in the roaded modified setting also receive uses such as hunting, target shooting, horseback riding, and off-highway vehicle (OHV) use. No quantifiable visitor information is available, but observation indicates that use is moderate in areas that are accessible by vehicle. Under the Salem District RMP, OHV use on lands in the western half of the watershed would be limited to existing roads and designated trails. Though there are historically used trails, there are currently no designated trails, so OHV use off existing roads is not allowed.

Eastern Half of the LNS Watershed

The eastern half of the LNS watershed is predominately managed by the USFS, Detroit Ranger District. Protecting and preserving the Opal Creek and Battle Axe drainage has been the subject of significant public and political interest since the 1970s. The Opal Creek drainage has been advertised by the media as having some of the oldest forests in Oregon; however, much of the drainage is mature forest rather than old growth. The Cedar Creek drainage has also been the site of recent controversy with the proposed but currently delayed Bornite Copper Mine (see mining section page 55). The eastern half of the watershed also provides a scenic and predominately natural and unmodified setting for a variety of recreational opportunities.

Opal Creek Wilderness and Opal Creek Scenic Recreation Area Act of 1996

As described by the Opal Creek Legislation, the proposed OCW contains approximately 12,800 acres. Some of those lands (6,378 acres) are currently part of Bull of the Woods Wilderness and would be incorporated on the OCW when the conditions of the legislation are met. The proposed Opal Creek SRA contains approximately 13,000 acres which encompasses much of the remaining USFS lands in the LNS watershed including the upper segment of the LNSR, Elkhorn Creek, and the Little Cedar Creek drainages (see LUA Map). Until the conditions of the legislation are met, the USFS interim policy is to manage the lands identified in a manner consistent with the guidance specified in the Act.

Oregon State Scenic Waterway and National WSR Status

In 1985, a 7-mile segment of the LNSR extending from the confluence of Opal Creek and Battle Axe Creek to the Willamette NF boundary was designated an Oregon State Scenic Waterway. The primary objectives of this program are to “Protect the free-flowing character of designated rivers; protect and enhance scenic, aesthetic, natural, recreation, and scientific and fish and wildlife quality along scenic waterways; and to protect private property rights.” A management plan or specific management recommendations have not been developed by the state for the LNSR. However, they would like to participate in any future planning efforts related to the river.

The same river segment was found to be eligible for inclusion into the National WSRs System by a resource assessment completed by the USFS. The ORVs identified were scenic, recreation, historic, and fisheries. The potential classifications for the segment were “Scenic” from the headwaters to Gold Creek; “Wild” from Gold Creek to Shady Cove Campground; and “Recreational” from Shady Cove Campground to the Willamette NF boundary. A USFS resource assessment also found a 4-mile segment of Opal Creek, flowing from the headwaters at Opal Lake to the confluence of Battle Axe Creek and the LNSR, to be eligible with a potential classification of “Wild.” The ORVs identified were scenic and water quality. A suitability study has not been completed for either river segment.

Trail Fee Demonstration Project

In 1997, the Willamette NF was selected to participate in a fee demonstration project which involves charging trailhead parking fees. The fees collected would be used for trail maintenance

and construction. Many of the trailheads in the eastern half of the LNS watershed are part of this pilot project. To provide trail users with information about the project and to gain more visitor use data, information boards with trail registration cards were installed in the summer of 1997.

RN Recreation Setting and Activities

RN settings are often characterized by a forested or other natural environment that is mostly natural appearing as viewed from sensitive roads and trails. Social interaction is moderate but with some chance of privacy expected.

Most of the lands classified as RN are located within the proposed Opal Creek SRA. Cascading waterfalls, river rapids, deep pools, and volcanic cliffs surrounded by a mix of mature and old-growth forest provide a scenic backdrop for a variety of recreational activities. Most of the forest seral stage diversity is a result of past wildfires rather than timber harvest activities. Very few cultural modifications other than roads, recreation facilities, and historic buildings (Pearl Creek Guard Station) are observable. On site controls of recreational use are associated with signing and visitor contact by USFS recreation and law enforcement staff. Roads 2209, 2207, and 201 are the three main access roads to the eastern half of the LNS watershed. There are also several rock surfaced and unsurfaced spur roads leading to dispersed campsites.

Some of the most popular recreational activities in the proposed Opal Creek SRA include swimming, hiking, fishing, camping, gold placer mining, tubing, sunbathing, photography, and nature study.

Developed Recreation

The USFS is also experiencing funding reductions which limit the maintenance of facilities to the levels of use they currently receive. Such funding reductions will continue to be of concern for the future maintenance of existing recreation facilities and the development of new facilities. The USFS is using concessionaires to operate larger campgrounds. This allows the USFS to use the money saved to provide services to campgrounds that are not large enough to be profitable for the private sector. Shady Cove is one of those smaller campgrounds.

USFS Parks: There are two developed recreation sites in the proposed Opal Creek SRA. Shady Cove Campground has 13 family camp units and is the one of only two developed overnight recreation sites in the LNS watershed. Three Pools was previously a dispersed camping area but was made a day-use area in the early 1990s; both have vault restrooms but no potable water source. They are open all year, with the main use season being mid-May through mid-September. Weekend use, during the peak summer season, often exceeds capacity.

Pearl Creek Guard Station: The Pearl Creek Guard Station was built in the early 1930s by CCC crews to serve as a housing and stopping off place for USFS staff. Restoration work was done on the station in August of 1993, and it was occupied by a USFS seasonal staff person in the summers of 1994 and 1995; however, on-site interpretive information about the station is limited. That person was responsible for assisting in the management of Shady Cove and Three Pools and making contact with visitors in the eastern half of the watershed. Due to budgetary constraints

and safety concerns, the guard station has not been occupied since 1995. Since that time, there has been some vandalism to the building.

Private Facilities: Approximately 3.5 miles past a locked gate along Road 2209 there is an old mining camp known as Jawbone Flats. Jawbone Flats has several small cabins and is currently owned by a non-profit organization called "Friends of Opal Creek" and is maintained as an environmental educational retreat.

Dispersed Recreation

LNSR/Cedar Creek: Like the lower portion of the LNSR, the upper portion also attracts relatively high levels of dispersed day and overnight use. Most of the use occurs along several spur roads off of USFS Road 2207. Approximately 39 dispersed campsites were identified in an inventory taken in 1988. Of those sites, 11 had high user impacts (loss of vegetation, tree damage, litter, soil compaction, and erosion), 25 had moderate impacts and three had low impacts.

Though not part of the proposed Opal Creek SRA, recreation use along Cedar Creek is similar to the use occurring along the LNSR. The 1988 inventory identified 13 dispersed campsites in the Cedar Creek area. Of those sites, one had high user impacts, six had moderate impacts and six had low impacts.

Several of the dispersed sites in both areas are also popular with day users. Most of the dispersed sites along both rivers are over 150 feet from the streambank, helping to reduce potential impacts to water quality. Multiple river-access trails leading from campsites to the river are commonly found.

A new dispersed campsite inventory was started in the LNS and Cedar Creek areas in the summer of 1997. Preliminary results from the inventory indicate that both the number of dispersed sites and the level of user impacts have increased, and that very few of the 1988 sites were abandoned. Many of the sites recently surveyed are receiving levels of use similar to that of the developed sites without any facilities such as restrooms, fire rings, potable water, or trash receptacles. Patrols and visitor contacts by USFS law enforcement and recreation staff do provide some on-site presence and control.

In 1996, a USFS intern completed a recreational use assessment report based on field observations of use along the LNSR. The report indicated that visitors to this area tend to be younger (ages 15-24) and more local in origin with repeat visitation being high. It also indicated that while there may be a need for new facility development, contact with dispersed campers indicates that at least some prefer the more undeveloped and unregulated experience currently provided.

Elkhorn Lake: Elkhorn Lake is a small but popular dispersed camping area in the proposed Opal Creek SRA. One to three parties can be found camping near the lake during the peak use season. The 1988 inventory identified 10 dispersed campsites with four rated as having high user impacts, five with moderate impacts, and one with low impacts. A field review of the lake was conducted in August of 1997, and no significant changes in the level of impacts or number of sites were

observed. Without any developed facilities, sanitation, litter, and fire hazards are still a concern. Patrols by USFS staff are also conducted at Elkhorn Lake.

Elkhorn National WSR: The Opal Creek Legislation also designated a 6.4-mile segment of Elkhorn Creek a National WSR to be managed by the USFS and the BLM. A 5.8-mile segment extending from the Willamette NF boundary on the common section line between Sections 12 and 13, Township 9 South, Range 4 East, Willamette Meridian, to its confluence with Buck Creek (see LUA map) will be managed under a “Wild” classification. The last 0.6-mile segment extending from the confluence with Buck Creek to the point where the segment leaves federal ownership will be managed under a “Scenic” classification (see Ownership and Classification Table).

Table 28. Elkhorn Creek National WSR Ownership and Classifications.

Ownership	Scenic Classification	Wild Classification	Total
BLM	0.6	2.4	3.0
USFS	0.0	3.4	3.4
Total	0.6	5.8	6.4

There are no developed recreation facilities near Elkhorn Creek, and dispersed use is low. Access to much of the wild segment of the river is limited due to extremely steep slopes. The scenic section of the river is more accessible and offers greater potential for primitive recreation facility and trail development. A management plan for the river will be completed jointly by the USFS and the BLM as part of the proposed Opal Creek SRA planning process.

North Fork Trail: The North Fork Trail is the only trail located within the proposed Opal Creek SRA, and is one of the more popular trails in the LNS watershed. The forested 4.2-mile trail can be accessed from either end at Shady Cove Campground or Road 201 (See Recreation Map) and parallels the LNSR most of the way. This trail has the potential for expansion east of Shady Cove along the LNSR.

Opal Creek Gate and Other Trailheads: Road 2209 is gated approximately 5.5 miles from where it begins. Over 60 vehicles are often observed on the weekends during the summer, making this the most popular trailhead in the USFS Detroit Ranger District. The trailhead provides parking to visitors using the Kopetski Trail and several other trails in the LNS watershed.

Preliminary trailhead registration information indicates that Opal Creek is the primary destination from this trailhead. However, other destinations such as Twin Lakes, Whetstone Mountain, Beachie Creek, and Battle Axe Creek were also mentioned. The majority of visitation is day use. However, some of the visitors stay overnight Shady Cove Campground, Elkhorn Valley Recreation Site, and other locations within and outside of the watershed. Most of the trailheads for trails in the proposed OCW are located in the proposed Opal Creek SRA.

Public Access Around Jawbone Flats: Road 2209 provides access to several trails including the Kopetski Trail, the Battle Axe Trail, and the Beachie Saddle Trail. Currently, visitors must pass through Jawbone Flats to access these trails. As part of the legislation, the USFS has identified an alternate public access route to the south of Jawbone Flats that would only involve 300 yards of new trail construction and a foot bridge crossing over Opal Creek. Shortly after crossing Opal Creek the new trail would connect back up with Road 2209.

Semi-Primitive and Primitive Recreation Settings and Activities

Semi-primitive (non-motorized) settings are often characterized by a predominantly natural environment of moderate to large size. Evidence of humans and human controls is present but low. Motorized use is not permitted. Chances for social interaction is low. The lands adjacent to trails in the proposed OCW and around Opal Creek Lake are considered to be semi-primitive. These trails offer a more primitive access to the proposed OCW leading visitors through a mix of mature and old-growth forest with panoramic views of surrounding cascade mountain peaks and drainages.

Primitive settings are often characterized by an unmodified natural environment of fairly large size. Evidence of humans and human-induced restrictions and controls is essentially absent, and motorized access is not permitted. Chance of social interaction is low. Most of the lands in the LNS watershed with a primitive setting would be located in the proposed OCW in areas where there are no trails.

Most of the recreational use in the proposed OCW is associated with hiking, exploring, and photography. Trailhead registration data indicate that most of the users are repeat visitors from Oregon and more specifically from the Willamette Valley. There is a component of out-of-state use which is primarily associated with the Opal Creek drainage.

Non-Conforming Uses: Given that the majority of the proposed OCW was previously not designated wilderness, non-conforming uses or features (i.e., roads near or leading into OCW from southern boundary) should be identified and addressed in the planning process.

Limits of Acceptable Change: Currently, visitor use in the proposed OCW is relatively low. However, with the high demand for semi-primitive and primitive settings, it is likely that use could significantly increase in the future. Gathering baseline data on visitor use and wilderness conditions and establishing limits of acceptable change standards and monitoring guidelines would help wilderness managers recognize when uses are in danger of compromising wilderness values.

Dispersed Use

Opal Creek Area and Kopetski Trail: The trailhead for the Kopetski Trail is located off of Road 2209 approximately 2.5 miles past the locked gate. From the trailhead, the Kopetski Trail continues for one mile to Jawbone Flats and then heads south along Opal Creek for approximately two miles. Along the trail, visitors can experience first hand old-growth forest habitat and the crystal clear waters and deep pools of Opal Creek. The trail is moderate to difficult

and is rocky and narrow in places. There is potential for extending the trail south to connect up with Opal Lake and other trails in the southern portion of the watershed.

In 1996, a USFS intern completed a recreation use study for the Opal Creek drainage. The visitor use data from that study indicate that over 79 percent of the survey respondents were day users (trailhead registration cards from the summer of 1997 also support more day use than overnight use). The survey did not ask for overnight use locations, but the average length of stay was one to two nights. Hiking was listed as the most common recreational activity in the survey, and environmental education, camping, bicycling, and fishing were also mentioned.

Over 58 percent of the respondents also indicated that they were first-time visitors. Observation and visitor contact by USFS staff indicate that the Opal Creek drainage receives a higher level of first and one-time visitors than other areas in the eastern half of the LNS watershed.

Opal Lake and Trail: A 0.5-mile trail off of Road 2207 provides access to Opal Lake. Eight dispersed campsites were identified in the 1988 inventory. Of those sites only one had high user impacts, three had moderate impacts, and four had low impacts. One section of the trail leading to the lake goes through a wet area. Relocating this section of the trail is necessary to better meet ACS Objectives.

Henline Falls Trail is only 0.25-mile long and provides fairly easy access to a scenic overlook where Henline Creek shoots over a cliff into a deep pool below. This is one of the most popular trails in the LNS watershed, and visitation is primarily day use.

Other Trails

There are several other trails which fall entirely or partially within the proposed OCW (see Recreation Map). All of these trails receive fairly light use and have fairly primitive single-track trail design and maintenance standards.

Henline Mountain Trail is a steep 2.7-mile trail that provides hikers with panoramic views of the surrounding peaks and valleys on a clear day. Fire rings on the overlook at the top indicate that there may be infrequent overnight use.

Whetstone Trail is a steep and rugged 8.1-mile trail that offers hikers views of Mt. Hood and the Opal Creek drainage from an old lookout at the top of Whetstone Mountain.

Elkhorn Ridge/Phantom Natural Bridge Trail varies in length depending on the route taken. It can be accessed from either Road 201 or Road 2223 and ties into the French Creek Trail near Road 2223. The trail offers views of Mt. Jefferson and Opal Creek and features Phantom Natural Bridge, a naturally formed basalt rock bridge.

French Creek Trail is a 7.7-mile trail that runs along the southern boundary of the watershed and offers opportunities for remoteness and solitude.

The Battle Axe Mountain Trail runs along 5 miles of an old road bed and provides access to the

Ruth Mines and the old Battle Axe lookout. Visitors wishing to access this area must walk through Jawbone Flats on Road 2209.

Beachie Saddle Trail is a 2.7-mile scenic forested trail which overlooks the West Humbug and the Opal Creek drainages.

Estimates For LNS Water Visitor Use

There is no quantitative field-based recreation visitation data available for the LNS watershed. Limited field observation indicates that visitation to this watershed is moderate, with the peak use season being high. Much of this use is concentrated along the LNSR and in the Opal Creek drainage.

The western half of the LNS watershed includes all of the BLM's LNS Special Recreation Management Area and part of the Cascades Extensive Recreation Management Area. Based on the Statewide Comprehensive Outdoor Recreation Plan (SCORP) use estimates for Region 8, visitation on BLM-administered lands in the western half of the watershed is estimated at 29,205 people per year. More field-based use data is needed.

Current Recreation Demands

Besides estimating current and projecting future visitation levels, SCORP also analyzed the supply and demand relationship between ROS settings and recreational activities. While the same activity can occur in several different ROS settings, an individual's experience is expected to vary by setting. The SCORP report compared a category of currently "Used" ROS setting to a "Preferred" amount of use for several recreational activities in each ROS setting. Those activities that show a higher "Preferred" than "Used" suggest that there may be an inadequate supply of that setting for a particular activity in Region 8. The SCORP data indicate that there is a shortage of both primitive and semi-primitive settings for most of the recreational activities in Region 8. This is also true for most of the other regions in Oregon.

Under the Opal Creek Legislation, the eastern half of the LNS watershed has the opportunity for meeting some of the current and growing demand for semi-primitive and primitive settings. While the lands directly adjacent to the LNS River are heavily used, much of the uplands remain relatively remote.

SCORP data indicate that the "Used" category outweighs the "Preferred" category for most recreation activities in the rural and RN settings. However, given the convenience and the high quality recreation opportunities the LNS River provides, it will continue to play an important role in meeting demands for several water-based recreation activities both within and outside of Region 8. As long as the supply of primitive and semi-primitive is unmet, many of the activities will continue to take place in rural, roaded modified and RN settings.

The SCORP report also found that the top three barriers to participation in outdoor recreation activities were lack of time, distance to area too far, and too many people. Given the proximity of the LNS watershed to relatively large and growing communities, the recreation opportunities this

watershed offers will become increasingly important and more difficult to maintain. As knowledge of the area grows, management will become more important to preserving a high quality experience within these settings.

Major Concerns

Maintaining public vehicle access to public lands will always be of concern to many visitors; however, until cost effective alternatives become available, road closures on public and private land are likely to continue.

Some of the major concerns to private and public landowners in the watershed are associated with the negative impacts of recreational use. These include littering, reckless driving, loitering near and jumping off bridges, vandalism, unsafe firearm use, underage drinking, excessive parties, and long-term occupancy. Existing developed overnight and day-use facilities are not adequate to meet the current use. This makes sanitation and other impacts related to dispersed camping a concern.

A limited amount of interagency coordination between the federal, state, local, and private landowners in the watershed has occurred to address some of these concerns; however, there are opportunities for improvement.