

Social Assessment

Eddy Gulch Late-Successional Reserve Fuels / Habitat Protection Project

June 9, 2009

A social analysis uses social science information to determine how proposed actions affect humans. Because changes in the management policy of the Klamath National Forest established by the Klamath National Forest Land and Resource Management Plan (Klamath LRMP) are not proposed, the social effects of this single proposal are limited in scope. For the Eddy Gulch Late-Successional Reserve Fuels / Habitat Protection Project (Eddy Gulch LSR Project), effects on social values are discussed in narrative form. Indicators of the social environment are local community capacity, economics, visual quality (scenery), recreation, human health and safety, roadless areas, Wild and Scenic Rivers, transportation, heritage resources, and environmental justice.

The *Multiple Use-Sustained Yield Act of 1960*, the *Forest and Rangeland Renewable Resources Planning Act of 1974*, and the *National Forest Management Act of 1976* direct the National Forests to supply goods and services and be managed for a broad array of resources. Consistent with these guiding laws, the land allocations and management direction for the Forest were established in the Klamath LRMP with the signing of its Record of Decision on July 5, 1995 (USFS 1995a and 1995c). The Eddy Gulch LSR Project does not propose changes in the management policy of the Forest, but rather, it is a mechanism for implementing the management direction already established. Therefore, the social effects of this single proposal are limited in scope. United States Forest Service Manual 1973 requires a social effects analysis if the potential social effects of Forest Service actions are important to the decision (USFS 1992). Although important, social effects were not identified as a significant issue for the Eddy Gulch LSR Project proposal, so an extensive analysis is not necessary (USFS 1988).

Social analysis at broader scales was incorporated in the Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl (USDA, USDI 1994), the Environmental Impact Statement for the Klamath National Forest Land and Resource Management Plan (USFS 1995a), and the Northwest Forest Plan: The First Ten Years, Socioeconomic Monitoring Results (Charnley et al. 2005, Moeur et al. 2005). This social analysis for the Eddy Gulch LSR Project is based, in part, on the analyses on pages 3&4-260 through 3&4-319 of the Final Supplemental Environmental Impact Statement as well as on the analyses on pages 3-130 through 3-134 and pages 4-159 through 4-162 of the Forest Plan Environmental Impact Statement. Some people have requested the Forest provide more protection of northern spotted owls, others have identified their use of the Forest for recreation and aesthetic values (including visual resources), while some analysis has considered the expected effects on communities of reduced timber harvest and community assistance programs (Final Supplemental Environmental Impact Statement and the Northwest Forest Plan: The First Ten Years, Socioeconomic Monitoring Results). The Forest Plan Environmental Impact Statement discusses the effects of the land allocations on selected forest user groups.

Historical Social Setting

Contemporary American Indian land use is limited to seasonal gathering of vegetal materials such as iknish (wild celery) with a few tribal members taking part in the activities. Historic land use within the watershed is basically one of resource extraction. By the 1860s, gold mining dominated the landscape wherein various gold mining technologies occurred. Mining evolved from low impact placer mining to high impact hydraulic and dredge mining. During the Depression Era, gold mining was mainly limited to small, placer mining operations. Today, six mining claims remain active and are limited to pan or recreational dredge mining. At the turn of the century, Cinnabar Springs became famous in Northern California and Southern Oregon as a destination point for people seeking its curative powers. The mineral waters supposedly cured everything from stomach ailments to pregnancy. Railroad logging began in 1907 and continued until 1934 when Fruit Growers Supply Company pulled the tracks and converted to truck logging. Railroad logging increased dramatically after 1909 when the Northern California Lumber Company was taken over by Fruit Growers Supply Company. In the early years, fires were a common occurrence in the woods until spark arresters were installed on donkey engines. More recently, old railroad grades have gradually converted to roadbeds which now allow recreationists easy access for a variety of activities.

American Indians resided in the Salmon River drainage for thousands of years prior to contact with Europeans. Areas that sustained American Indian use generally are located within deep canyons adjacent to the Salmon River and secondary streams. These are the areas most likely to contain American Indian cultural resources. Currently, Indian use of the Assessment Area is very low; only one prehistoric site has been recorded. No sacred/spiritual-use sites or traditional plant-gathering sites have been documented.

Members of the Shasta and Karuk tribes continue to be an integral part of communities along the Salmon River and its tributaries. They use the area for gathering of traditional materials and foods, including beargrass, willows, fish, acorns, and mushrooms. Throughout their history, American Indians have utilized fire to enhance conditions for traditional materials; however, this practice is not currently being implemented in the Eddy Gulch area.

Historic resources include trails, mining sites, logging camps, communities, isolated structures, and artifact scatters. Portions of the Live Yankee Gulch and Eddy Gulch watersheds are part of a historic mining district, with numerous mining-related artifacts and sites. Twenty-three historic properties related to mining or other historic uses have been recorded for the APE and were visited. Two sites could not be relocated, and one no longer exists. One site (White's Gulch Arrastra) is on the National Register of Historic Places. No determinations have been made on the other sites.

Methodology

The analyses contained in this section are summarized from the following resource reports for the Eddy Gulch LSR Project (these reports are on the project website: <http://www.eddylsrproject.com>):

- Economic Report
- Scenery Report
- Recreation Report
- Wild and Scenic Rivers Report
- Roads Report
- Heritage Report

Affected Environment and Environmental Consequences

The Klamath National Forest lies in Siskiyou County, California, and a small portion of Jackson County, Oregon. The Eddy Gulch LSR Project Assessment Area is contained entirely in Siskiyou County. The county, the Salmon River subbasin, and Eddy Gulch LSR Project Assessment Area make up the analysis area for determining current conditions and project effects on social values.

Community Capacity

Affected Environment

Community capacity (the community's ability to respond to stresses and take advantage of opportunities to meet community needs) is fluid. The infrastructure (underlying framework) in small communities surrounding the Assessment Area is limited and unemployment and poverty are high (Doak and Kusel 1997).

The Salmon River Subbasin is an unincorporated area of Siskiyou County are in the Salmon River Subbasin. Approximately 250 people currently reside in the Subbasin, and residences are dispersed throughout the subbasin, with concentrations located in or near the towns of Sawyers Bar, Cecilville, Somes Bar, and Forks of Salmon. The subbasin also contains several outlying small neighborhoods and isolated forest residencies. The "Social Assessment" provides additional information about community capacity and community well-being and effects on these elements that could result from implementation of the Eddy Gulch LSR Project.

Environmental Consequences

Alternative A

The future social situation in the vicinity of the project would likely be similar to the present. Community capacity and infrastructure would remain limited, and unemployment and poverty would remain high where it is currently high. Wildfires can result in both negative and positive effects on community capacity. Short-term negative effects on community well-being can occur if residents are temporarily displaced from their homes or communities during wildfire. Fires can also provide employment opportunities for the local community in suppression and rehabilitation activities.

Alternatives B and C

Alternatives B and C would not affect the future social situation in the vicinity of the Eddy Gulch LSR Project. Community capacity and infrastructure would remain limited, and unemployment and poverty would remain high where it is currently high. There would be a contribution to contract work in the local communities from either action alternative, which could result in beneficial effects.

Economics

Affected Environment

The analysis area for economics is Siskiyou County. Available employment opportunities include logging, planting, precommercial thinning, masticating, and conducting surveys. People in the area spend money on gas, equipment, clothing, and food, which creates a small multiplier effect in Siskiyou County. People employed by nonprofit groups also work in the county. Activities such as hunting and recreational use can generate direct or indirect employment, which can be cumulative when combined with employment generated by project activities. The median number of households in the county (as of 2000) was 18,556, and the median household income (in 2004) was \$32,531. The median per capita income (2004) was \$17,570.

Environmental Consequences

Alternative A

Timber or biomass from the Assessment Area would not be available to regional markets, and demands will be satisfied by other domestic or foreign sources. Contract work from awarded timber sales, stewardship contracts, road contracts, and survey work would not be realized. Conversely, there would be no costs associated with hazardous fuels reduction and no funding needs for fuel reduction work proposed throughout the Assessment Area

The calculated value of benefits is related to the value of timber that would be lost if the 7,200-acre wildfire modeled for Alternative A were to occur. For this analysis, the volume of timber killed in the 7,200 acres was calculated using the 1995 Timber Type Inventory, volumes from stand examination data processed using Forest Vegetation Simulator, and values calculated for the harvest units. The estimated volume lost would be 1,005,400 thousand board feet (MBF), with a current value of \$119.18 per MBF. Thus, the total value of lost timber would be \$12,828,450. The discounted value would be \$11,449,759.

Alternative B

Alternative B would result in a positive residual value and would provide for jobs and the production of wood commodities, which would have economic benefits for the surrounding communities.

With an estimated volume of 10.8 million board feet (MMBF), this alternative could potentially create 108 jobs. It would also provide the wood commodity to support local mills and provide the basis of numerous products sold abroad. The positive residual value from thinning treatments in M Units would be approximately \$1,286,301. The total discounted cost for mastication and underburning in FRZs, underburning in Rx Units, and hand cutting, piling, and burning in RS treatments would be approximately \$4,976,661. Alternative B would result in beneficial effects on the local communities and Siskiyou County.

Alternative C

Alternative C would also result in a positive residual value and would provide for jobs and the production of wood commodities, which would have economic benefits for the surrounding communities.

With an estimated volume of 9.6 MMBF, Alternative C could potentially create 96 jobs. It would also provide the wood commodity to support local mills and provide the basis of numerous products sold abroad. The total discounted cost for mastication and underburning in FRZs, underburning in Rx Units, and hand cutting, piling, and burning in RS treatments would be \$4,953,088. Alternative C would result in beneficial effects.

Environmental Justice

Affected Environment

Executive Order 12898 requires that each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, “disproportionately high and adverse human health or environmental effects” of its programs, policies, and activities on minority populations and low-income populations.

This assessment was conducted using the format described in the “Guide for Environmental Justice Analysis with the Environmental Impact Analysis Process” (USAF 1997). The analysis area for Environmental Justice is Siskiyou County, California.

The census data for Siskiyou County was obtained from the United States Census Bureau (USCB 2005). The data show that the population of Siskiyou County is made up of Caucasians (82 percent), Hispanics (9 percent), Native Americans (4 percent), Blacks (1.4 percent), and Asians or Hawaiians (1.4 percent) (2005 data). Approximately 15.5 percent of the population is below the poverty line (2004 data). There is no specific data for the rural communities in the vicinity of the Eddy Gulch LSR Project Assessment Area. The Salmon River Community Wildfire Protection Plan (CWPP) (SRFSC 2007) contains additional information about the rural communities and neighborhoods in the vicinity of the Eddy Gulch LSR.

Environmental Consequences

Alternative A

No disproportionately high or adverse human health or environmental effects on minority populations and low-income populations would occur under Alternative A.

Alternatives B and C

No disproportionately high or adverse human health or environmental effects on minority populations and low-income populations would occur under Alternative B or C.

Human Health and Safety

Affected Environment

The analysis area for health and safety is the Eddy Gulch LSR Project Assessment Area. A number of laws and regulations to protect human health and safety govern forest practices, including the *Federal Highway Safety Act*, Occupational Safety and Health Administration regulations, and air quality regulations.

Environmental Consequences

Alternative A

Alternative A would not implement fuels reduction treatments to improve the safety of travelers on emergency access routes within the Eddy Gulch LSR, as specified in the Salmon River CWPP. This would result in potential adverse effects on residents and suppression crews in the event of a wildfire because some roads could be blocked by fires that have jumped the road or by fallen trees. Blocked roads could require residents to take a longer route out of the area or affect the timely access of suppression crews. Refer to “Section 3.2 Forest Vegetation,” “Section 3.3 Fire, Fuels, and Air Quality,” and the “Recreation Report” for more information on the effects of taking no action under Alternative A.

Alternatives B and C

Alternatives B and C both propose fuel reduction treatments along 60 miles of emergency access routes inside FRZs and Rx Units and 16 miles of RS treatments outside of FRZs and Rx Units. There could be beneficial effects on human safety from providing safe emergency access for residents to evacuate and for suppression forces to safely enter the LSR in the event of a wildfire. Refer to “Section 3.2 Forest Vegetation” and “Section 3.3 Fire, Fuels, and Air Quality” for more information on the effects of implementing Alternative B or C.

Visual Quality (Scenery)

The visual quality analysis area for the Eddy Gulch LSR Project encompasses several Klamath LRMP (USFS 2005) “Management Areas,” which establish direction for scenic integrity (Visual Quality Objectives [VQOs]) (see the “Scenery Report” for “Map A-5. Klamath LRMP Visual Quality Objectives, as applied to

the Eddy Gulch LSR”). Sensitive viewpoints outside of the Eddy Gulch LSR have been included in the analysis area if proposed treatment areas are visible from those viewpoints.

In Eddy Gulch LSR Assessment Area, *Scenic Character* is composed of steep rugged mountain landforms, steeply incised stream channels, and diverse mixed-conifer forests. *Scenic attractiveness* varies little throughout the Assessment Area, with the majority of the Eddy Gulch LSR being “Typical or Common.” Areas within the Scenic portion of the Wild and Scenic Salmon River can be classified as “Distinctive.” “Indistinctive” areas do not occur in the Assessment Area.

The vast majority of the Eddy Gulch LSR has a *scenic integrity* goal of Partial Retention. Since the overall impression of the Assessment Area ranges from Partial Retention to Preservation, the current condition meets Klamath LRMP VQOs, even though individual disturbances may result in lower ratings in a localized area. The corridor of the “Scenic” segment of the Wild and Scenic South Fork of the Salmon River and the Pacific Crest National Scenic Trail (PCT) both have a Klamath LRMP VQO of Retention. The *scenic stability* of the Eddy Gulch LSR’s scenic character is of concern primarily because of the existing excessively dense vegetative conditions, which have largely replaced attractive scenery attributes such as open and diverse forest canopies, large tree prominence, and views to understory vegetation and wildlife. Many of the stands may not be sustainable because they have departed too far from reference/historic conditions. The existing *scenic stability* for the majority of the Assessment Area is low primarily due to the high probability of large stand-replacing fires in the Eddy Gulch LSR, which would further threaten and impair the historic scenery attributes above.

Environmental Consequences

Alternative A

There would be no direct effects on Scenic Stability and Scenic Integrity from the no-action alternative. Indirect effects would result from maintaining current vegetation conditions and fuel loads. Scenic Stability could degrade further from *low* to *low/very low* if future vegetation growth of ladder fuels (overly dense stands of small and intermediate size trees) and lack of open stands increases the wildfire risk. Climate change may result in further drying conditions and an extended dry season, further increasing the risk of fire and lowering the areas of Scenic Stability currently rated as moderate/low to a low/very low level.

Uncontrolled burning of large wildfires that exceeds the area’s historic range in terms of size and intensity could result in significant impairments to both Scenic Integrity and Scenic Stability. Due to the density of vegetation growth in the Assessment Area, wildfires covering a projected 5,065 acres of passive crown fire and 780 acres of active crown fire would likely create uncharacteristically large openings in the forest canopy, exposing existing roadway disturbances and the effects resulting from past salvage operations. These effects have a strong probability of lowering the Scenic Integrity levels to “Modification” or “Maximum Modification,” which are well outside Klamath LRMP VQOs. Such large fires would also reduce the presence of attractive forest canopy attributes for long periods of time, further impairing the existing poor Scenic Stability conditions. In summary, this alternative continues and increases the likelihood of large wildfires indirectly resulting in long-term major adverse effects on scenery.

Alternatives B and C

The Eddy Gulch LSR Project would result in two primary moderate to major beneficial effects: (1) increase in Scenic Stability due to reduction of fire hazard, and (2) increase in scenic character due to creating more open, park-like forest canopy conditions with larger trees. Potentially adverse effects would generally range from negligible to minor and include scenery disturbance effects such as stump visibility from moderate concern roads, visibility of temporary roads, and visibility of cable corridors. The “Scenery

Report” and “Scenery Analysis” provide considerable information about current conditions in the Assessment Area and detailed discussion of how visual quality would be affected by project activities.

The thinning that would occur in FRZs would reduce the likelihood of a large wildfire spreading from one watershed to the next, thereby increasing Scenic Stability throughout the Assessment Area. Reducing ladder fuels through prescribed burning would reduce the likelihood that a large stand-replacing wildfire that exceeds the historic range of variability would occur in the Assessment Area, and as a result increasing resiliency of valued scenic resources and improving Scenic Stability to moderate to high levels. This thinning would also increase the development of large tree character in these stands, which is an important scenery attribute enhancement.

Moderate beneficial effects on scenic character of the PCT foreground views include creating more open, park-like settings with larger trees and better visibility into the forest (middle-ground and back-ground views from PCT and other identified trails would remain within the historical range of variability). Potentially short-term moderate adverse effects on Scenic Integrity include visible disturbance in foreground through stumps, slash, and other debris, and/or evidence of tractor operations and skid and cable corridors. Implementing RPMs (which include flush-cutting and obscuring stumps and removal of debris from the vicinity of the PCT) will reduce these potential effects to minor or negligible levels. The one mastication treatment visible from the PCT is approximately 400 feet below the trail, thus only the tops of the trees would be visible, and treatments within this unit would have negligible effects on PCT users. Effects of fuel reduction treatments on Scenic Integrity occurring in middleground and background views would be negligible.

Recreation

Affected Environment

According to an August 2002 National Visitor Use Monitoring Report (USFS 2002), the popular recreational activities in the Klamath National Forest include viewing wildlife and scenery, general relaxing and retreat, pleasure driving, hiking/walking, camping, picnicking, nature study, off-highway vehicle use, fishing, and cross-country skiing / snowshoeing.

Existing camping areas include Shadow Creek and Idlewild (outside, but adjacent to the LSR). Campgrounds outside, but nearby, the LSR include Mulebridge, Shadow Creek, Trail Creek, and East Fork. Matthews Creek and the Matthews Creek river access border the Assessment Area’s southwest corner. Existing recreation / hiking trails include the PCT and numerous trails in and around the Russian Wilderness, along Russian Creek, following the east fork of Whites Gulch, and along Sixmile Creek and Trail Creek. Additionally, the Deacon Lee trailhead provides access to the Deacon Lee trail eastward to the Russian Wilderness. During the summer months, whitewater rafting and kayaking are popular activities on the South Fork of the Salmon River below Matthews Creek. The North Fork of the Salmon River only skirts the Eddy Gulch LSR for a short distance, and no segments of the Salmon River lie entirely within the LSR; however, camping sites located in the Assessment Area could serve as staging areas for boating expeditions.

According to the Klamath LRMP (USFS 1995a), 20 percent of visitors engage in recreation at developed sites, with 80 percent participating in dispersed activities such as hiking, fishing, and nature viewing. The Klamath LRMP places emphasis on dispersed recreation, particularly in the LSRs, as well as maintenance of existing developed sites.

Most of the LSR that was inventoried as Roaded Modified in 1990 has regrown sufficiently to be classified today as Roaded Natural. Some of it would be classified as Semi-Primitive Motorized depending on the size of the area and primitive nature of the roads. The inventoried roadless areas retain most of their Semi-Primitive Non-Motorized and Primitive characteristics.

Environmental Consequences

Alternative A

Direct and indirect effects of the no-action alternative on recreation would be negligible and remain within Semi-Primitive or Roaded Natural Recreation Opportunity Spectrum (ROS) classes. Cumulative effects of continuing current vegetation management, combined with a large wildfire, would be major and adverse and result in conditions not meeting Klamath LRMP ROS directives.

Alternatives B and C

Alternatives B and C would have major beneficial effects on recreation setting and experience primarily through reduction of the possibility of a major wildfire. Minor beneficial effects would occur due to creation of a more open, park-like setting with large trees and increased opportunities for wildlife viewing. Temporary adverse effects could occur primarily due to the effect of fuel reduction treatments and prescribed burning. These effects would be reduced to minor levels with proper scheduling and implementation of standard health and safety measures. Except for these temporary effects, the Roaded Primitive and Semi-Primitive Natural ROS classes would continue to be met.

Wild and Scenic Rivers

The *Wild and Scenic River Act* was created in 1968 to preserve selected rivers in a free-flowing condition and to protect their associated river resources. Most of the North and South Forks of the Salmon River, as well as a segment of Russian Creek in the Eddy Gulch LSR, are either Designated as, or Recommended for, future designation as segments of the National Wild and Scenic River (WSR) system, with a "Recreational" WSR classification (USFS 1995). Fisheries is the primary "outstandingly remarkable" value for the North Fork and South Fork of the Salmon. Other WSR values to be protected include free-flowing condition, water quality, and scenery. Fisheries, water quality, and wildlife are the primary "outstandingly remarkable" values for the East Fork South Fork Salmon River. In particular, values to protect include pristine riparian habitat, high quality water, a peregrine falcon eyrie, goshawk territory, fisher, and pileated woodpecker habitat. Outstandingly remarkable values for South Russian Creek include vegetation and water quality, and the specific values to protect are vegetation diversity, including a stand of old-growth Engelmann spruce and a pristine watershed.

A section of the North Fork of the Salmon River that flows through the Assessment Area is a Designated "Recreational" WSR. Additionally, a nearby portion of the North Fork of the Salmon River is a Recommended WSR eligible for "Wild" classification, although this area is outside the LSR boundary within the Marble Mountain Wilderness Area. One Designated WSR segment of the South Fork of the Salmon River contains sufficiently primitive and undeveloped character, dramatic scenic bluffs and incised canyons, to be classified as "Scenic." There is also a portion of the South Fork of the Salmon River that occurs in the Assessment Area that is Recommended as a WSR with a "Recreational" classification. Russian Creek occurs in the Assessment Area and is Recommended as a WSR, with this segment recommended for classification as "Recreational." Outside of the Assessment Area, within the Russian Wilderness Area, a second nearly pristine segment of Russian Creek has been recommended as a WSR with a "Wild" classification. The few "Distinctive" *scenic attractiveness* areas in the Assessment Area are located in the WSR corridors.

Environmental Consequences

The analysis for Wild and Scenic Rivers focuses on the effects to the integrity of the WSR corridors and protection of their Outstandingly Remarkable Values, and other WSR values (Water Quality, Free-flowing Condition, and Scenery), per requirements of the Klamath LRMP, Aquatic Conservation Strategy Objectives, and other pertinent laws and direction.

Alternative A

Potential benefits of the no-action alternative would be negligible on free-flowing condition, scenery, water quality, fisheries, watershed condition, wildlife/riparian habitat, and vegetation diversity; however, when considered cumulatively with the possibility of future wildfire, the no-action alternative has the potential for major adverse effects on Outstandingly Remarkable Values in fisheries and water quality on the North and South Fork of the Salmon River; pristine watershed condition and vegetation diversity on Russian Creek; and fisheries, riparian habitat, and wildlife on the East Fork South Fork Salmon River. WSR values and resources are fully protected per LRMP direction and associated resource requirements, such as the Aquatic Conservation Strategy, and current/potential WSR classifications may not be perpetuated under the no-action alternative.

Alternatives B and C

Minor beneficial effects on “outstandingly remarkable” values include protection of larger trees and vegetation in and around the riparian corridor and reduction of the risk of the amount of high intensity wildfire in the area. These two alternatives would have no adverse effects on free-flow and the other outstandingly remarkable values of Recommended Rivers (vegetation diversity, watershed condition, fisheries, and wildlife/riparian habitat). All WSR values and resources are fully protected per LRMP direction and associated resource requirements, such as the Aquatic Conservation Strategy, and due to the project design, including current resources protection measures, **would not** “adversely impact the river’s eligibility or designation.” The current/potential WSR classifications will be perpetuated through implementation of Alternatives B and C. For more information on potential project effects on the North and South Forks of the Salmon River and South Russian Creek, refer to Section 3.5 above and also the Aquatic Resources Report for Water Quality and Fisheries.

Transportation

Affected Environment

The Eddy Gulch LSR Assessment Area is well roaded. The road network provides access for management activities, human uses, recreation, firefighting, and other emergency responses. The system roads are very stable with few, if any, problem spots. There is little sediment coming off of the roads in the Assessment Area, and the road system will function for commercial use with only maintenance. The unauthorized roads in the Assessment Area are mostly former logging access routes, abandoned railroad grades, or roads created to access camp sites or water sources.

Environmental Consequences

Alternative A

The no-action alternative would provide for continued routine maintenance on system roads as funding allows. Continued road system improvements by the Klamath National Forest would result in short- and long-term minor to major beneficial effects, depending on the extent of future improvements.

Alternatives B and C

Maintenance of haul roads by the project would improve driver safety and comfort by clearing, blading, and dust abatement where required for haul. Clearing roadside vegetation would improve visibility. Blading would remove rocks and debris and smooth the road surface. Dust abatement would improve user safety on gravel and native surfaced roads. But, the increased truck and heavy equipment traffic during implementation of the project would make the haul routes more hazardous during the life of the project. The Proposed Action is equally more likely to improve user safety and comfort in the years after the project than the no-action alternative, which depends on routine maintenance, as funds allow, for accomplishing maintenance work.

For Alternative B, the effects on resources from construction of 1.03 miles of new temporary roads and use of former logging access routes and operational spurs are discussed in detail in the various resource sections in this environmental impact statement.

Heritage Resources

Affected Environment

Topographic conditions and water sources in the Assessment Area have significantly influenced land use of Native Americans and, to a large extent, Euro-Americans. In general, human use in the Assessment Area follows similar patterns of habitation and resource use, so historic and archaeological sites often overlap each other.

American Indian Resources—American Indians resided in the Salmon River drainage for thousands of years prior to contact with Europeans. Areas that sustained American Indian use generally are located within deep canyons adjacent to the Salmon River and secondary streams. These are the areas most likely to contain American Indian cultural resources. Currently, Indian use of the Assessment Area is very low; only one prehistoric site has been recorded. No sacred/spiritual-use sites or traditional plant-gathering sites have been documented.

Members of the Shasta and Karuk tribes continue to be an integral part of communities along the Salmon River and its tributaries. They use the area for gathering of traditional materials and foods, including beargrass, willows, fish, acorns, and mushrooms. Throughout their history, American Indians have used fire to enhance conditions for traditional materials; however, this practice is not currently being used in the Eddy Gulch area.

Historic Resources—Historic resources include trails, mining sites, logging camps, communities, isolated structures, and artifact scatters. Portions of the Live Yankee Gulch and Eddy Gulch watersheds are part of a historic mining district, with numerous mining-related artifacts and sites. Twenty-three historic properties related to mining or other historic uses have been recorded for the Area of Potential Effects (APE) and were visited. Two sites could not be relocated, and one no longer exists. One site (White's Gulch Arrastra) is on the National Register of Historic Places. No determinations have been made on the other sites.

Environmental Consequences

Alternative A

Direct effects include scorching or loss of resources during a wildfire. Depending on fuel moistures, wooden structures or artifacts can be adversely affected or lost even from a relatively low-intensity surface fire. High-intensity fire can split stone artifacts (such as those made with obsidian). High temperatures can

melt solder in cans and other artifacts. Indirect effects include ongoing deterioration of historic artifacts from weathering, which will occur under any alternative.

Under the no-action alternative, fuel levels would support active or passive crown fire over most of the landscape. The high temperatures associated with crown fire would adversely affect historic resources within the fire perimeter. Depending on fire location, this alternative could result in a loss of one structure, loss of wooden artifacts on two other sites, and impacts on the prehistoric site. Stone and metal artifacts would be affected but not lost.

There are no other proposed actions for this area that would affect heritage resources. There are no projected cumulative effects.

Alternative B

Direct effects include physical disturbance of heritage resources through site disturbance (road construction), and impacts to or loss of resources to fire during prescribed burns or wildfire.

Resource protection measures would be implemented on three properties within fuel treatment areas. Properties would be pretreated (such as with hand line and removal of fuels within property boundaries) prior to implementation of fuels reduction activities, which would ensure that they are not burned over or otherwise damaged. No properties are within the alignment of temporary roads or former logging access routes; these activities would not affect heritage resources.

There are no recorded sites along proposed new road alignments; therefore, there would be no indirect effects from road construction.

Under this alternative, wildfire would burn fewer acres at a lower intensity than under no action, so there would be less risk of losing historic artifacts. Pretreatment of sites should also provide some measure of protection against low-intensity wildfire. Indirect effects include ongoing deterioration of historic artifacts from weathering, which will occur under any alternative.

There are no other proposed actions for this area that would affect heritage resources. There are no projected cumulative effects.

Alternative C

Direct and indirect effects are similar to Alternative B.

There are no other proposed actions for this area that would affect heritage resources. There are no projected cumulative effects.

Inventoried Roadless Areas

Affected Environment

The Inventoried Roadless Areas in the Eddy Gulch LSR are not within the boundary of the project Assessment Area.

Environmental Consequences

The project does not propose to construct roads within the Inventoried Roadless Areas, and wildfire does not affect roadless character. There would be no effect on roadless character or the Inventoried Roadless Areas under any alternative.

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APPENDIX A

The Project's Link to Larger Planning Efforts

The assessment area for effects on social values is both local and nationwide, because these are public lands. Values are also a part of social well-being. A value is a shared standard of preference or desirability and several components of these values were assessed, based on public input, policy, law, and regulation.

The Forest Service revised the Strategic Plan for the agency in February 2004, addressing plans for 2004-2008 (http://fsweb.rmrs.fs.fed.us/lt/LT_Strat_Plan0408.pdf) and the Klamath National Forest completed a Business Plan in May 2006. Beginning in 2000, the goals and objectives included in the Strategic Plan were developed with input from the public, some of which was obtained through a telephone survey. Shields and others (2002) reported the results of the survey and summarized it in their abstract: "Members of the American public were asked about their *values* with respect to public lands, *objectives* for the management of public lands, *beliefs* about the role the agency should play in fulfilling those *objectives*, and *attitudes* about the job the agency has been doing. The public sees the promotion of ecosystem health as an important objective and role for the agency. There is strong support for protecting watersheds. The public supports multiple uses, but not all uses equally. Motorized recreation is not a high priority objective, while preserving the ability to have a 'wilderness experience' is important. There is moderate support for providing resources to dependent communities. The provision of less consumptive services is more important than those that are more consumptive. There is a lack of support for subsidies for development and leasing of public lands. Preservation of traditional uses is a somewhat important objective. Development and use of the best scientific information enjoys wide support, as does information sharing and collaboration. The public has a strong environmental protection orientation, has a moderately strong conservation/preservation orientation, and supports some development." The Strategic Plan for 2004–2008 concludes that goals and objectives in the Strategic Plan are responsive to the current and future resource conditions and societal demands presented in the RPA Assessment (USFS 2000), as well as to other sources cited in the Plan.

The Klamath National Forest Forestwide Late-Successional Reserve Assessment (USFS 1999) provides management recommendations for LSRs on the forest and identifies six objectives. The Eddy Gulch LSR Project incorporated Objective 1 into the purpose of the project; that is, to protection late-successional habitat.

The Salmon River Community Wildfire Protection Plan (SRFSC 2007) identifies community and individual water sources (watersheds and intake structures) for which water quality, and the structures themselves, could be degraded by wildfire. Two communities, Cecilville (south of the Assessment Area) and Sawyers Bar (north of the Assessment Area), were listed in the *Federal Register* (2001) as communities at risk from a wildfire. These communities and related infrastructure could be adversely affected by a fire starting outside the Eddy Gulch LSR or emanating from the LSR.

The two primary objectives for the Eddy Gulch LSR Project are based, in part, on the above two documents, and pertinent laws and Forest Service direction. These objectives, that helped guide the development of proposed treatments and activities to maintain or establish a trend towards desired resource and social conditions, are as follows (no priority is assumed):

1. *Habitat Protection*—Protect existing and future late-successional habitat from threats of wildfire that occur inside and outside the Eddy Gulch LSR.
2. *Community Protection*—Reduce wildfire threat to communities and municipal water supplies and ensure public and firefighter safety.

The Notice of Intent to prepare the environmental impact statement for the Eddy Gulch LSR Project was published in the *Federal Register* on April 1, 2008. The purpose and need for the Eddy Gulch LSR Project and the Proposed Action were the topics of the second project newsletter, which was used as the formal “scoping letter” to the public and agencies. Collaboration under the *Healthy Forests Restoration Act* preceded the scoping process (under the National Environmental Policy Act). Over 14 collaboration meetings were held with residents, tribal leaders, agencies, and firesafe councils. In the final set of collaboration meetings in early March 2008, participants stated they did not feel the need for meetings during the scoping period; they preferred a field trip to the Eddy Gulch LSR to visit some of the proposed treatment units.

Background Information to Determine the Affected Environment for the Eddy Gulch LSR Project

In the 1990s, the Forest contracted for a study on communities within the Klamath Region (Doak and Kusel 1997). The study examines the socioeconomic status and community capacity as indicators of the well-being of communities. Relative socioeconomic status was assessed using a scale of factors. “The design of the socioeconomic status scale assumes that higher levels of home ownership, education and employment indicate higher levels of socioeconomic well-being, and higher levels of poverty and higher percentages of children in homes receiving public (sic) assistance income indicate lower levels of socioeconomic well-being...Community capacity is defined as the collective ability of residents in a community to respond to external and internal stresses; to create and take advantage of opportunities; and to meet the needs of residents, diversely defined. Physical capital, human capital and social capital are the primary components of community capacity” (page i).

The names and descriptions of the Aggregations and social well being are from Doak and Kusel’s 1997 report on “Well-Being Assessment of Communities in the Klamath Region.” Prepared for the United States Forest Service, Klamath National Forest under contract 43-91W8-6-7077, October 20, 1997 (<http://www.inforain.org/indicators/klamath>).

Population data for the Aggregations came from <http://www.inforain.org/indicators/klamath>.
Population data for the town of Happy Camp: <http://www.happycampchamber.com/community.html>.
Population data for the town of Klamath River:
<http://realestate.yahoo.com/Neighborhoods/detail.html?csz=Klamath%20River,CA>.

Low **socioeconomic scores** highlight a range of societal needs within aggregations. Low **capacity scores** indicate a reduced ability of local communities to effectively address those needs and to self-develop.

Community Capacity of the Surrounding Communities

Doak and Kusel (*ibid*) divided their assessment location into six subregions. The proposed Eddy Gulch LSR Project Assessment Area is in the Siskiyou Corridor Subregion, which includes all but the northeastern corner of Siskiyou County and the small northwestern-most communities of Shasta County. The subregion is divided into two broad valleys and associated foothills and the rugged Salmon and Klamath River

drainages. The Eddy Gulch LSR Project is located in the Salmon River drainage. The well-being assessment divided each subregion into aggregations, which included the incorporated towns of Yreka, Montegue, Fort Jones, and Etna (east of the Assessment Area), Happy Camp (north of the Assessment Area), and Salmon River / Callahan.

The characteristics of the Salmon River / Callahan aggregation are the most similar to those found in the incorporated communities and neighborhoods. Some of those characteristics are summarized as follows:

This aggregation is remote and has a limited infrastructure. There are a few small stores and gas stations, access to electrical power is limited, and there are limited employment opportunities. Residents have diverse skills, many with strong outdoor skills. There is a cadre of residents who work well together, particularly on issues related to water rights, fish, and ecosystem health.

The table below lists the communities within 20 miles of the Eddy Gulch LSR Project boundary.

Town or Feature	Distance and Direction from Eddy Gulch LSR Project Boundary
Yreka	31 miles northeast
Fort Jones	18 miles north
Etna	12 miles north
Sawyers Bar	1 miles northwest
Forks of Salmon	9.6 miles northwest
Cecilville	1 miles south
Orleans	18.7 miles west
Callahan	13.25 miles east
Somes Bar	18 miles northwest

The well-being of residents in the unincorporated rural areas surrounding the Eddy Gulch LSR Project Assessment Area is derived from their ability to live independent lifestyles—the Doak and Kusel well-being assessment identified these residents collectively as “rugged individualists.” Many residents also derive their “personal satisfaction and happiness” from living in “one of the most ecologically diverse regions in the world” (SC 2008).

The Doak and Kusel study states that almost every community meets around local volunteer fire departments and schools. Local fire safe councils increasingly play this role. The Salmon River Fire Safe Council is responsible for bringing residents together from many of the rural communities and neighborhoods surrounding the Eddy Gulch LSR Project Assessment Area to prepare their own cooperative fire safe plans. The preparation of these plans helps provide residents with a sense of community and well-being.

The area of influence for broader social effects is the seven-county area described on page 3-134 of the Klamath LRMP Environmental Impact Statement (USFS 1995b). Traditionally, the Forest’s contribution to job creation within the area of influence was primarily related to timber production. People from the seven-county area contract for work in the area surrounding the project including, but not limited to, logging, planting, precommercial thinning, masticating, laborers, light industry, non- profit groups, and services

related to those endeavors. These people spend money on gas and food, which creates a small multiplier effect in Siskiyou County.

With the reduction in timber outputs that occurred over the last several decades, in particular the reductions associated with the Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (Northwest Forest Plan) and Forest Plan, the Forest Service has expanded its role and tourism makes up a increased portion of revenue. Grants are important in the seven-county area of influence. Since 1992, community development and similar programs intended to help build local capacity and accomplish resource goals have contributed significantly to economic stability and growth in Siskiyou and the surrounding counties. These programs include Jobs-in-the-Woods, the Rural Community Assistance program, Community Economic Revitalization Team, National Fire Plan Grant programs, and Payments to States Title II. The Forest also contributes to the job training and retraining programs that help the workforce in the seven-county area adjust to changes in resource products, markets, and skills. Refer to Forest Monitoring Reports (USFS 2001, 2002, 2003, 2004, 2005) for additional information; they are available on the Forest web page at the following web address: www.fs.fed.us/r5/klamath/projects/forestmanagement/.

Irreversible and Irrecoverable Commitment of Resources

Irreversible commitment of resources refers to a loss of nonrenewable resources, such as mineral extraction, heritage (cultural) resources, or to those factors that are renewable only over long time spans or at great expense (for example, soil productivity), or to resources that have been destroyed or removed. No irreversible commitments of resources were identified for the project.

Irrecoverable commitment applies to losses that are not renewable or recoverable for future use. The loss of production would be irrecoverable, but it would not necessarily be irreversible. Under the no-action alternative, there would be an irrecoverable commitment of existing forest vegetation and fish and wildlife habitat in the event of a wildfire. Under the action alternatives, risk of wildfire and subsequent loss of forest vegetation would be reduced. Vegetation removed as a commodity by-product of fuel treatments would constitute loss of production of individual trees or groups of trees; however, productivity of entire stands of vegetation would increase over time. The availability and suitability of late-successional habitat would not be significantly affected.

Energy Requirements, Conservation Potential, Depletable Resource Requirements

Consumption of fossil fuels by vehicles and equipment will occur with the action alternatives during thinning activities and timber hauling, construction and closure of temporary roads, and opening and closing of former logging access routes. No unusual energy requirements are included nor do opportunities exist to conserve energy at a large scale. With the proper application of the Klamath LRMP Standards and Guidelines for soils, soil productivity will be conserved; supporting information can be found in the Soils Report. The project was developed, in part, to promote the conservation and recovery of late-successional-dependent wildlife species, such as the northern spotted owl.

Prime Farmland, Rangeland, and Forest Land

The Eddy Gulch LSR Project Assessment Area does not contain any prime farmland or rangeland. Prime forest land does not apply within the National Forest System.

Possible Conflicts with Other Land Use Plans

The action alternatives are entirely on National Forest System lands. The project incorporates components of the Salmon River CWPP, which is designed to reduce the threat of wildfire on private lands. The action alternatives are not in conflict with planning objectives for Siskiyou County or local tribes.

Other Required Disclosures

NEPA at 40 CFR 1502.25(a) directs “to the fullest extent possible, agencies shall prepare draft environmental impact statements concurrently with and integrated with . . . other environmental review laws and executive orders.”

Consultation with the National Marine Fisheries Service and the United States Fish and Wildlife Service (USFWS) has been completed as required by the *Endangered Species Act*. The Klamath National Forest is not required to consult with the USFWS under the *Fish and Wildlife Coordination Act* because no water impoundments or diversions are proposed.

Consultation with the California State Historic Preservation Office will be completed as required by the *National Historic Preservation Act*. No properties eligible for the National Register of Historic Places will be affected.