



United States
Department of
Agriculture

Forest
Service

March 2016



Lower McCloud Fuels Management Project

Proposed Action and Scoping Document

Shasta-McCloud Management Unit

Shasta Trinity National Forest

Shasta County, California

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Introduction

With the Lower McCloud Fuels Management Project (project), the Shasta-Trinity National Forest (Forest) is proposing to create fuel management zones (FMZs), burn using prescribed fire, and remove designated hazard trees. The project area covers approximately 12,071 acres on National Forest System lands. A combination of treatments would be used across the project area, resulting in some acres being treated with multiple prescriptions to achieve stated objectives. This proposed project would comply with the Shasta Trinity Land and Resource Management Plan (LRMP) and other relevant management direction, laws, policies and regulations as they relate to proposed activities within the project area.

The project is situated within the Lower McCloud and Squaw Valley Creek watersheds, and is part of the larger Eastern Klamath Subsection of the Klamath Mountain Section. Fire is the most widespread and dynamic disturbance regime affecting the project area. The area is characterized by complex geology and terrain that influence the structure, composition, and productivity of vegetation. These vegetation patterns in turn influence fire behavior and patterns of fire severity.

All lands within the project area are National Forest System Lands (NFS) managed by the U.S. Forest Service. Many private properties in the Lower McCloud River region were deeded via land grants pursuant to the Pacific Railway Act of 1864 (13 Stat. 356). Private ownership activities or designations include a nature preserve, a fishing club, a utility company, timber companies, and ranching operations. Several of these private landowners, as well as other key stakeholders within the watershed, participate in a program established through the Coordinated Resource Management Plan (CRMP) developed in 1991. This plan establishes guidelines to coordinate management activities with principal landowners in the McCloud River drainage area and public agencies that administer programs in that area.

Project Location

The Lower McCloud Fuels Management Project is located entirely in Shasta County, California. The project area is approximately 9 miles south of the town of McCloud, CA and approximately 7 miles east of the town of Castella, CA (located on Interstate 5, near Castle Crags State Park). The project area is approximately 12,071 acres in size. Elevations range from 2,300 to 5,100 feet.

The legal location of the project area encompasses all or portions of:

- Sections 5-6, Township (T) 37 North (N), Range (R) 2 West (W), Mount Diablo Base and Meridian (MDB&M);
- Sections 1 – 3, 10 – 12, 14-15, and 23, T 37 N, R 3 W, MDB&M;
- Sections 19, 27 – 33, T 38 N, R 2 W, MDB&M;
- Sections 13 – 15, 22 – 28, 33 – 36, T 38 N, R 3 W, MBD&M.

Regulatory Framework, Relevant Direction, & Related Guidance

The proposed action for the Lower McCloud project was developed to comply with applicable management direction as well as all Federal, State and local laws regulations and policies. Generally speaking, guiding direction for the proposed action is derived from the following:

- Shasta Trinity Land and Resource Management Plan (1995)
- Northwest Forest Plan (1994)
- Forest Wide Late Successional Reserve (LSR) Assessment (1999)
- Roadless Area Conservation Rule (2001)
- McCloud River Coordinated Resource Management Plan (1991)
- Shasta-Trinity Fire Management Reference System (2015)
- Revised Recovery Plan for the Northern Spotted Owl (2011)
- Designation of the Revised Critical Habitat for the Northern Spotted Owl (2012)

Land and Resource Management Plan

The project is guided by management direction found in the Shasta-Trinity National Forest Land and Resource Management Plan (LRMP, also known as the Forest Plan), which has incorporated the Northwest Forest Plan (described below). Management direction for the Forest includes four integrated levels: (1) Forest-wide Direction, (2) Land allocations and standards and guidelines, (3) Management Prescription Direction, and (4) Management Area Direction.

The concepts of and direction for ecosystem management are woven into these four levels of management direction. The first level, Forest-wide direction, applies to the entire Shasta-Trinity Forest and carries out the intent of various laws, regulations, and policies. Levels two and three, ROD land allocations and Management Prescriptions, identify the resource activities that will be emphasized on specific types of land. The fourth and most specific level is Management Area Direction. It provides supplemental direction not specified in the other three levels. The proposed action is developed to be consistent with the LRMP and meet the goals of the four integrated levels.

Management Prescriptions

Management Prescriptions apply a management theme to specific types of land. Management Prescriptions specify management practices and standards and guidelines that apply to identifiable areas in addition to Forest Standards and Guidelines. These prescriptions further refine the direction from the Northwest Forest Plan ROD. The project area consists of three Management Prescriptions: Administratively Withdrawn – Unroaded, Non-Motorized Recreation; Late Successional Reserves; and Riparian Reserves.

Administratively Withdrawn – Unroaded, Non-Motorized Recreation

The purpose of this management prescription is to provide for semi-primitive non-motorized recreation opportunities in unroaded areas outside existing Wildernesses while maintaining predominantly natural-appearing areas with only subtle modifications. The management prescription emphasizes special recreational and visual values, fisheries, and riparian resources, in addition to the retention of old-growth vegetation and management of wildlife species requiring late seral stage conditions.

Late-Successional Reserves

The purpose of this prescription is to provide special management for Late-Successional Reserves and Threatened and Endangered species. The management prescription for the Late-Successional Reserves emphasizes retention and enhancement of sensitive plant species, old-growth vegetation, and hardwoods. It also includes special, selected sensitive wildlife species which are primarily dependent of late seral stage conditions. Management direction for Late-Successional Reserves is to protect and enhance conditions of late-successional and old-growth forest ecosystems.

Riparian Management

The purpose of this prescription is to maintain or enhance riparian areas, wildlife and fisheries habitat, and water quality by emphasizing streamside and wetland management. This management prescription emphasizes retention and enhancement of old-growth vegetation, retention and enhancement of habitat for sensitive species, and provides connective habitat for migration, dispersal, and foraging for several wildlife species. Riparian reserves overlap with Late-Successional Reserves and with Unroaded, Non-Motorized Recreation Areas within the project boundary.

Northwest Forest Plan

The Northwest Forest Plan (NWFP) is a series of policies governing land use on federal lands in the Pacific Northwest. The NWFP was adopted in 1994, with the goal of protecting critical northern spotted owl habitat as well as other habitats from Northern California to western Washington. The plan provides for five major goals:

1. Never forget the human and economic dimensions of the issues;
2. Protect the long term health of forest, wildlife and waterways;
3. Focus on scientifically sound, ecologically credible and legally responsible strategies and implementation;
4. Produce a predictable and sustainable level of timber sales and non-timber resources; and
5. Ensure that federal agencies work together.

The Shasta Trinity Land and Resource Management Plan (1995)¹ incorporates NWFP policy and direction in the form of land allocations and associated goals, standards, and guidelines.

NWFP Land Allocations

The NWFP designated seven land allocation categories, two of which are applicable to the project area: Administratively Withdrawn Areas and Late Successional Reserves.

Administratively Withdrawn

Administratively Withdrawn Areas are areas that are designated by the NWFP ROD as land on which management prescriptions are deferred to the current Forest Plan. The project area contains approximately 166 acres of Administratively Withdrawn land, located in the northwest ¼ section of Section 23, T. 37N, R. 3W. These 166 acres make up an approximate quarter section of land and are identified in the Shasta-Trinity LRMP as the Unroaded Non-Motorized Recreation management prescription.

Late-Successional Reserves

The remainder of the project area outside of the Administratively Withdrawn Area is within the Late-Successional Reserve (LSR) allocation designated by the NWFP ROD. The standards and guidelines developed in the NWFP ROD for LSR have been incorporated into the LRMP.

¹ Two key documents outline policy and direction for the Northwest Forest Plan. They are the *Record of Decision (ROD) for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* and *Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl*.

Late Successional Reserves were established with the intent to maintain a functional, interactive, late-successional and old-growth forest ecosystem. These reserves were designed to serve as habitat for late-successional and old-growth related species, including the northern spotted owl.

Riparian Reserves

Riparian reserves are designated by the NWFP as part of the Aquatic Conservation Strategy. Riparian reserves are portions of watersheds where riparian-dependent resources receive primary emphasis. Special standards and guidelines apply to Riparian Reserves as they are some of the most productive, sensitive, and diverse sites within the National Forest. The Riparian Reserves are intended to serve as connectivity corridors among LSRs. Treatment proposals would be designed to be consistent with standards and guidelines in the NWFP, as well as other applicable management direction.

Forest Wide Late Successional Reserve (LSR) Assessment

An assessment with recommendations for LSR management has been made in the Shasta-Trinity National Forest's Late Successional Reserve Assessment (LSRA) (USDA 1999, USDA 2009). This assessment is further refined through two Watershed Analyses (WAs), the Lower McCloud WA and the Squaw Valley Creek WA. The Late Successional Reserve Assessment (LSRA) provides guidelines for fuels treatment activities within the LSR.

The LSRA (1999) identifies four main management objectives that guide activities within LSRs:

- I. Protect existing late successional habitat from threats (of habitat loss) that occur inside and outside LSRs.
- II. Promote the continued development of late successional characteristics.
- III. Protect mid and early-seral vegetation from loss to large –scale disturbance events.
- IV. Promote connectivity of late successional habitat with LSRs.

The objectives of the LSRA support the purpose of the proposed project. The majority of the project area is within a portion of the Iron Canyon LSR (RC-335). Out of the 24 LSRs located on the Shasta-Trinity National Forest, the LSRA (1999) highlights the Iron Canyon LSR as a priority to treat based on the management objectives I, III, and IV, listed above. The LSRA (1999) indicates that the Iron Canyon LSR has the 'potential of high lethal effects (>70% mortality) from a wildfire'. Iron Canyon LSR also has a large proportion of late-successional habitat, and the LSRA identifies that protecting the existing late successional forest from threats of habitat loss is an important management objective. Treatment proposals would be designed to reduce the risk of habitat loss and enhance characteristics of the LSR.

Roadless Area Conservation Rule

Inventoried Roadless Areas (IRAs) are areas that have been identified by government reviews as lands without existing roads that could be suitable for roadless area conservation as wilderness or other non-standard protections. The project area contains 8,924 acres of the West Girard IRA, which was designated as Inventoried Roadless during the Roadless Area Review and Evaluations (RARE II) that began in 1977. The RARE II process recommended that lands that were currently roadless become designated as Wilderness. The 1995 LRMP indicates on page 3-24 that the 1984 California Wilderness Bill released some inventoried RARE II roadless areas to be managed for multiple-uses other than wilderness. The areas released include the West Girard IRA.

The 2001 Roadless Area Conservation Rule (Roadless Rule) prohibits road construction and reconstruction in IRAs except under limited circumstances (2001 Roadless Rule § 294.12). A road is defined as a “motor vehicle travelway over 50 inches wide, unless designated and managed as a trail.” (2001 Roadless Rule § 294.11).

The Roadless Rule also prohibits timber cutting, sale, or removal in inventoried roadless areas except under limited circumstances. One of those exceptions is when the cutting, sale, or removal of generally small diameter timber will maintain or improve one or more of the roadless area characteristics as defined in § 294.11 and is needed for one of the following purposes:

- To improve threatened, endangered, proposed, or sensitive species habitat; or
- To maintain or restore the characteristics of ecosystem composition and structure, such as to reduce the risk of uncharacteristic wildfire effects, within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period; (2001 Roadless Rule § 294.13(b)(1)).

The preamble to the 2001 Roadless Rule explains further, “areas that have become overgrown with shrubs and smaller diameter trees creating a fuel profile that acts as a “fire ladder” to the crowns of the dominant overstory trees may benefit ecologically from thinning treatments that cut and remove such vegetation. The risk of uncharacteristic fire intensity and spread may thus be reduced, provided the excess ladder fuels and unutilized coarse and fine fuels created by logging are removed from the site. Also, in some situations, cutting or removal of small diameter timber may be needed for recovery or conservation of threatened, endangered, proposed or sensitive species to improve stand structure or reduce encroachment into meadows or other natural openings” (2001 Roadless Rule, p. 3257).

The proposed action is designed to be consistent with the current management direction and complies with the intent of the LRMP and 2001 Roadless Rule for the West Girard IRA.

Coordinated Resource Management Plan

Fisheries, geology, scenery, cultural, wildlife and historic values are all considered to be outstandingly remarkable values in the McCloud River basin. In recognition of these values, portions of the upper and lower McCloud River were evaluated during the forest planning process and were found eligible for designation within the National Wild and Scenic River System.

A Coordinated Resource Management Plan (CRMP) has been developed to protect these outstandingly remarkable features (LRMP, page 4-121). The intent of the CRMP is to coordinate large scale resource planning. Agencies and private landowners cooperate in individual project and planning.

The proposed action is designed to be consistent with the guidance from the CRMP.

Fire Management Reference System

The Shasta-Trinity National Forest 2015 Fire Management Reference System categorizes the landscape into smaller geographic areas called Fire Management Units (FMUs) to assist in organizing information across the complex landscape. The project area contains the Late-Successional Reserve (LSR) and the Interface and Private Lands FMUs. The management objectives for the LSR FMU in the Fire Management Reference System are to:

- Protect existing late successional habitat from threats (of habitat loss) that occur inside and outside LSR's,

- Promote the continued development of late successional characteristics,
- Protect mid and early-seral vegetation from loss to large-scale disturbance events, and
- Promote connectivity of late successional habitat within LSR's.

The Wildland Urban Interface within the project area is classified as part of the Interface and Private Lands FMU. According to the Fire Management Reference System, all suppression responses in this FMU will have an objective of control, regardless of ignition source, in order to protect the public and prevent fire spread on private property. Figure 1 identifies where the WUI is located in the project area.

Additionally, the LRMP directs that, "All wildland fires, on or threatening private lands protected under agreement with the State of California, will receive a 'control' suppression response" (LRMP p. 4-17). The primary criteria for choosing fire suppression strategies and tactics where private land or structures are involved or expected to be involved should be to maximize public and firefighter safety. The Forest Service's primary responsibility and objective for structure fire protection is to suppress wildfire before it reaches structures.

Revised Recovery Plan for the Northern Spotted Owl

The northern spotted owl (*Strix occidentalis caurina*) inhabits structurally complex forests from southwest British Columbia through Washington and Oregon to northern California, including the project area. The northern spotted owl (NSO) was listed under the Endangered Species Act (ESA) as threatened on June 26, 1990.

The Endangered Species Act of 1973, as amended (16 USC 1531 *et seq.*)(ESA), establishes policies and procedures for identifying and conserving species of plants and wildlife that are endangered or threatened with extinction. To help identify and guide species recovery efforts, section 4(f) of the ESA directs the Secretary of the Interior to develop and implement recovery plans for listed species. These plans are to include:

1. A description of site-specific management actions necessary for conservation and survival of the species;
2. Objective, measurable criteria that, when met, will allow the species to be delisted; and
3. Estimates of the time and funding required to achieve the plan's goals and intermediate steps.

The *Revised Recovery Plan for the Northern Spotted Owl* was signed on June 28, 2011. Recovery plans are not regulatory documents; rather, they are created by the USFWS as guidance to bring about recovery and establish criteria to be used in evaluating when recovery has been achieved. The LRMP (p.4-30) states that habitat is to be maintained or enhanced consistent with species recovery plans. With this in mind, the proposed action is designed to be consistent with the guidance from the 2011 Revised Recovery Plan for the Northern Spotted Owl.

Critical Habitat for the Northern Spotted Owl

The designation of critical habitat for the NSO was published on December 4, 2012 in the Federal Register (77 FR 71876). Critical habitat is defined in the ESA as specific geographic areas that contain features essential to the conservation of an endangered or threatened species and that may require special management and protection.

There are currently 8,201 acres of NSO critical habitat within the project area, which is in the ICC – Interior California Coast subunit. The proposed action is designed to be consistent with the recommendations given for NSO critical habitat.

Existing Condition

The historic fire regime in the Lower McCloud project area was characterized by frequent fires of low to mixed severity. Past forest practices, including active fire suppression, have changed the composition and structure of vegetation in the project area. Current conditions include high fire hazard and risk. These conditions have created a concern over potential fire behavior on public and private lands, threats to forest resources and potential impacts to air quality, soil stability, water quality, wildlife habitat and recreation.

The project area is located within two watersheds: the Squaw Valley Creek Watershed and the Lower McCloud Watershed. Each watershed is described in length in their respective Watershed Analysis. The two watersheds almost divide the project area in half, with the Squaw Valley Creek Watershed occupying the northwestern portion of the project area, and the Lower McCloud Watershed located in southeastern half of the project area. The existing vegetative condition for each watershed is summarized below. The Lower McCloud and Squaw Valley Creek Watershed Analyses describe the current fuels condition and its impact on other resources further in detail. These documents can be accessed online at: <http://www.fs.usda.gov/main/stnf/landmanagement/planning>.

The project area is also located within the Iron Canyon Late-Successional Reserve (LSR). The Iron Canyon LSR is described in detail in the Forest Wide Late Successional Reserve (LSR) Assessment (LSRA) (1999). Current conditions for the Iron Canyon LSR are summarized below, as well.

Squaw Valley Creek Watershed

The Squaw Valley Creek (SVC) Watershed is predominately forested with coniferous trees, with 75% of the watershed composed of the mixed conifer vegetation type. A small component of the watershed consists of other vegetative types including hardwoods, brush, and perennial and annual grasses. Vegetation mapping from the late 1930s and early 1940s indicate much of the watershed was early seral or open-canopied stands. Based upon those conditions and a historical fire regime of frequent, low to moderate intensity fires, it is likely that much of the vegetation in the watershed prior to the 1900s was moderately open-canopied with brush, forbs, and grasses underneath (USDA 2011b). During that time period, denser stands of mixed conifers would have likely been present at higher elevations, along riparian corridors, and on north facing slopes. However, currently in the SVC Watershed, there are large, continuous areas of dense vegetation and high fuel loading above what was characteristic of historic conditions.

Vegetation patterns in general are influenced by disturbance history, and the largest disturbance agent to affect vegetation within the SVC Watershed prior to the 1900s was recurrent wildfire (USDA 2011b). As the 2011 watershed analysis describes, there has been a general lack of disturbance in the SVC Watershed since the early 1900s with the beginning of fire suppression policies. An analysis of fire return interval departure (FRID) data shows that much of the watershed has a high degree of departure from historic vegetative conditions and has missed four or more fire return intervals when compared to historic occurrences (USDA 2011b). The missed fire return intervals have significantly altered vegetative composition and structure, and have also affected ecosystem processes within the watershed (Skinner et al. 2006). For example, fire suppression has resulted in the development of large areas of dense forests,

largely replacing the early seral and open canopied forests that were previously present in the watershed (Daubenmire 1968, Skinner et al. 2006).

Vegetative conditions in the SVC Watershed have changed from a heterogeneous to a more homogeneous distribution of age classes across the landscape. Conifer trees are currently present in greater densities than during historic (pre-1900s) periods and increased conifer density is leading to reduced vegetative complexity (USDA 2011b). The lack of early seral habitats and the lack of diversity of vegetation types within the SVC Watershed is noteworthy and is of concern to resource managers. The uniformity of age classes and varying vegetation patterns can lead to decreased resilience. The current state of the watershed creates ideal conditions for stand-replacing disturbance events, at local and possibly landscape scales, depending on the type and timing of such an event (USDA 2011b).

Additionally, if a wildland fire were to occur, the increased vegetation density and fuel loading has led to an increased likelihood of uncharacteristic fire behavior, fire intensity, fire size, and fire severity in reference to historic conditions (USDA 2011b). In the event of a high severity wildfire within the watershed, vegetation mortality may be severe to extreme and there would be a high risk of losing key ecosystem components.

Lower McCloud Watershed

The recent history (since the 1900s) of active fire suppression in the watershed has resulted in the development of large areas of dense forests with complex structures, largely replacing the early seral and open canopied fire-created habitats that dominated the watershed at the beginning of this century (USDA 2011a). Many of the private parcels of land within the watershed have been heavily managed for timber production resulting in a mix of areas with either minimal vegetation, logging slash, or early seral state vegetation (such as brush and saplings).

Although the portion of the Lower McCloud Watershed that is in the project area is entirely federally owned, the majority of the watershed is characterized by a checkerboard land ownership pattern. A corridor of mostly private land follows the McCloud River in the western part of the watershed borders the project area. The patchwork network of ownership in the watershed has created a highly fragmented landscape within the central and eastern portions of the watershed, primarily as a result of timber harvest and road building on the sections of private land amongst the national forest lands. Although these sections are outside of the project area, their management activity has impacted the quality and connectivity of habitat within the project area. Prior to any harvest, habitat on these private lands consisted of late-successional stands that contributed to the overall connectivity of the habitat in the watershed. Fragmentation within the watershed has increased markedly since the late 1990s, placing an increased level of importance on the maintenance and promotion of high quality habitat on the national forest lands in the watershed (USDA 2011a).

Fire has played a major role in shaping vegetation composition and structure in the Lower McCloud Watershed (Taylor and Skinner 1998, Skinner et al. 2006, Agee 2007). The watershed has historically been characterized by frequent fires of low- to-mixed severity (Taylor and Skinner 1998, Skinner et al. 2006). However, excluding the Bagley Complex in 2012, approximately 92 percent of the watershed has not been affected by a fire over the past 65 years (USDA 2011a). The lack of disturbance has increased forest density and fuel loading, shifting the vegetation composition to higher proportions of fire-intolerant species compared to historical (pre-suppression) periods. Therefore, there is an increased probability of passive or active crown fires throughout the watershed. Similar to the Squaw Valley Creek Watershed, an analysis of FRID data shows that much of the Lower McCloud Watershed has a high degree of departure from historic vegetative conditions and has missed approximately four or more fire return intervals when

compared to historic occurrences (USDA 2011a). Without regular disturbance patterns in place the watershed has seen an increase in stand density and fuel loading, primarily represented by fire intolerant species which were not favored historically. This has increased the likelihood of fires to burn with uncharacteristically high intensity and severity; potentially leading to a stand replacing event throughout the watershed.

Fire suppression capability is a major concern within the Lower McCloud Watershed. Numerous fire starts coupled with steep terrain, limited access, dense fuels conditions, and weather patterns conducive to large fire growth have created fire-suppression concerns in the watershed in the past and continue to drive the concerns of managing future wildfires. These factors also may delay adequate response times to fire starts, increasing the likelihood of a fire becoming larger. Although initial attack efforts have been relatively successful to date, if a wildland fire were to exceed the capabilities of aerial suppression, ground efforts would be greatly hindered due to access constraints.

Iron Canyon LSR

The Iron Canyon Late-Successional Reserve (LSR) is approximately 102,924 acres (including private land), making it the largest LSR on the Shasta-Trinity National Forest, and 11,905 acres of the project area (98%) falls within the LSR boundary. The LSR includes both the Squaw Valley Creek and Lower McCloud Watersheds.

The Iron Canyon LSR, is centrally located within the network of LSRs in the Shasta-McCloud subprovince, and contains some of the largest blocks of contiguous habitat in the network. This places a high level of importance on the protection and enhancement of the current and future habitat within the area. The Squaw Valley Creek Watershed plays a vital role in the connectivity and function of the Iron Canyon LSR and the LSR network as a whole due to a general lack of fragmentation and the overall contiguous nature of the late seral habitat within the watershed (USDA 2011b). Large, contiguous blocks of late successional habitat exist in the SVC Watershed, and much of the late successional habitat in the watershed is high quality habitat for the northern spotted owl and other old-growth and forest interior dependent species (USDA 2011b).

Within the 1999 LSRA, the Lower McCloud watershed was also described as an integral part of the connectivity of the LSR, primarily based on the large blocks of late successional habitat and relatively high connectivity. However, since the LSRA was written, these characteristics have been considerably reduced on private land; and these conditions are expected to likely continue into the foreseeable future (USDA 2011a).

As stated above, the timber harvest and road building on sections of private land outside of the LSR in the Lower McCloud Watershed has markedly increased the fragmentation within the Iron Canyon LSR (USDA 2011a). This has placed a greater significance on the protection and promotion of larger blocks of contiguous late successional habitat on national forest lands within the watershed. Current levels of fragmentation, specifically on the patchwork network of private land within the central and eastern portions of the Lower McCloud Watershed, may be inhibiting the function of this watershed in its overall role within the Iron Canyon LSR.

The Iron Canyon LSR was identified within the LSRA as an area of elevated risk to large-scale disturbance due to changes in the characteristics and distribution of the mixed-conifer forests resulting from past fire suppression. High severity, high intensity wildfire was identified as the greatest threat to further loss and degradation of habitat for late-successional associated species within the network of LSRs.

Of the 24 LSRs analyzed on the Shasta-Trinity NF, the Iron Canyon LSR was one of the top four LSRs identified as having the greatest sustainable level of late-successional forest and that also has the highest level of risk (USDA 2011a).

Vegetative Condition in the Project Area

Table 1 shows the vegetative composition of the project area. Seventy-one percent of the project area is composed of the California Wildlife Habitat Relationships² (CWHR) vegetation type Sierran-Mixed Conifer, which is an assemblage of conifer and hardwood species that forms a multi-layered forest. The most common species in this habitat type are Douglas-fir, ponderosa pine, and white fir. The majority of the remaining project area is composed of Montane Hardwood – Conifer (16%) and Montane Hardwood (10%) habitat types. Montane Hardwood – Conifer habitat contains both conifers and hardwoods, often as a closed forest, and common species in this habitat type include ponderosa pine, Douglas-fir, incense-cedar, and California black oak. Montane Hardwood habitat is composed of a pronounced hardwood tree layer, with an infrequent and poorly developed shrub stratum, and a sparse herbaceous layer. Canyon live oak, California black Oak, and Oregon white oak are common species in this habitat type. The remaining 2% of the project area is composed of the Douglas-fir and Montane Chaparral habitat types.

Table 1: Vegetation Composition of the Lower McCloud Project Area based on the California Wildlife Habitat Relationship vegetation type.

California Wildlife Habitat Relationship vegetation type	Percentage of project area
Douglas Fir	0.9
Mixed Chaparral	0.5
Montane Chaparral	1.2
Montane Hardwood – Conifer	15.5
Montane Harwood	10.3
Ponderosa Pine	0.4
Sierran Mixed Conifer	71.1
White Fir	0.1
Wet Meadow	0.0
Total	100

Current Fire Return Interval Departure (FRID) data for the project area shows that there is significant departure in the current vegetative conditions from historic conditions. Currently, over 96% of the project area is classified as having dense cover ($\geq 60\%$ canopy closure) (Table 2). Comparatively, reference conditions from the Lower McCloud Watershed Analysis indicate that less than 19% of the watershed's Mid- and Late-seral stages had a closed canopy over 40% in 1944 (USDA 2011a).

Table 2: Cover Density in the Lower McCloud Project Area. (from FRID data).

CWHR Closure Class	Canopy Closure	Percentage of Project Area
No Cover*	0.0%	1.23%
Sparse Cover	10-24.9%	0.05%
Open Cover	25-39.9%	0.25%
Moderate Cover	40-59.9%	1.15%
Dense Cover	$\geq 60\%$	96.85%
Not Determined	-	0.47%

*No Cover includes Barren, Wet Meadow, Mixed Chaparral, and Montane Chaparral CWHR types.

² The CWHR system classifies existing vegetation types important to California's wildlife. The system was developed to recognize and logically categorize major vegetative complexes at a scale sufficient to predict wildlife-habitat relationships for California's regularly occurring birds, mammals, reptiles, and amphibians.

Stand exam data collected on ridgetops, where proposed FMZs would be located, show that there is an average of 105 trees per acre. These trees have an average diameter of 18 inches diameter at breast height (DBH). The average basal area is 195 square feet per acre.

The existing conditions in the Squaw Valley Creek and Lower McCloud Watershed Assessments describe that of the project area. There has been a substantial reduction in the frequency of fires in the project area, which historically had a significant role in creating vegetation with high spatial complexity, including open forested stands and late-successional, closed-canopy forests. Fire suppression, along with other past management activities in the project area, has resulted in uncharacteristically dense vegetation and high fuel loading, a decline in wildlife forage and habitat diversity, and an elevated risk of high-severity, stand-replacing fires.

Without the regular disturbance from fire, the project area has seen an accumulation of understory fuels, small trees, forest debris, and duff. Tree densities and ladder fuels have also increased. This, along with an accumulation of fire intolerant species, has increased the likelihood of high-severity, stand-replacing fires beyond what occurred in the project area historically. The increased fire hazard and fire behavior potential pose threats to physical, biological, and social values in the project area.

Impacts from recent wildfires near the project area (e.g. the 2012 Bagley Complex and Ward fire, the 2009 Tennant fire; the 2007 Bolli fire; the 2005 Bagley fire; the 1999 High Complex and others) have created concerns for resource managers about the potential for poor air quality, accelerated soil erosion, decreased soil productivity, degraded water quality, diminished wildlife habitat, and negatively impacted recreation opportunities if a large wildfire were to occur in the project area. The uncharacteristic fuel accumulation and weather conditions combined with poor access for firefighting forces, rugged terrain, and many other factors contributed to extreme fire behavior in most of these recent fires. During one or more of these fires, several structures were lost and air quality standards exceeded California Air Resource Board thresholds. Additionally, areas that experienced high burn severity also experienced soil erosion, wildlife habitat loss, and degraded visual quality.

WUI

There is a limited amount of wildland urban interface in and directly adjacent to the project area. The general location of the WUI is shown on Figure 1 at the end of the document. The WUI in and around the project area is not tied to a federally listed Community at Risk, but rather private property and structures. The project area is adjacent to developed areas, and the WUI directly adjacent to the project area consists of a handful of individual houses and developments. The WUI in the project area is classified in the Fire Management Reference System as Zone 3 - Defense Zone and Zone 4 - Threat Zone. Zone 3 extends a ¼-mile away from structures and the goal of this zone is to establish an environment where firefighters can safely suppress wildfires. Zone 4 is located beyond the ¼-mile defense zone and extends out to an approximated distance of 1.5 miles from structures. In this zone, the desired flame lengths are four to eight feet or less on a 90th percentile (mid to late summer or hotter) fire weather day. The goal of this zone is to achieve an environment where crown fires, headed towards communities, become surface fires before encountering the defense zone.

Access

There is limited access to the project area due to the small number of roads within the project area, the condition of those roads, and the high amount of private property surrounding the area. The majority of the roads in the project area are gated and provide access to private property. Road 38N82, which runs along the western boundary of the project area, is gated, narrow, and has steep cut-banks and vegetated

slopes. There is also dense canopy cover overhead. Road 38N36, which runs through the middle of the project area to Bald Mountain, is only seasonally open to the public. These roads are important to maintain as they provide access for firefighters and egress³ routes for private landowners.

In general, the roads in the project area are tight, narrow, overgrown and have single entrance and exit points. The limited access to the area, combined with the high level of accumulated fuels along ridgetops and roads creates a safety hazard if a wildfire were to occur in the project area. The accumulated fuel and over grown vegetation along the roadsides makes containing fires burning at high intensities difficult and travel in and out of the project area problematic. Road 38N36 is the only access route for the McCloud River club. Road 38N53 is the only access route for the Ah-Di-Na Campground. In the event of a wildfire, both of these roads could be compromised as evacuation routes if they were to become blocked by dense vegetation or downed trees. Therefore, an important aspect of the proposed action is the clearing and maintenance of these access routes.

Due to the limited access to the area, lightning strikes are the primary ignition sources of fires in the area (as opposed to human caused ignition). When a fire occurs, the limited road access also restricts the ability of responding ground firefighting resources and smoke jumpers are often utilized for suppression efforts. However, the project area becomes a lower priority area when there are multiple fires on the Forest that are closer to communities and competing for limited firefighting resources. This means that ignitions in the project area often have time to grow before initial attack resources can respond to them.

Recreation

The project area contains an 11.8 mile section of the Pacific Crest Trail (PCT), located in the northern half of the project area. The entire Squaw Valley Creek trail, also known as the Cabin Creek trail, (4.6 miles) is also located within the project boundary, following the Squaw Valley Creek. The use of the PCT is relatively infrequent, but the Squaw Valley Creek Trail receives a considerable amount of use (USDA 2011a). The Ah-Di-Na campground is located on the eastern boundary of the project area along the McCloud River. This heavily-used, developed campground is an extremely popular campsite during the fishing season.

Desired Future Condition

The desired future condition is embodied in the Forest Goals and Objectives, and further clarified by the standards and guidelines in the LRMP. Desired future conditions are based on current management direction, including the Northwest Forest Plan, LSRA, and additional related documents. The desired condition for the project area, as defined by the LRMP is:

- A vegetative and fuels condition that restores fire to its natural role in the ecosystem by planning and implementing fuel treatments that will emphasize and replicate fire's natural role in the ecosystem (LRMP p. 4-4; p.4-18[8d]).
- A fuels condition that allows for reduced fire behavior characteristics and enables a balance of fire suppression capability and fuels management investments that are cost effective and able to meet ecosystem objectives and protection responsibilities to landowners and recreationists (LRMP p. 4-4).
- Fuel levels which create a risk to public safety are reduced (LRMP 4-18).

³ Egress, or egression, is the action of leaving or going out of a place.

- Stand understories appear more open with less ingrowth due to fire playing a key role in stand development (LRMP 4-80, 4-84, 4-100, 4-122).
- Forest stands that support a diversity of plant and wildlife habitat (including Threatened, Endangered, and Forest Service Sensitive Species), good scenic quality, public health and safety, and a reduction of fire hazards and risk (LRMP pp. 4-4 through 4-6).
- Unroaded Non-motorized management prescription emphasizes vegetation treatment by mechanical/manual/chemical methods to protect forest resources from loss to wildfire, pathogens and insects (LRMP p. 4-45).
- Late-Successional Reserves are to be managed to protect and enhance conditions of late-successional and old-growth forest ecosystems, which serve as habitat for late-successional and old-growth related species including the northern spotted owl (LRMP p. 4-37).
- LSRs will have well-dispersed and continuous areas of multi-layered forests with high quality habitat characteristics and attributes. The amount of acres burned in high intensity wildfires will have decreased significantly due to the fuel management program reducing fuel loading throughout the Forest (LSRA p. 220).
- A landscape that allows for the successful management of unplanned ignitions to meet resource objectives (LSRA App. C p. 220).

The desired condition of the fuel management zones (FMZs) in the project area would reduce the current risk of large, stand-replacing fires and enhance the usability of roads and ridges in the project area for wildland fire management. Overstory trees would be thinned to reduce crown-to-crown overlap. The average height from the ground to the canopy would increase. Understory trees, shrubs, and heavy ground fuels would be reduced, increasing the potential of fire being contained at the FMZ. The density of the stand would be less than the current condition, with fewer trees per acre and the larger, more fire-resistant trees retained in the stand.

The desired condition is framed in context of the LRMP. All applicable management direction, standards and guidelines and other recommendations from other documents would be followed to meet the desired condition.

Purpose and Need

Purpose and need for action is generated by identifying the departure of the existing condition from the desired condition. Existing and desired conditions are described in more detail earlier in this document.

The purpose of this project is to reduce the risk of a stand-replacing fire in the LSR, improve firefighter and public safety by providing safe access in and out of the project area, and to restore fire in its natural role in the ecosystem. In order to meet the purpose of this project, there is a need to reduce fuels, improve safety of individuals, and improve forest ecosystem function and health within the project boundary. The following specific needs have been identified by the interdisciplinary team:

1. Reduction of fuels

- There is a need to reduce fuel accumulations in the project area to minimize current fuel loading and lessen the threat of habitat loss from future wildland fires.
- There is a need to protect existing late successional habitat from threats of habitat loss that occur inside and outside of the LSR.

- There is a need to reduce the likelihood of stand replacing disturbances that would result in the loss of key late-successional structure or existing and future late-successional forest.
- There is a need for the natural role of fire to be restored to the ecosystem at historic fire return intervals to facilitate fire-related processes on this landscape.

2. Improvement of safety of individuals

- There is a need to provide areas and access to areas where firefighters can safely employ suppression tactics to reduce the spread and severity of uncharacteristic wildland fire.
- There is a need to remove hazard trees in FMZs, along roads, and in developed recreation sites to reduce safety risk to humans working in and visiting the area.
- There is a need to provide for the safety of individuals along access routes and within developed recreation sites.

3. Improvement of forest ecosystem function and health

- There is a need to increase habitat quality within the project area to provide for a range of species, including rare and sensitive species and those that are associated with late successional stages.
- There is a need to maintain and promote the connectivity of late successional habitat.
- There is a need to promote long term sustainability of late-successional habitat by mitigating undesirable fire effects.
- There is a need to promote the development and long term sustainability of late successional habitat characteristics within the LSR.
- There is a need to enhance riparian habitat by reducing risk of loss from fire.
- There is a need to reduce stand densities in the project area to improve the resiliency of stands to a disturbance such as a wildfire.
- There is a need to create a vegetation profile with high spatial complexity to mimic historically characteristic fire patterns.
- There is a need for the natural role of fire to be restored to the ecosystem to facilitate fire-related processes in the landscape.
- There is a need to maintain the characteristics of ecosystem composition and structure within the IRA, by reducing the risk of uncharacteristic wildfire effects within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period.

Proposed Action

The proposed action (PA) was developed to address the Purpose and Need for the Lower McCloud Fuels Management Project. Fire behavior modeling, research, fire history data, local knowledge, and data collected from the project area assisted in the development of the PA. Proposed activities include mechanical treatments (mastication, thinning, machine piling), hazard tree abatement within FMZs and roads, and the use of prescribed fire as recommended in the LSRA and the relevant Watershed Analyses. The proposed action would utilize the existing road system; no new road construction is proposed.

Commercial products may be removed from the fuelbreaks, primarily to reduce residual fuels and to meet the intent of applicable management direction and desired future condition. The cutting, sale, or removal of timber from the fuelbreaks may be needed to reduce the risk of uncharacteristic wildfire effects and to maintain the ecosystem's composition and structure within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period. Commercial products may include biomass, firewood, or timber. The amount of residual fuel generated in the treatment of the FMZ will determine if the removal of fuel from the site would occur. If treated areas have high levels of activity generated, residual fuel that would render the fuelbreak ineffective, the fuel would be removed from the site by whichever method is most practicable.

The project area is approximately 12,071 acres in total, and the proposed action involves a total of 13,153 acres of treatments, with areas of overlapping treatment. There will be no treatments occurring outside of the project area. Approximately 1,630 acres of fuel management zones (FMZs) are proposed in order to create strategically located shaded fuelbreaks through the use of mastication, thinning, and machine piling. Proposed treatments would also facilitate the ingress⁴ and egress of the public and fire management personnel along National Forest system roads within the project area in the event of a wildland fire.

In addition, 11,523 acres are proposed for prescribed burning without prior mechanical treatment. In some areas, FMZs may overlap the prescribed fire acres, which would result in portions of the project area being treated with both thinning and prescribed fire.

The treatments would occur over approximately 7-10 years. The timing of implementation would be determined based on limited operating periods, fuels conditions, site specific resource protection measures, and compliance with appropriate State and Federal regulations.

Proposed Action Treatments

Treatments have been designed to create diverse, fire resilient ecosystems. Implementation would incorporate project design features including limiting operating periods (LOPs), best management practices (BMPs) and other land management guidance specific to the project. After public scoping, the inter-disciplinary team will develop relevant design features to accompany the proposed action.

Fuel Management Zones (FMZ)

Approximately 1,630 acres would be treated as fuel management zones. Treatment widths would vary from 300 to 600 feet, with the majority of the zones being about 600 feet wide. The proposed FMZs would be intended to create shaded fuelbreaks designed to reduce potential fire behavior in the treated area, thereby increasing the success of fire management operations. Fire intensity would also be reduced, potentially decreasing fire severity from a stand-replacing fire to a mixed-severity fire. Fuel management

⁴ Ingress is defined as an entrance, or a place or means of access.

zones would be constructed along specific roads and ridgetops in order to facilitate the use of these areas as evacuation routes.

Fuel management zones would reduce overstory, midstory, and understory fuels, including live vegetation. The FMZs would be created to have reduced surface and ladder fuel loading, a higher canopy base height, and reduced canopy bulk density compared to adjacent untreated vegetation. This would allow firefighters to safely employ suppression tactics to reduce the severity of wildland fire and to reduce the spread of a stand-replacing fire into, and through, the Iron Canyon Late Successional Reserve and West Girard IRA.

Within the FMZs, treatment type would be determined by existing vegetation on site. Large trees would not be targeted for removal. Vegetation would be thinned, removing trees as prescribed and authorized by management direction to create zones of reduced density and fuel. Thinning and brush cutting would be performed by hand or machine. Mastication would be performed by machine only. Material generated from proposed activities would be removed from site when practical, where equipment can be utilized. Where material cannot be removed, material would be piled by machine or hand and burned. After FMZs are created, portions will be underburned (see attached map). Brush cover would be reduced to encourage surface fire during implementation.

The following methods would be applied prescriptively throughout the FMZs to achieve the desired condition:

Thinning

Ladder and canopy fuels would be reduced by cutting specifically targeted trees within the FMZ, to create a residual stand that is healthier and more fire resilient. Resulting material would be removed from the site where operationally feasible and may be provided as commercial or personal use forest products. Where removal is not feasible, material would be machine or hand piled and piles would then be burned. Target thinning and brush cutting objectives following treatment are:

- Hardwoods are not targeted for removal and would generally be maintained except in situations where removal is necessary to meet fuels objectives.
- Canopy base height would be increased and canopy bulk density would be reduced.
- The overall density of the stand would be reduced, with a subsequent reduction in surface, ladder, and canopy fuels.

Mastication

Mastication is the process of mulching vegetation with machinery. Mastication treatments are designed to encourage the break-up of fuel continuity within the FMZs that has accumulated to historically uncharacteristic levels. Site specific prescriptions would reduce current stocking levels and remove ladder fuels, decrease brush cover, and concentrate on residual spacing. The masticated areas would have reduced piece size, and masticated material would be distributed across the treatment unit.

No machinery associated with mastication would travel on slopes exceeding 40%; however masticator heads may reach into these areas (e.g. use of excavator arm).

Machine Piling

Naturally occurring and activity generated fuels would be piled using machinery to reduce surface fuel loading in preparation of prescribed fire activities. No machinery associated with machine piling would travel on slopes exceeding 40%, however they may reach into these areas if capable (e.g. use of excavator

arm). Machine piles would be located in openings within the FMZ to avoid damage to the surrounding residual trees.

Hand Piling

Naturally occurring and activity generated fuels would be piled by hand using work crews to reduce surface fuel loadings in preparation of prescribed fire activities. Hand piling would be used in areas that machines are not able to access such as slopes exceeding 40%, or where soil conditions do not permit machinery to travel. Hand piles would be located in openings within the FMZ to avoid damage to the surrounding residual trees.

Pile Burning

In the FMZs, machine and hand piles as well as excess fuels intermixed in the FMZs would be burned following a site specific prescription. Ignition of piles and other fuels in the FMZs would occur during periods of low fire danger and would follow a project specific burn plan.

Hazard Tree Abatement

Hazard trees identified within the FMZs, roads, and developed recreation sites that pose a threat to employees and the public would be felled where determined necessary. Hazard tree removal would follow the *Hazard Tree Guidelines for Forest Service Facilities and Roads within the Pacific Southwest Region* (USDA-FS 2012).

Prescribed Fire

Approximately 11,523 acres would be treated with prescribed fire. Low to moderate intensity prescribed fire would be applied using an underburn to consume surface and ladder fuels in proposed areas. The prescribed fire treatments would be designed to create a mosaic burn severity pattern, primarily of low- to moderate-intensity surface fire. Moderate intensity fire would only be seen in the brush component of south facing slopes where flare-ups would occur. Fire in the overstory is not expected.

Multiple prescribed fire entries may be required to meet desired future conditions and would be entirely dependent on the existing condition. The goal of an entry would be to burn 50% to 80% of the unit per entry with incremental fuels consumption. Prescribed fire could be implemented any time of year provided that the site specific burn plan addresses this option and the associated design features, prescribed fire prescription, and limited operating periods are followed.

Prescribed fire lighting techniques would consist of aerial ignition (i.e., plastic sphere dispenser or helitorch) and hand lighting methods to achieve desired fire effects and to meet implementation objectives based on a site specific prescription developed for project implementation. Natural and man-made features, such as roads and trails, would be utilized for control lines to minimize ground disturbance where feasible. Fire lines would be constructed to mineral soil using a dozer and hand tools where natural barriers do not exist. At this time, approximately 0.21 miles (1,122 feet) of hand line and 1.9 miles (10,032 feet) of dozer line are part of the proposed action. The dozer line would be created by both constructing new fire line and scraping vegetation off of old roadbeds. The hand line would use pre-existing line that was constructed during the Bagley fire.

Target prescribed fire objectives following treatment are:

- Desired flame lengths in these treatment areas vary from 0-6 feet according to resource objectives.

- Large diameter dead/down material would be retained to adhere to the Standards and Guidelines listed in the LRMP to support soil stability.
- Up to 70% of the fuels less than 3 inches in diameters would be consumed while retaining a minimum of 50% soil cover.
- Ladder fuels would be reduced in an effort to increase canopy base height to 10 feet or greater.
- In shrub dominated areas, prescribed fire would be applied so that consumption patterns would vary. The objective in shrub dominated areas is to create a mosaic of age classes and diversity of species composition. A variety of species and age classes is desired.

Decision to be Made

The Forest Supervisor will decide whether to implement the proposed action, implement an alternative action that meets the purpose and need, or take no action.

How You Can Participate in the Planning Process

The Forest Service's project analysis process provides opportunities for interested parties to provide their ideas and comments regarding resource management proposals. This input is important in assisting the Forest Service with the identification of issues which will shape the alternatives evaluated and lead to a decision. This public review and scoping period is also used in the project planning process under the National Environmental Policy Act (NEPA).

This is your opportunity to be involved in helping to develop and refine the proposed activities for the Lower McCloud Fuels Reduction Project. You are encouraged to submit project-specific written comments related to the proposed action during this 30-day scoping period. The scoping period will run for 30 days, beginning when the Legal Notice is published in the newspaper of record, the Redding Searchlight. Comments received within the 30-day scoping period will be fully considered and most useful in helping the Forest Service develop issues and alternatives.

This project is subject to comment pursuant to 36 CFR 218, Subparts A and B. Only those who submit timely project-specific written comments during a public comment period are eligible to file an objection. Individuals or representatives of an entity submitting comments must sign the comments or verify identity upon request. Note that the process followed under the new regulations (36 CFR 218) is different than the process followed under the former regulations (36 CFR 215) in that commenters will have standing to object by providing timely specific written comments during any designated opportunity for public comment, including this scoping period. Pursuant 36 CFR 218.2, specific written comments should be within the scope of the proposed action, have a direct relationship to the proposed action, and must include supporting reasons for the responsible official to consider.

Please include the following information with your comments:

1. **Your name, and address (telephone number and email are also suggested),**
2. **The project name: Lower McCloud Fuels Management Project,**
3. **Site-specific comments about the proposed action, along with supporting information you believe will help identify issues, develop alternatives or predict environmental effects of the proposal,**

4. Signature or other verification of identity of individual or entity (individual members must submit their own comments to establish personal eligibility).

The most useful comments provide new information or describe unwanted environmental effects potentially caused by the proposed action.

The Responsible Official for this project is: Dave Myers, Forest Supervisor, Shasta-Trinity National Forest.

Please send written comments to:

**Heather McRae, Fuels Specialist
USDA Forest Service
Shasta McCloud Management Unit
P.O. Box 1620
McCloud, California 96057.**

Electronic comments and other data may be submitted via e-mail to:

comments-pacificsw-shasta-trinity-mtshasta-mccloud@fs.fed.us

Or via facsimile to (530) 964-2938

Comments received, including names and addresses of those who comment, will become part of the public record for this proposed action.

After issues and alternatives derived from scoping comments are approved by the Responsible Official, the analysis for the Draft EIS will begin; including continued consultation with appropriate Federal, State, and Tribal agencies. The Draft EIS is expected to be completed by December of 2016. The Draft EIS will be available on the forest website, or by request, and your participation now will ensure that you receive all future mailings for the project.

Further Information

Updated information regarding this proposal may be found at:

http://www.fs.fed.us/nepa/nepa_project_exp.php?project=31316

If you have any questions about this proposal or need additional information, please contact Heather McRae, Fuels Specialist, at the address above or call (530) 964-2184.

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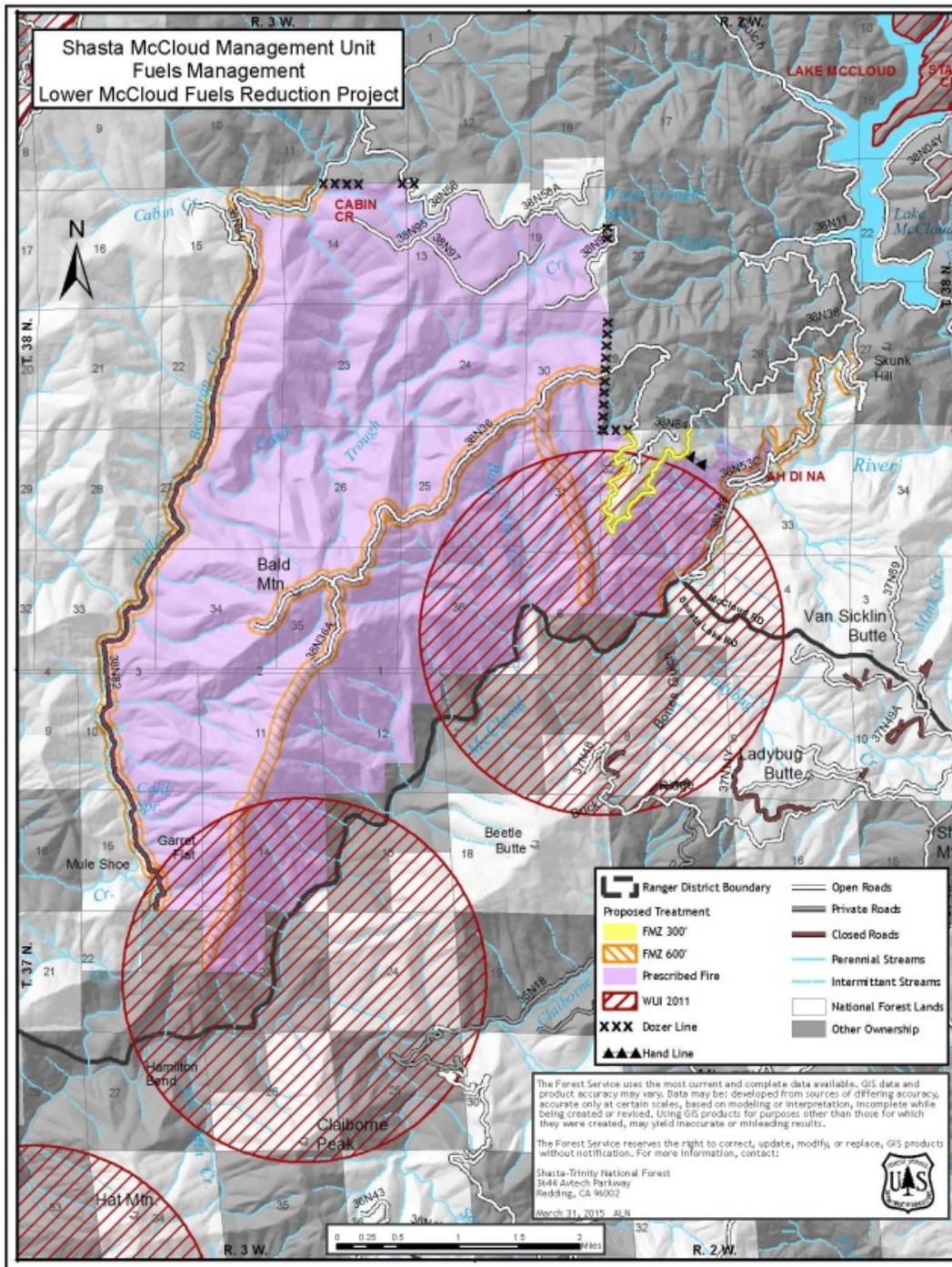


Figure 1. WUI locations in relationship to the proposed project area.