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The Beckwourth Ranger District has recently completed the final draft of the Smith Peak, Lake Davis & Jackson Creek Off Highway Vehicle & Over Snow Vehicle Opportunities Feasibility Report, 2014. Prior to submitting the final report to the State, I am providing a copy to the Council for review and discussion at the October Coordinating Council Meeting.

DEB BUMPUS  
District Ranger





# **SMITH PEAK, LAKE DAVIS, & JACKSON CREEK**

## **OFF HIGHWAY VEHICLE & OVER SNOW VEHICLE OPPORTUNITIES**

**Feasibility Report 2014**

**Plumas  
National  
Forest**

Beckwourth  
Ranger District



United States  
Department of  
Agriculture



Forest Service  
Pacific Southwest Region  
Plumas National Forest  
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Lake Davis from Bagley Pass, looking toward Smith Peak

## I. INTRODUCTION

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### Overview

This feasibility report explores the potential for developing Off Highway Vehicle (OHV) and Over Snow Vehicle (OSV) opportunities. The Project Area includes Lake Davis, Smith Peak and Jackson Creek areas. This report will refer to these areas as “The Project Area.” The area covered by this document is depicted on the map in Figure 1.1 OSV Travel Route. Based on information received from resource specialists and public input, this report will identify and recommend OHV and OSV opportunities. It is anticipated that these opportunities may become future proposed actions, subject to the National Environmental Policy Act (NEPA) and pursued in future planning activities depending on funding and staffing.

Funding for this project came from Grant #G10-02-13-P02 received from California State Parks, Off-Highway Motor Vehicle Division. Matching funds in the form of staff time and resources were contributed from the USDA Forest Service’s appropriated funds.

The Project Area is located in Plumas County, Plumas National Forest, on the Beckwourth Ranger District. Several small communities are located near the Project Area, including Beckwourth, City of Portola, Maybe, Blairsden, and Graeagle. Historically these communities thrived on timber harvest and the railroad. Today with a decline in timber sales these communities are struggling economically. Other communities faced with the same economic decline are turning to recreation and/or tourism as a means of economic support. Developing and/or enhancing OHV and OSV opportunities within the Project Area are expected to bring economic benefits to these local communities.



## Benefits

Plumas National Forest (PNF) recognizes the value of using the system of existing trails and roads to serve the OHV and OSV public. The Project Area has the potential to serve as an important motorized recreational trail system connecting users with existing recreation areas. This Feasibility Report will address OHV and OSV opportunities within these areas. OHV and OSV opportunities could be enhanced by providing staging areas and a marked trail system within the Project Area.

Currently parking of vehicles and trailers in the Project Area is limited. Adding developed staging areas would address parking issues. The lack of staging areas leads to safety concerns and resource damage from vehicles parking off the roadway. Designating and marking trails will help keep OHVs and OSVs on authorized routes, minimizing resource damage and impacts to sensitive species and their habitat.

Lakes Basin Recreation Area has the only established OSV trails in close proximity to the Project Area. The Lakes Basin trail system is groomed and there is a developed staging area to access the trail system. Designating a system of OSV trails in the Project Area will create an alternative OSV opportunity and reduce the impacts and overcrowding in the Lakes Basin Area.



Lakes Basin Recreation Area 2010

## Feasibility Report vs Planning Document

In 2010 the PNF received a grant from the State of California Off Highway Motor Vehicle Recreation Division for OHV related planning activities that included a winter and summer recreation management plan for the Jackson Creek, Smith Peak and Lake Davis areas. Since receiving the grant, the Forest has

received record low snow packs preventing the agency from gathering critical winter field data needed to accurately collect and analyze data needed to develop a management plan. Since receiving the grant, the Forest completed Sub Part B of the Travel Management rule that designated motorized routes and prohibited cross country travel.

Using information collected to date from resource specialists and comments from the public, the Forest will determine the feasibility of creating additional OHV and OSV opportunities. This information will be presented in this Feasibility Report.



**Portola Bridge 1910**

## **Public Scoping and Involvement**

Three public meetings were held to explain the project and solicit feedback from the public. The meetings were held on January 26, 2012, March 7, 2012 and July 31, 2012. A total of 68 people attended the public meetings. A summary of the comments received at the meetings and throughout the process are listed in Appendix A. A wide range of comments were received, with some members of the public supporting increased OHV and OSV recreation opportunities, while others preferred to recreate in a more quieter setting and discussed the need to balance motorized vs. non-motorized recreation opportunities. A significant portion of comments were in favor of the status quo and suggested that the existing opportunities were sufficient.



## **II. EXISTING CONDITION**

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OSV Use: The winter use in the Project Area is dispersed and sporadic depending on the season's snow accumulation. There are no groomed snowmobile trails or designated trails in the Project Area. There are no developed staging areas. OSVs are permitted to travel on existing roads or travel cross country to various destinations in the Project Area. There are currently no OSV travel restrictions in the Project Area. Other winter use includes snowshoeing, cross country skiing, dog sledding and ice fishing.

OHV Use: As a result of the Travel Management Analysis, OHV use is limited to a system of identified roads and trails shown on the Motorized Vehicle Use Map. The Travel Management Analysis was completed in August 2010 and will be described in more detail in Section III. In the Project Area there are approximately 328 miles of roads open to OHV, and 9.45 miles of trails. There are no OHV support facilities, i.e. trailheads, staging areas or campgrounds outside the Lake Davis developed recreation area, linking together a network of OHV routes.

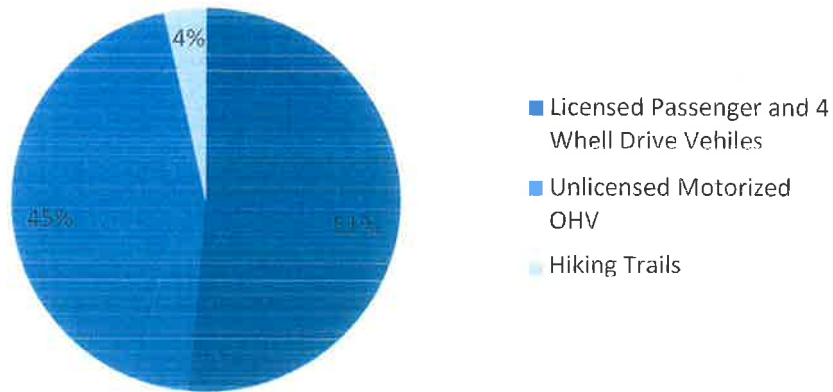
### **Area Description**

The PNF occupies approximately 1.2 million acres of scenic mountain lands in the northern edge of the Sierra Nevada, just south of the Cascade Range. Known for its high alpine lakes, clear-running streams, the forest sits at the top of the watershed that supplies water to many California citizens. Trees within the forest are mostly conifers, which reach high into the sky and are beautifully latticed with snow during winter. Aspen stands dot the landscape and turn brilliant gold in the fall. Recreational opportunities are available in every season and offer a wide range of activities for the recreational enthusiast. Some 300 miles of hiking trails are maintained throughout the forest, including the Pacific Crest Trail.

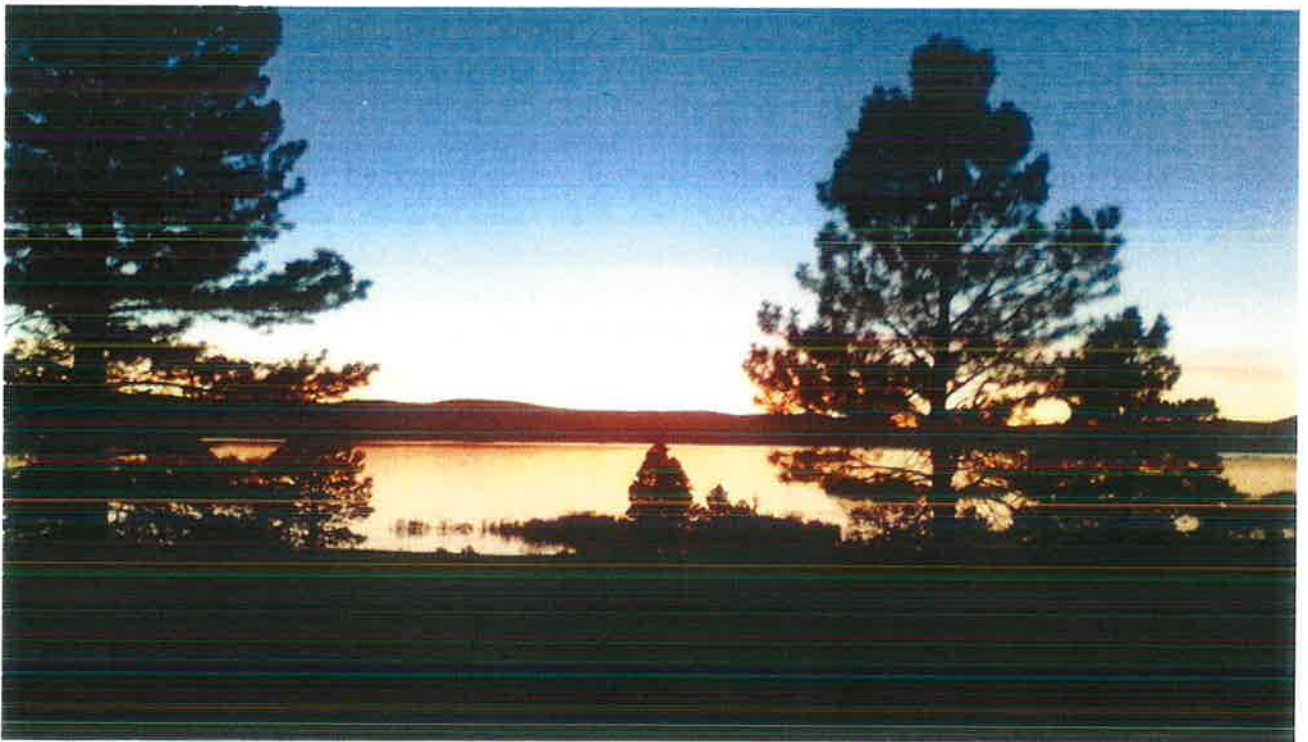
Each year more outdoor enthusiasts are attracted to the PNF for its many recreational activities. With an ever increasing number of recreational uses the PNF is challenged with developing recreational areas that meet a variety of interests.

The PNF manages 4,482 miles of multiple use trails. These include 4,118 miles that are accessible by passenger car use; 4,383 are available for 4-wheel drive use; 3,802 are available for unlicensed All-terrain Vehicles (ATV) use; 3,855 are available for unlicensed motorcycle use; approximately 300 miles of hiking trails, and approximately 75 miles of the Pacific Crest Trail extends across the PNF, crossing two major canyons, the Middle Fork and North Fork of the Feather River.

### 4,482 Total Miles of Multiple Use Trails



The PNF consists of three Ranger Districts: Beckwourth, Mt Hough, and Feather River. The Project Area is part of the Beckwourth Ranger District (BKW). The BKW is responsible for managing three recognized recreation areas: Frenchman Lake, Lake Davis, and Lakes Basin. These recreational areas are well known for having a variety of outdoor activities, attracting users and tourist from all over who enjoy the many lakes, streams, trails, campgrounds, and associated activities. The Project Area includes Lake Davis Management Area, Mt. Ingalls Management Area, and Penman Peak Management Area. Smith Peak and Jackson Creek are located to the west of Lake Davis and bordered by Highway 70 to the south and west. Smith Peak is within the Mt. Ingalls Management Area and Jackson Creek is within the Penman Peak Management Area.



## Lake Davis-Management Area #37

The Lake Davis Recreation Area surrounds Lake Davis. Lake Davis is located approximately 6 miles north of Portola, and is a popular fishing and camping location. The major attraction of the area is the 4,000 acre reservoir of the California Water System formed by damming Big Grizzly Creek in 1966. Gradual releases provide domestic-use water to communities within Plumas County and stream flow to Grizzly Creek and the Middle Fork of the Feather River. Lake Davis is well known for its ability to produce trophy rainbow trout; each year recreationalists come from the surrounding areas and participate in OHV/OSV activities, fishing derbies, and recreation events. Lake Davis is home to several nesting pairs of bald eagles, osprey and other wildlife species. Camp Five, Honker Cove, Mallard Cove, and Lighting Tree all have paved boat launching ramps, floating boat docks, toilets and paved parking lots. Camp Five boat ramp also has a 100 foot long universally accessible fishing levee for deeper water fishing. A concessionaire manages three campgrounds around Lake Davis; Grizzly, Grasshopper Flat, and Lighting Tree Campgrounds have 144 family camping sites, 21 double sites and one group site adjacent to the Lake. Camping outside of a developed campsite is not permitted in the Lake Davis Recreation Area.



Smith Peak Lookout

## Smith Peak-Mt. Ingalls Management Area #31

Mt Ingalls Management Area is between Mt. Ingalls and Grizzly Ridge and continues westward to Argentine Rock and eastward to Smith Peak and Bagley Pass. Red Clover Creek forms the northeast boundary. Terrain is gentle to moderately steep. Elevations range from 5,000 feet to 8,372 feet at Mt. Ingalls. Watersheds include Red Clover and Little Grizzly Creeks, tributaries to Indian Creek and the North Fork of the Feather River, and Big Grizzly Creek, tributary to the Middle Fork of the Feather River, in Sierra Valley via Lake Davis. Little Grizzly Creek is sterile due to inflow from the abandoned Walker Mine.



There are no developed recreation sites in the management area, but many dispersed hunter camps are present. The forest type varies with increasing elevation from ponderosa and Jeffrey pine to mixed conifer and red fir. It is summer range for the Sloat and Doyle Deer Herds. There are productive fisheries in most streams, except Little Grizzly Creek. Goshawk, spotted owls, and bald eagles occur within the area and a bald eagle management zone is included.

Prehistoric and historic cultural resources are common. The Smith Peak Lookout built in 1935 by the Civilian Conservation Corps is located on the boundary of the Mt Ingalls and Penman Peak Management Area and adjacent to Lake Davis Management Area. This tower is still actively used as part of the first line of defense against forest fires on public lands. It is perched more than 7,500 feet above sea level atop craggy granite outcropping of bare rock. The view from Smith Peak Lookout takes in Mt. Ingalls, Mt. Lassen, Lake Davis, the town of Portola, the Sierra Valley and the Sierra Buttes. The Lookout is located about three miles southwest of the Lake Davis Dam and provides a good view of the Lake. It is open full time during fire season.



Forest Road 23N11 near Jackson Creek Picnic Area

### **Jackson Creek-Penman Peak Management Area #32**

The Penman Peak Management Area is located between the Middle Fork of the Feather River and Grizzly Creek on the east. Several communities lie within or adjacent to the boundary of the Project Area; Sloat, Cromberg, Blairsden, Delleker, and the City of Portola. Many other smaller communities are scattered along the southern boundary.

Topography is gentle to moderately steep with elevations ranging from 4,100 feet to 7,700 feet. Soils are pyroclastic in type in the south half of the Project Area and are considered highly erodible and moderately to highly unstable. Several small watersheds are within the Project Area, some supply water to domestic

communities but all are tributaries to the Middle Fork of the Feather River. The area is a key winter and summer range for the Sloat deer herd. Spotted owl and goshawk territories are present.

Jackson Creek Picnic Area is the only developed site in the management area. There are several dispersed campsites available for public use.

### **III. CONSTRAINTS**

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Prior to implementing any project on National Forest System (NFS) Lands the forest must implement a number of environmental processes that generally require one to five years dedicated to collecting scientific data, documentation, public review and decision-making. It must meet the requirements as described in the National Forest Management Act of 1976 (NFMA), the Multiple-Use Sustained-Yield Act (MUSYA), the Endangered Species Act, and the National Environmental Policy Act 1969 as well as all other legal requirements.

## **National Environment Policy Act 1969 (NEPA)**

The National Environmental Policy Act (NEPA) [42 U.S.C. 4321 et seq.] was signed into law on January 1, 1970. The Act establishes national environmental policy and goals for the protection, maintenance, and enhancement of the environment and provides a process for implementing these goals within the federal agencies. The Act also establishes the Council on Environmental Quality (CEQ).

Title I of NEPA contains a Declaration of National Environmental Policy which requires the federal government to use all practicable means to create and maintain conditions under which man and nature can exist in productive harmony. Section 102 requires federal agencies to incorporate environmental considerations in their planning and decision-making through a systematic interdisciplinary approach. Specifically, all federal agencies are to prepare detailed statements assessing the environmental impact of and alternatives to major federal actions significantly affecting the environment. These statements are commonly referred to as environmental impact statements (EISs).

This project, the Feasibility Report, is not subject to the NEPA process. This report merely provides or recommends options to enhance or provide new OHV and OSV opportunities in the Project Area. At a later date, depending on the availability of resources, these opportunities may be brought forth as proposed actions. These proposed actions will then be subject to NEPA and the analysis will address the potential effects of the proposed action and associated alternatives.



# Forest Land Management Plan

The Forest Service manages nearly 11.5 million acres of land under the Sierra Nevada Forest Plan. The Forest Plan is a Land and Resource Management Plan (LRMP) formulated and pursuant to the National Forest Management Act (NFMA). See 16 U.S.C. § 1604. NFMA requires the Forest Service to provide for, and to coordinate multiple uses of the national forests, including “outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness.” 16 U.S.C. § 1604 (e) (i). An LRMP adopted pursuant to NFMA guides all management decisions within the forests subject to that LRMP. Individual projects are developed according to the guiding principles and management goals expressed in the LRMP. The original Forest Plans were prepared under the 1982 Planning Rule which was revised and released as the 2012 Planning Rule.

## Laws and Regulations

### National Forest Management Act

The Forest Service is complying with the provisions of this law by designing the project to meet Standards and Guidelines of the Forest Plan and its amendments (FEIS Ch. 3 and Appendix B).

### 2005 Travel Management Rule 36 CFR 212, Subpart B

Forest Service regulations at 36 CFR part 212 governing administration of the forest transportation system and regulations at 36 CFR part 295 governing use of motor vehicles off National Forest System (NFS) roads are combined and clarified in this final rule as part 212, Travel Management, covering the use of motor vehicles on NFS lands. These regulations implement Executive Order (E.O.) 11644 (February 8, 1972), “Use of Off-Road Vehicles on the Public Lands,” as amended by E.O. 11989 (May 24, 1977). These Executive orders direct Federal agencies to ensure that the use of off road vehicles on public lands will be controlled and directed so as to protect the resources of those lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands.

### Clean Water Act

The Clean Water Act (CWA) is the primary federal law in the United States governing water pollution. Passed in 1972, the objective of the Federal Water Pollution Control Act, commonly referred to as the Clean Water Act (CWA), is to restore and maintain the chemical, physical, and biological integrity of the nation's waters by preventing point and nonpoint pollution sources, providing assistance to publicly owned treatment works for the improvement of wastewater treatment, and maintaining the integrity of wetlands.

### Clean Air Act

The Clean Air Act sets standards for air quality to protect public health and welfare. The Forest Service must ensure that its activities, or activities it permits, comply with these national standards and any State and local requirements for air pollution control. States develop State Implementation Plans (SIPs) describing how they will implement the requirements of the Clean Air Act.

## **Migratory Bird Act and Bald and Golden Eagle Protection Act**

The responsibilities of Federal agencies to protect migratory birds are set forth in Executive Order 13186. US Fish and Wildlife Service is the lead agency for migratory birds. FSA and NRCS are currently working with USFWS to establish an MOU on migratory birds in compliance with EO 13186. The birds protected under this statute are many of our most common species, as well as birds listed as threatened or endangered.

### **Bald Eagle and Golden Eagle Act 1940**

The bald eagle will continue to be protected by the Bald and Golden Eagle Protection Act even though it has been delisted under the Endangered Species Act. This law, originally passed in 1940, provides for the protection of the bald eagle and the golden eagle (as amended in 1962) by prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit (16 U.S.C. 668(a); 50 CFR 22). "Take" includes pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb (16 U.S.C. 668c; 50 CFR 22.3). The 1972 amendments increased civil penalties for violating provisions of the Act to a maximum fine of \$5,000 or one year imprisonment with \$10,000 or not more than two years in prison for a second conviction. Felony convictions carry a maximum fine of \$250,000 or two years of imprisonment. The fine doubles for an organization. Rewards are provided for information leading to arrest and conviction for violation of the Act.

### **Endangered Species Act**

Endangered Species Act was signed on December 28, 1973, and provides for the conservation of species that are endangered or threatened throughout all or a significant portion of their range, and the conservation of the ecosystems on which they depend. The ESA replaced the Endangered Species Conservation Act of 1969; it has been amended several times.

### **Executive Order 13112 Invasive Species 64 FR 6183 (February 8, 1999)**

The laws of the United States of America, including the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.), Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990, as amended (16 U.S.C. 4701 et seq.), Lacey Act, as amended (18 U.S.C. 42), Federal Plant Pest Act (7 U.S.C. 150aa et seq.), Federal Noxious Weed Act of 1974, as amended (7 U.S.C. 2801 et seq.), Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.), and other pertinent statutes, to prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause.

### **National Historic Preservation Act**

Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires Federal agencies to take into account the effects of their undertakings on historic properties, and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment. The historic preservation review process mandated by Section 106 is outlined in regulations issued by ACHP. Revised regulations, "Protection of Historic Properties" (36 CFR Part 800), became effective August 5, 2004.

# Travel Management

On November 2, 2005 the Forest Service announced a new regulation governing off-highway vehicles and other motor vehicle use on national forests and grasslands. Forest Service regulations 36 CFR part 212 and 36 CFR part 295 were combined and clarified in this final rule as part 212, Travel Management Final Rule.

## Travel Management Final Rule Subpart A

Subpart A of the Travel Management Rule requires each national forest to identify a road system adequate for safe and efficient access for recreation and resource management, while protecting natural and cultural resources. To meet this direction, forests are going through a Travel Analysis Process. This process will gather and display important information to aid in future direction, such as identifying National Forest System roads that may be unneeded, or that may be suitable for conversion to other uses, such as trails. Results of this analysis may also identify areas within the forest that could warrant additional roads to meet all management and public access needs. The process itself does not result in a decision, therefore does not trigger the National Environmental Policy Act (NEPA). It does serve as a basis for developing future proposed actions that will be analyzed under NEPA.

## Travel Management Final Rule Subpart B

Subpart B of the Travel Management Rule requires national forests to designate roads, trails and areas open to motor vehicle use and display them on a Motor Vehicle Use Map (MVUM). Designations are to be made by class of vehicle and, if appropriate, by time of year. The final rule prohibits the use of motor vehicles off the designated system, as well as use of motor vehicles on roads and trails that is not consistent with the designations.

On August 30, 2010 Forest Supervisor Alice Carlton signed the Record of Decision completing the first phase of the Plumas National Forest travel management planning effort (36 CFR 212, Travel Management Regulations- Subpart B), establishing a baseline forest transportation system for motorized vehicles. The decision designated roads and trails that are open to motor vehicle use and prohibited cross-country motorized travel. The effort generally focused on the proliferation of unauthorized motorized travel routes and made the decision on which of those routes should be added to the PNF National Forest Transportation System (NFTS). The decision culminated 6 years of planning with more than 20 community meetings, workshops and open houses.

## Travel Management Final Rule Subpart C

The purpose of this subpart is to provide for regulation of motorized over-snow vehicle (OSV) use in National Forests. As a result of a court order in March 2013, the Forest Service has issued a proposed rule to amend the agency's Travel Management rule to require designation of National Forest System roads, trails, and areas where OSV use is allowed, restricted, or prohibited. A settlement agreement in response to another case on Sierra Nevada national forests requires five forests, including the Plumas, to conduct National Environmental Policy Act (NEPA) analysis on OSV use. These five forests are beginning this

analysis process to address these two requirements. The forests are on a staggered schedule, with a decision currently expected for the Plumas in 2017.

### **Plumas National Forest Travel System Prior to Travel Management Decision**

Prior to the Travel Management Final Rule, the Plumas National Forest Transportation System (NFTS) listed approximately 4,137 miles of roads and 130 miles of motorized trails, plus one open area, available for public use. The Forest also had about 214 miles of closed system roads; roads which could be used for future forest management but were currently closed to reduce impacts.

Prior to the start of the environmental analysis, approximately 1107 miles of unauthorized routes on the forest were analyzed. The analysis included routes identified by the Forest Service and routes submitted over several seasons by interested members of the community. The routes were filtered to remove short dead end spurs (largely temporary timber sale skid trails), routes without legal Right of Way across private property, routes causing extreme resource damage, and other resource problems. Care was taken to provide access to as many key recreation destinations as possible and to provide linkages or loop opportunities between routes. Resource specialists then surveyed about 410 miles of routes for potential inclusion in the NFTS.

### **Plumas National Forest Travel System After the Travel Management Decision**

This final decision increased the Plumas NFTS from 4,137 miles of legal travel routes to 4,482 miles of legal travel routes. It provides critical recreation opportunities by adding 234 miles of trails to the existing authorized motorized system. The decision increased the Forest's motorized trail network from 130 miles to 364 miles. Some routes became available immediately upon implementation of the decision while some routes must have maintenance work completed before they can be legally used.

**Seasonal Restrictions:** Seasons of allowed use have been placed on a small number of routes (53 miles) to protect nesting bald eagles, spotted owls and goshawks along with CA red-legged and mountain yellow-legged frog movement during wet periods. Protection is also important for some highly erodible soils during wet periods. Because these routes have very high recreation value, seasons of allowed use allow recreation users some access.

**Motorized Mixed Use:** Mixing both highway legal and non-highway legal vehicles is limited to 4.1 miles on Slate Creek Road (Rd. 24N28) to provide important ATV access between trails.

**Dispersed Recreation Spurs:** Ninety nine short unauthorized road segments (1/2 mile or less) were added to provide dispersed recreation opportunities. Sites along roads and trails are considered part of the transportation system and are also available for parking allowing access to these dispersed recreational sites. A designation of a road or trail includes all terminal facilities, trailheads, parking lots, and turnouts associated with the road or trail.

**Protection of Inventoried Roadless and Wilderness Areas:** The Travel Management Decision did not add any motorized trails to Wilderness or Inventoried Roadless Areas.

**Access to private land:** The Travel Management Decision did not designate motorized trails to or through private land where the Forest Service does not have right of way nor does the decision change existing right of way access for adjacent private landowners.

**Decommissioning unauthorized routes:** The Travel Management Decision did not authorize any route decommissioning. Decommissioning needs to be identified in a future project, analyzed with opportunities for public involvement, and approved, or not.

**New Construction:** The Travel Management Decision did not authorize any new construction, reconstruction or relocation activities. As with decommissioning, these activities would need to be approved in a project specific analysis with public involvement.

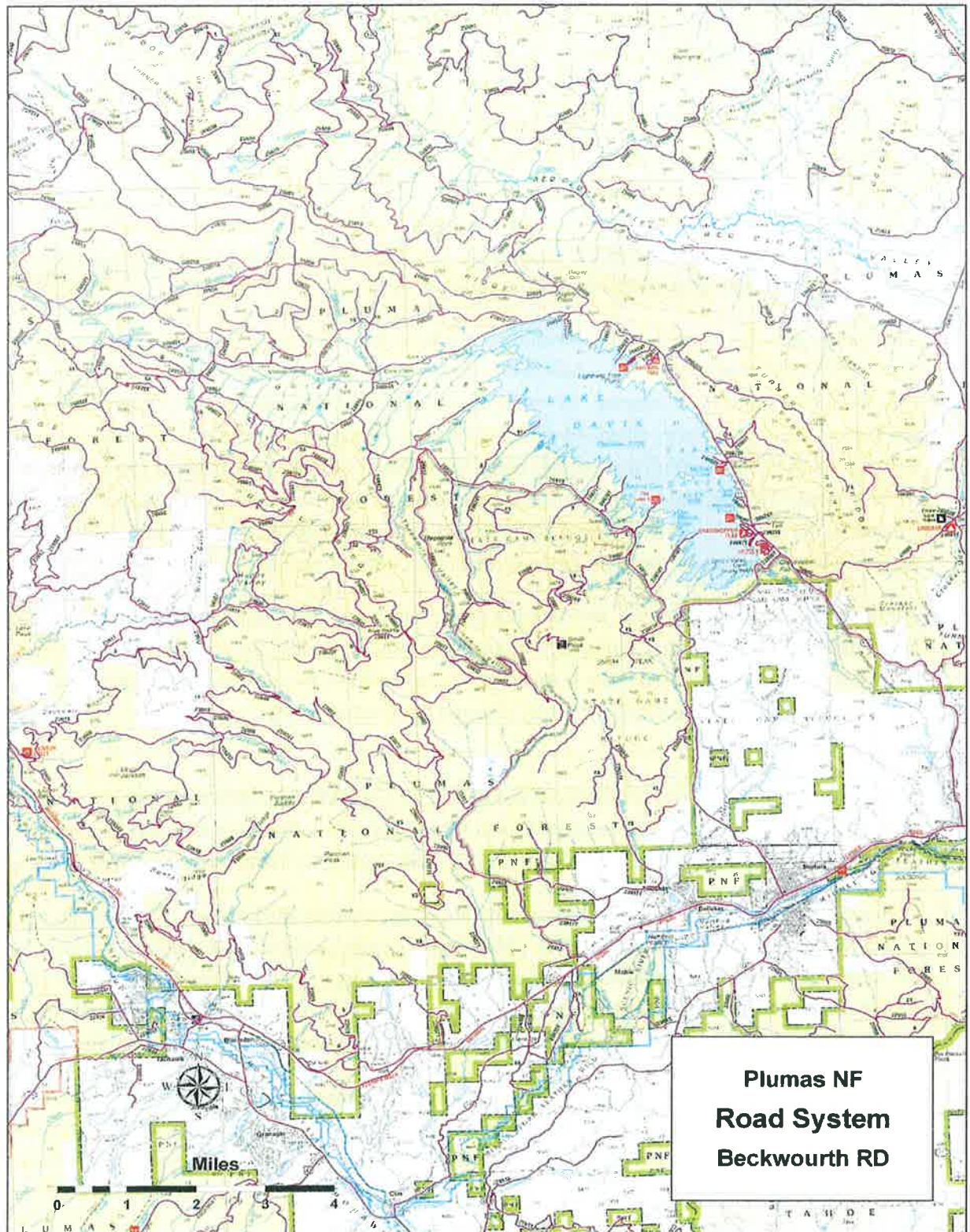
**Fuel-wood gathering, hunting or big game retrieval:** Vehicles are not allowed to leave the designated transportation system to travel cross country for these purposes.

**Parking off road or trail:** Vehicles may park one vehicle length off the road or trail. Hardened pullouts and wide areas that are contiguous to the road or trail are considered part of the road or trail.

**Actions outside of this Decision but related to motorized travel on the PNF:** One hundred and fifty miles of roads previously available only for highway legal vehicles are now available to all vehicles as road maintenance levels were downgraded to reflect their existing rougher conditions.



## Motor Vehicle Use Map (MVUM) for Project Area



## IV. RESOURCE REPORTS

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### Socio-Economic

Plumas County, located in the northern part of the Sierra Nevada, was formed in 1854 from the eastern portion of Butte County. Many mining communities sprang up in the county during these times. The town of Quincy was chosen as the county seat and the city of Portola became the only incorporated city in Plumas County. Over the next decades, different industries influenced the growth of the various settlements that sprung up around the county. Mining, timber harvest, farming, ranching, and the railroad each had its influence in shaping Plumas County.

The mining industry created a high demand for timber to build housing, timber for mining procedures, and especially to build railroads. Like many other towns in the northern California Sierras, Portola was founded on the industry of logging. In 1905, lumbermen from the nearby city of Reno, Nevada, came into the Portola area to find large stands of pine and fir trees. Soon logging mills and lumber companies sprang up throughout the area. With the logging mills, the railroad soon followed and in 1905 the Portola area got its first name, “Headquarters,” after a small logging camp with about one hundred men was established. Thanks to the railroad, Plumas County could export its lumber beyond the local area, which allowed the timber industry to become the dominating force in the county’s economy.

Along with the railroad, logging, and farming operations, more and more families began to settle into the area. Between Beckwourth, Clairville, Portola, and Mohawk Valley, the population grew to over five thousand residents. Stores and other businesses formed to serve the growing population. With the completion of the Western Pacific Railway through the Feather River Canyon in 1910, Portola was an ideal location for a depot.

In those days timber use was unregulated and within 20 years after the gold rush, a third of the timber in the Sierra Nevada was logged. The onset of World War II placed another huge demand for timber and again logging dramatically increased in the Sierras using clear-cutting as the dominant form of logging.

Concern for the forests created a movement towards conservation and tourism. The tourism potential of the Sierra Nevada was recognized as early as 1864 when Congress passed a bill granting Yosemite Valley to the State of California as a public park. Conservation measures continued and by the turn of the 19th century advocates such as President Roosevelt, John Muir, Gifford Pinchot, and others worked together in creating state and national parks and the forest reserves, now known as the U.S. Forest Service.

As the 20<sup>th</sup> century progressed and the timber, mining and railroad industries declined, more of the Sierra became available for recreation leaving behind only remnants of what were once thriving communities. The city of Portola and surrounding communities are prime examples of the economic effects declining industry has on communities. (*Sources: History of Portola, Rebecca Rhode, 2003 and Wikipedia*)





Feather River Mill #2 Portola CA 1930's



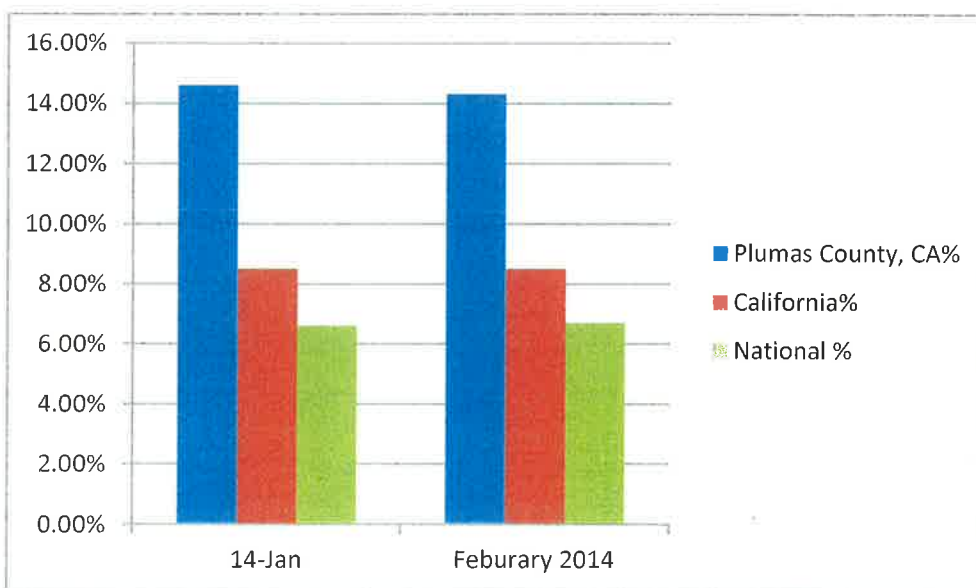
Delleker Logging Mill 1930's

## Changing Economy

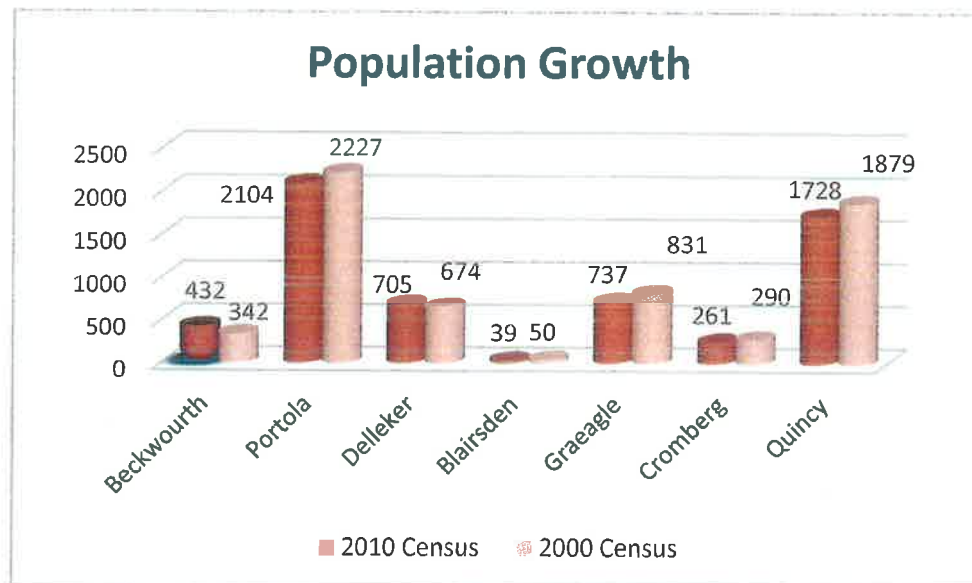
Between the 2000 census and the 2010 census as many as 72 wage and salary jobs were lost in Plumas County, representing a decline in total employment of 1.1 percent. The unemployment rate in 2010 increased to 17.0 percent. The current 2014 unemployment rate for Portola is 14.3%. (homefacts.com)

The largest sectors in the county are retail trade, leisure services, and government. During 2010 many of the smaller sectors created jobs, including mining, transportation, warehousing, and education however these small employment gains were offset by losses in government (-60 jobs), construction (-48 jobs) and manufacturing (-28 jobs).

The population in Portola declined 5.5 percent over the last decade. Net migration was negative last year with 153 net migrants leaving the county.



2014 Plumas County, CA Current Unemployment - 14.3%



2000 and 2010 Census: Demonstrates -47% Average Population Growth

## Hydrology, Climate and Soils

The Project Area is approximately 112,833 acres in size. Approximately 80% of the Project Area is within the Lake Davis-Long Valley (LDLV) watershed, 9% in the Red Clover watershed, 11% in the Lower Indian Creek watershed. The Project Area is about 45% of the LDLV watershed. Due to the small percentage of watershed contribution by Lower Indian and Red Clover watersheds to the overall Project Area, and the close proximity of these contributing areas to the LDLV watershed, the general condition and description of the Lake Davis-Long Valley watershed is judged to be representative of the Project Area as a whole. The Big Grizzly Creek watershed, a sub-watershed of the LDLV watershed and designated as a priority watershed for management planning purposes, comprises about 27% of the Project Area. This overview is represented in Figure 1. The information that follows is from a Watershed Analysis conducted for the Lake Davis-Long Valley watershed. Snow and road density data have been updated to reflect more current conditions. Information for sub-watersheds making up LDLV but not within the Project Area has been omitted.

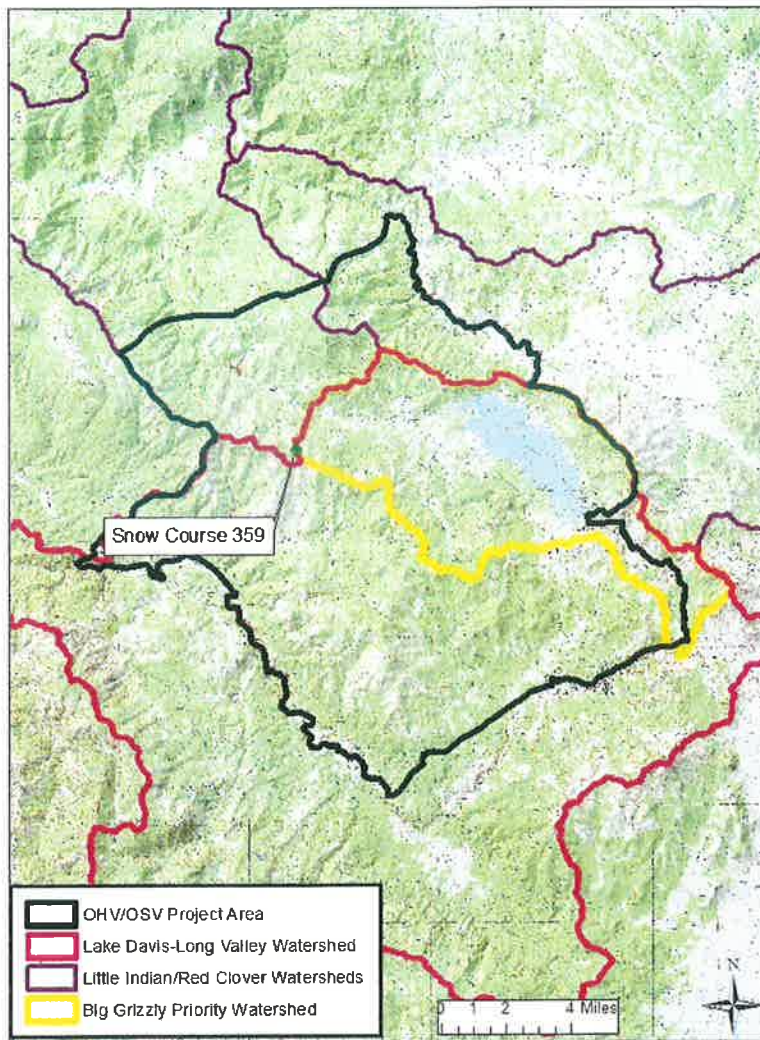


Figure 1. Overview of project area in relation to watersheds it is in.

## Watershed Assessment

### *Lake Davis Long Valley Watershed Assessment*

The purpose of this Watershed Analysis document is to present a comprehensive overview of Lake Davis Long Valley (LDLV) Watershed. It is a compilation of archeological, botanical, and fire reports, archived timber contracts, historic timber and land exchange atlases, timber and silvicultural records, landscape analyses, and other reports derived from field reconnaissance and scientific data collection. This is an evolving, dynamic document that requires an interactive process and will be revised and updated as more information becomes available and new management activities and natural disturbances occur.

A *watershed* is the entire region that drains water, sediment, and dissolved materials to a common outlet at some point along a waterway. The watershed serves as a geographic unit where the hydrologic and geomorphic processes associated with the movement of materials; energy and organisms into, out of and through the stream corridor are observed and measured. Watersheds occur at multiple scales. They can be



as small as a rivulet in the Sierra Nevada's or as large as the Amazon River which includes parts of Brazil, Venezuela, Columbia, Ecuador, Peru, and Bolivia. Watersheds are not just the water and an associated habitat. A single watershed may include a diversity of habitats: forests, marshes, deserts, grasslands or others. Watershed boundaries are defined by the topographic dividing line from which surface water flows in two different directions.

A watershed analysis is a systematic procedure for characterizing watershed condition, processes, and history to meet specific objectives. A watershed analysis forms the basis for evaluating cumulative watershed effects, defining watershed restoration goals and objectives, implementing restoration strategies, and monitoring the results or effectiveness of all these measures. The analysis employs the perspectives and tools of multiple disciplines including geomorphology, hydrology, geology, ecology, and soil science. It is the framework for understanding and implementing land use activities within a geomorphic context and is a major component of the evolving science of ecosystem analysis. Watershed analysis consists of a sequence of activities designed to identify and interpret processes operating in a specific landscape. The overall goals of watershed analysis are to:

1. Characterize the geomorphic, ecologic, and hydrologic context of a specific watershed and identify beneficial uses.
2. Determine the type, extent, frequency, and intensity of watershed processes including mass transport, fire, peak and low streamflows, surface erosion, and other processes affecting the movement of water, sediment, or organic material through a watershed.
3. Determine the distribution, abundance, life histories, habitat requirements, and limiting factors of fish and other riparian dependent species.
4. Identify parts of the landscape, including hillslopes and channels that are sensitive to specific disturbance processes critical to beneficial uses.
5. Interpret watershed history, including the effects of previous natural disturbance and land use activities.
6. Establish ecologically and geomorphically appropriate boundaries of Riparian Habitat Conservation Areas.
7. Design approaches to evaluate and monitor the reliability of the analysis.
8. Identify restoration objectives, strategies, and priorities.

Watershed analyses usually lie between the scales of Forest and Project Planning, a scale useful when evaluating and making decisions about cumulative watershed effects. The location of the Lake Davis Long Valley Watershed Analysis area is shown in Figure 2.

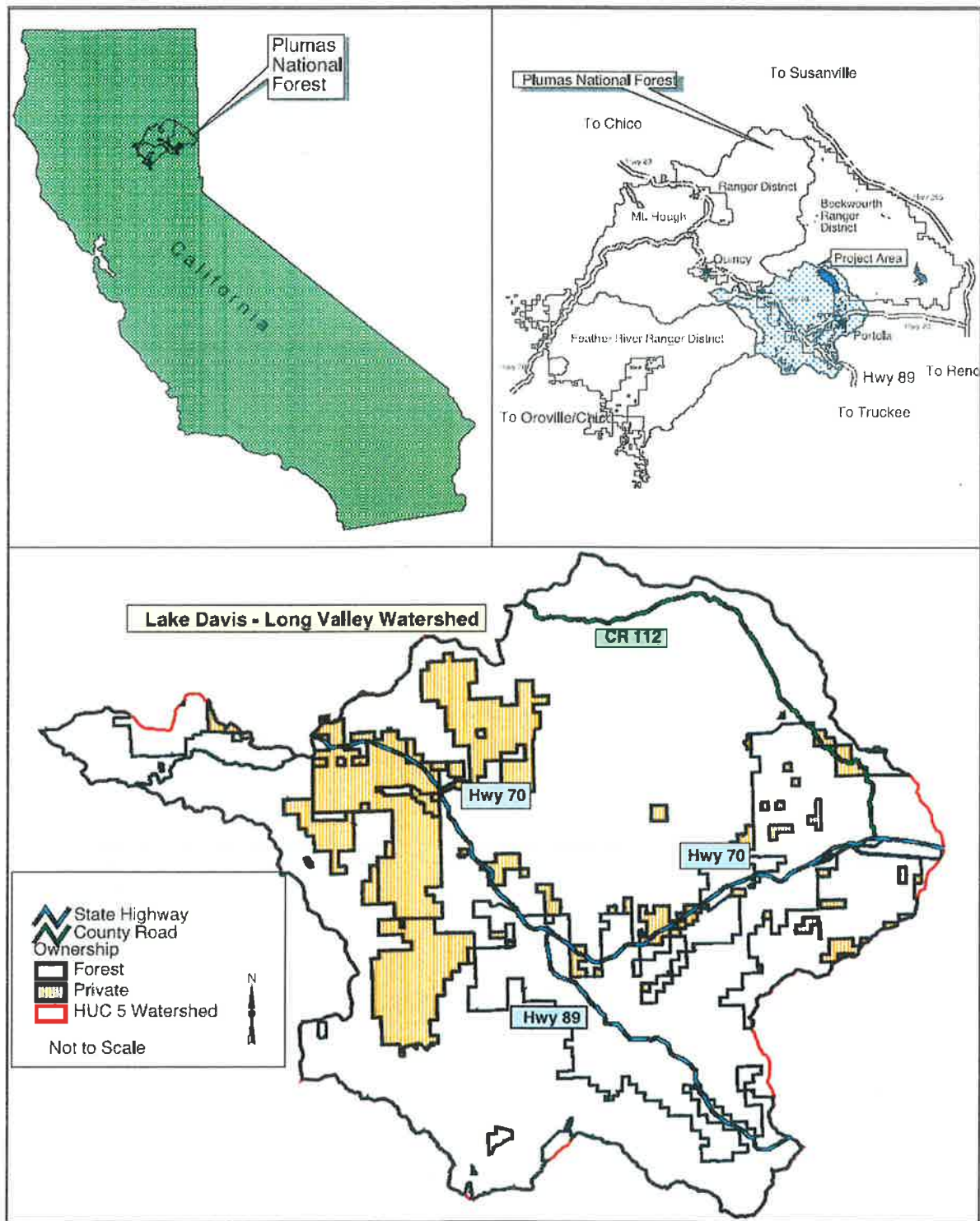


Figure 2. General Vicinity Map for Lake Davis Long Valley Watershed

## General Description

The Lake Davis Long Valley watershed is approximately 200,740 acres in size. Approximately 131,200 acres of this watershed area is managed by Beckwourth Ranger District of the Plumas National Forest. The remainder of the 200,740 acres is held by private landholders or is managed by the State of California. This

watershed is located in the Plumas National Forest, beginning in Township (T) 24N, Range (R) 12E and extending south to T21N, R13E. It extends from T23N, R9E in the west to T24N, R14E in the east. The LDLV watershed drains into the Middle Fork of the Feather River from the town of Portola on the east boundary to the town of Sloat on the west boundary. There are a total of 2,170 miles perennial, intermittent and ephemeral streams in the watershed. All these streams form the drainage network that flows into the Middle Fork of the Feather River, the main watercourse in this watershed. Elevation within the watershed ranges from 4500 feet to 8000 feet. Highway 70 runs roughly parallel to the Middle Fork of the Feather River which has been designated by Congress into the National Wild and Scenic Rivers system. Figure 3 illustrates the stream system and flow regimes for stream channels on Forest System land within LDLV Watershed.

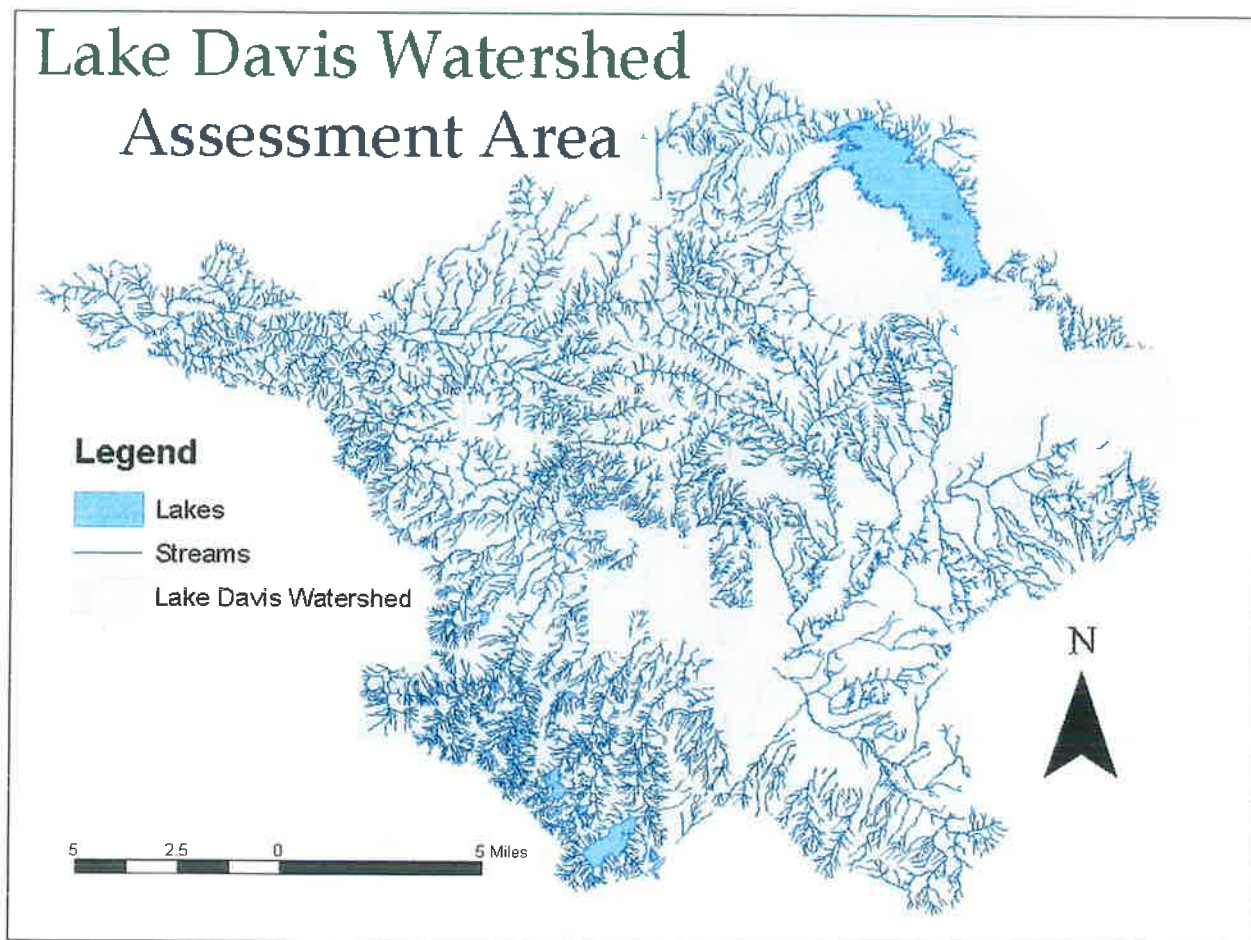


Figure 3. Lake Davis stream system for Forest Service land only. Streams for Private land are not shown.

The smaller watersheds within LDLV watershed are shown in Figure 4 on the following page. Table 1 shows the location, name, and number of acres associated with each of the subwatersheds which are located in the LDLV watershed area. Land within the LDLV watershed is privately owned or State (Outside NF) and Nationally (Forest) managed. These designated areas can be seen in Figure 5 (on the following page).

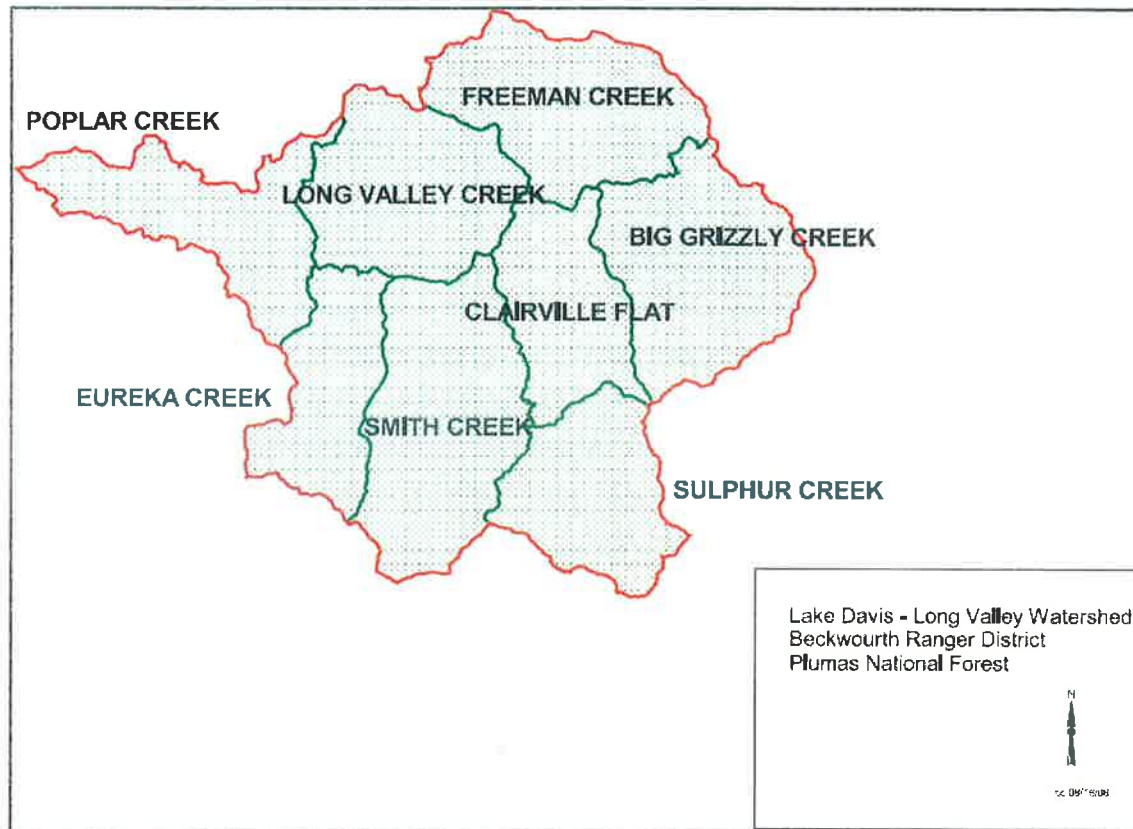


Figure 4. Lake Davis Long Valley Subwatersheds.

Table 1. Lake Davis Long Valley Subwatershed Names and Acres

Subwatershed Name	Acres
Freeman Creek	28,108
Long Valley Creek	26,642
Poplar Creek	22,944
Big Grizzly Creek	30,308
Clairville Creek	19,331
Smith Creek	34,021
Eureka Creek	18,235
Sulphur Creek	21,146
Total Acres	200,740



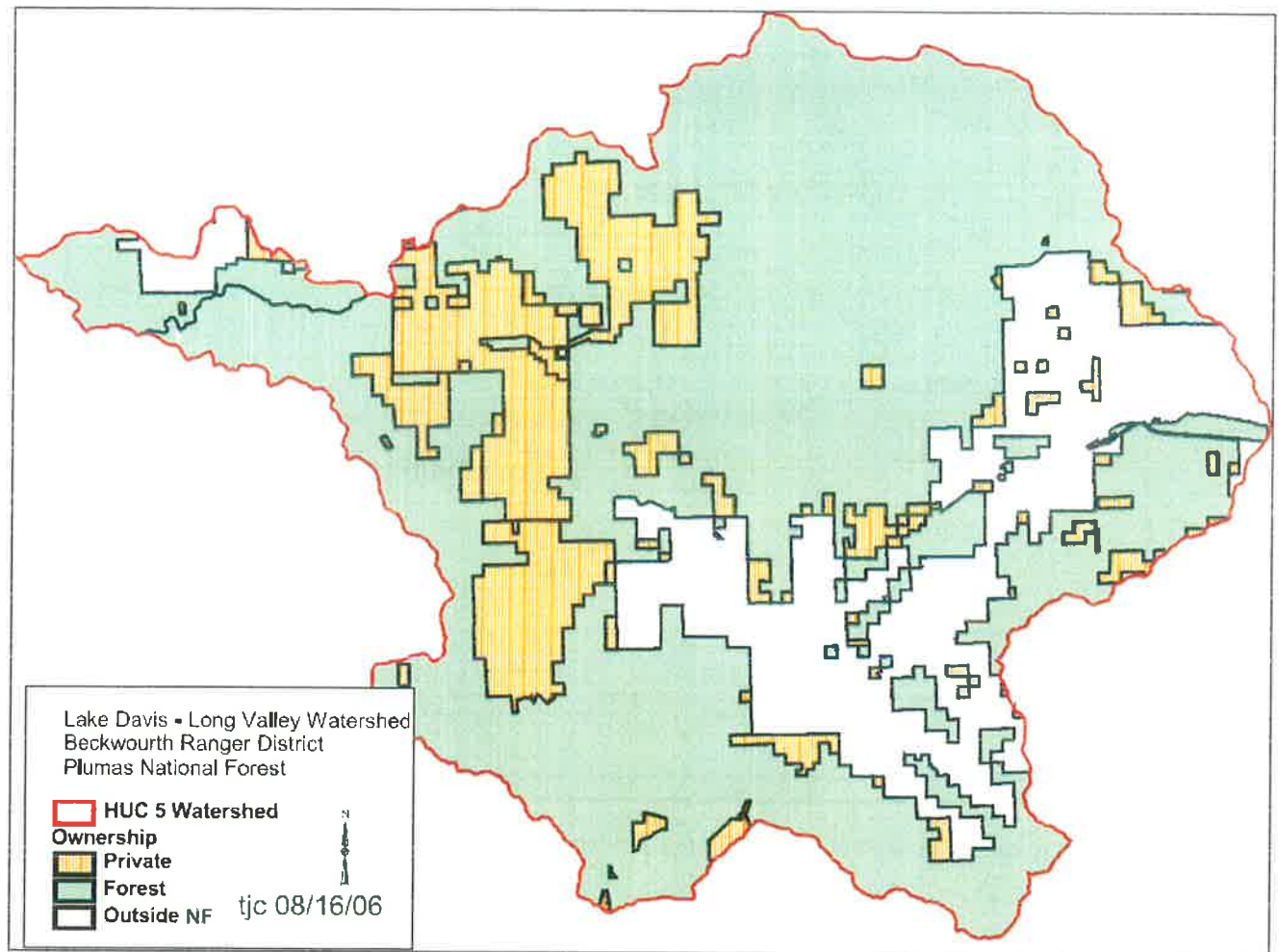


Figure 5. Lake Davis Long Valley watershed land designation.

## Weather and Climate

The climate within Lake Davis Long Valley Watershed is characterized by moderately cold winters and mild summers. The estimated average yearly temperature within Lake Davis Long Valley Watershed is 43 degrees, while the mean monthly temperature is 26 degrees for January and 61 degrees for July. The frost-free growing period is generally 50-75 days in length. Daytime skies are cloudy for an average of 70 percent of the time in December and January and less than 20 percent of the time in July and August.

Average annual precipitation in the LDLV watershed is approximately 22 inches. Annual precipitation is relatively consistent throughout the watershed yielding approximately 12,000 acre feet of runoff. Most surface waters within the northwest portion of the watershed area drain to Lake Davis. Precipitation falls primarily as snow above 6,000 feet, with yearly snowfall total approaching 62 inches at 6900 feet. Snow estimates are a 48 year average from the Grizzly Snow course (see Table 2). Precipitation distribution is characteristic of the Mediterranean climate, with most precipitation occurring between October and May. About half of the annual precipitation falls during December, January and February. Surface runoff depends upon the snowmelt regime, which normally extends into late spring and early summer.



Two snow courses operated by the California Department of Water Resources are located inside the watershed. Snow courses are locations where data is collected to monitor and model the upcoming water year. Dam operations depend on this information. At the Grizzly Ridge snow course (#359), situated within a meadow with scattered timber at an elevation of 6,900 feet, the average annual snowpack contains 21 inches of water and generally reaches its peak in March. This station is in close proximity to the Lower Indian and Red Clover watersheds (see Figure 1). A second snow course is located within the watershed at Abby. This course is situated in open timber on a northeast facing slope.

**Table 2. Snow Course 359 (CA Dept of Water Resources, Beckwourth)**

<b>Year</b>	<b>Average Snow Depth (in)</b>	<b>Average Water Content (in)</b>	<b>Average Density</b>
1965	68.8	29.2	43%
1966	49.0	18.4	37%
1967	81.8	30.8	38%
1968	48.8	17.9	37%
1969	91.2	33.1	36%
1970	56.0	21.1	38%
1971	86.6	35.4	41%
1972	61.0	21.1	35%
1973	63.6	22.6	36%
1974	64.2	26.4	41%
1975	84.8	31.5	37%
1976	20.0	6.3	31%
1977	15.2	4.6	30%
1978	72.0	31.3	43%
1979	52.2	17.1	33%
1980	62.2	22.7	36%
1981	40.0	15.0	38%
1982	56.0	21.4	38%
1983	117.2	47.8	41%
1984	66.8	27.6	41%
1985	42.6	16.2	38%
1986	48.4	20.6	43%
1987	27.6	9.2	33%
1988	23.8	8.0	34%
1989	49.4	18.7	38%
1990	27.6	9.6	35%

<b>Year</b>	<b>Average Snow Depth (in)</b>	<b>Average Water Content (in)</b>	<b>Average Density</b>
1991	30.8	10.5	34%
1992	27.6	8.4	31%
1993	98.0	39.1	40%
1994	36.8	11.8	32%
1995	98.8	40.8	41%
1996	53.0	19.8	37%
1997	59.4	20.4	34%
1998	76.4	28.6	37%
1999	76.4	28.5	37%
2000	62.2	22.1	35%
2001	34.2	11.4	33%
2002	49.2	18.2	37%
2003	50.8	19.9	39%
2004	56.2	19.8	35%
2005	64.6	23.2	36%
2006	60.8	23.3	38%
2007	32.2	9.2	28%
2008	52.4	17.1	33%
2009	43.6	15.3	35%
2010	60.4	20.5	34%
2011	99.0	37.9	38%
2012	23.2	6.5	28%
2013	35.4	11.9	34%
<b>Average</b>	<b>56.3</b>	<b>21.0</b>	<b>36%</b>

During the recorded time span at course 359, there has been a modeled drop of 19% in average yearly snow depth and 27% in average yearly snow water content with a resulting 8% drop in average yearly density of snowpack.

Major circulation patterns encourage N-NW winds during periods of fair weather, while cyclonic storm activity brings predominantly southwesterly flows. Local variation in these basic wind patterns occur resulting from local topographic differences. The topographical change between the Central Valley of California and the Sierra Nevada's causes orographic lifting. This results in more active weather patterns in the mountainous areas.

Summer thunderstorms can contribute substantial quantities of precipitation. However, thunderstorm moisture is highly localized and occurrences are so variable that effects on stream flow and most vegetation are minimal. Thunderstorm effects on vegetation and runoff on the eastside take a more dramatic role with

respect to lightning. Most lightning storms occurring between May and October follow a track associated with the Pacific westerlies. However, from June to September (during much of the fire season), the Pacific westerlies are much weaker and move to the north. This allows lesser, but very significant, storm flow patterns to occasionally bring lightning storms up from the quadrant between east-southeast and south-southwest. Thunderstorms are associated with severe fire weather conditions. Storms from the south or southwest usually include some precipitation, but those steered with a more southeasterly component of flow are often more dry. The drier storms ride northwestward up the Sierra Nevada or move north across Nevada, then westward into California, contrary to the normal Northern California storm track (Snook, 1995).

## **Water Quality, Stream Flow and Beneficial Uses**

### *Channel Morphology*

Stream channels within the watershed area exhibit a range of types. Generally streams flow from moderately steep forested areas through low gradient meadows. Generally there is little to no riparian vegetation component associated with upland ephemeral streams. Springs, seeps, and seasonal wetlands are a part of the drainage network.

Existing and abandoned roads, skid trails, or historic ditches have disturbed or diverted channels throughout the watershed. This has caused some channels to abruptly stop, change direction or lose connectivity with the channel network. This is especially true of ephemeral stream types. As a result these channels are limited in their ability to transport water, wood, or sediment to lower reaches of the drainage network.

### *Water Quality and Channel Condition*

The quality of a water resource depends on the physical, chemical and biological properties within the watershed. Stream environments are dynamic and constantly evolving. Water quality data was collected by the District within the watershed as early as 1971. Chemical, physical and biological data were collected and assessed to determine existing water quality and changes to water quality. Data is not available for all channels within the watershed. Existing water quality data is kept at the Beckwourth Ranger District and includes water quality parameters such as, temperature, turbidity, flow, and macroinvertebrates.

Roads are considered one of the greatest impacts to watershed condition. Grazing is another impact to water quality. Timber harvests, mining and recreation can have significant impacts to water quality. The timing of these events, scale, intensity and duration are the aspects of these activities that determine the severity of the impact. The Cumulative Watershed Effects (CWE) analysis section of this document quantifies impacts from roads, timber harvests, fires and grazing.

### *Middle Fork of the Feather River*

The Middle Fork of the Feather River is the main artery of this watershed. Stream channel stability varies throughout its length. This discussion is limited to the portion of the reach within the LDLV watershed. In the Middle Fork the water quality as it relates to water clarity in late summer is low; a result of suspended sediments and nutrient enriched water originating from agriculture lands in Sierra Valley.

## *Other Named Tributaries*

### *Big Grizzly and tributaries to Lake Davis*

In 2004, during the field verification of streams for the Freeman Defensible Fuel Profile Zone and Group Select project over 50 headcuts and gullies were identified in the tributaries on the westside of Lake Davis.

Stream channel stability within Big Grizzly Creek varies throughout its length. Within select reaches channel stability is fair to good. However, in its lower reaches the stream traverses extensive range lands and channel stability is generally fair with sections of poor channel condition. Here, channel stability has been impacted primarily by grazing throughout the 1900's. Streamflow is low, less than one cubic feet per second. Stream temperatures are very warm with the average maximum daily temperatures approaching 76 degrees in August.

In Old House Creek, tributary to Big Grizzly Creek which empty directly into Lake Davis channel stability is generally fair to good. However, there are areas that exhibit unstable channel characteristics. The east branch of Oldhouse Creek has unstable reaches which have been improved through structural measures and vegetative plantings. These improvements have been moderately successful in improving channel stability in the short term and are expected to be very effective over time.

Freeman Creek is a relatively sensitive stream system with high fishery values. Spawning and rearing of trout within Freeman Creek and stream channel stability within Freeman Creek varies throughout its length. Above Forest Road 24N10 channel stability is generally good to excellent with the exception of approximately 1000 feet of stream which is in the process of rehabilitation. Long ago this section of stream became entrenched in an old roadbed and was deflected from its original channel. This "new" channel has severely eroded with time. The first step has been taken to relocate the flow back into its original channel with the construction of five headcut control structures and three rock flow deflectors.

The lower reach below Forest Road 24N10 flows through extensive range land. The stability of the stream channel is generally fair to good with isolated sections of unstable stream channel. Prior to restoration, the channel was very unstable. A restoration strategy to improve this channel was implemented from 1999 to 2004. Restoration measures included willow planting to provide bank stability and to moderate both summer and winter water temperatures; instream channel structures to check headcut advancement and channel downcutting, and livestock fencing to allow riparian growth and development within the treated reaches of stream channel. These practices have improved the stability of the streambed and banks, and rapid riparian growth should provide a reduction in stream water temperatures. The objective is to rehabilitate the stream to a narrow E type channel within a broadened floodplain, with undercut banks and a healthy riparian cover providing suitable habitat for spawning and rearing trout.

Water quality within Freeman Creek also varies with the season. Turbidity, a measure of the "cloudiness" of water generally caused by suspended sediment, is expected to be high during extreme thundershower events and rain on snow events, as is characteristic of most streams within the east side of the Plumas. Spring runoff from snowmelt produces water of good quality, generally low in turbidity (relatively clear), well oxygenated and cool. During the summer, streamflow is low, less than one cubic feet per second.

The continual recovery of Freeman, Cow, Old House, and Big Grizzly Creeks are excellent examples of unstable riparian/stream systems that are recovering following stream channel improvement work.



### *Humbug and Willow Creeks*

East Humbug Creek and its tributaries, which drain the east slopes of Smith Peak, are generally in fair to good condition. Occasionally stream channel condition is poor where the yarding of logs with "steam donkey" engines in the early 1900's created skid trails which ran down or across stream channels. At some locations these skid trails have intercepted streamflow within the channels diverting the water away from the stream. At some point along the skid trail this water is released onto the hillside where it migrates back to the channel resulting in severe gully erosion and subsequent sedimentation to the streamcourse.

West Humbug Creek and Willow Creek are sensitive stream channels which have been heavily impacted by past land management activity. Channel conditions within West Humbug Creek and the East and West Branch of Willow Creek are predominately poor with some reaches of good channel stability.

Approximately three miles of Willow Creek which is located on both private and public lands has been actively eroding over the past fifty years. Roads are frequently located adjacent to stream channels which generate high quantities of sediment to and encroach on the riparian habitat along perennial reaches of these streams. Within the West Humbug drainage donkey skidding and abandoned logging roads are common and frequently divert stream flows from poorly defined channels leading to gully erosion and sedimentation downstream. Approximately 25 percent of this area has been improved through structural and vegetative treatments utilizing Knutson Vandenberg (KV) funding.

The main stem of Willow Creek is in good to excellent condition below the confluence of the Forks. However, as the stream approaches an old Mill Site approximately two miles downstream, the creek begins to become more entrenched, abandoning its floodplain and network of overflow channels. For about two miles on both public and private land, the stream channel is cutting deeper in its channel and laterally extending into the stream banks. Channel erosion in this portion of stream is severe during intense storm events during the winter. In the late 1980's stream channel restoration work improved the stability along select reaches of these streams.

### *Long Valley and tributaries*

Little Long Valley and Long Valley Creek flow in a southwesterly direction. These streams are well dissected. Stream channel gradients within these streams are moderately steep, but in Long Valley Creek these gradients lessen in the upper reach as the stream flows through Happy Valley; a large alluvial meadowland situated near the head of the watershed. Both streams support riparian vegetation along most of the stream channel which provides channel and bank stability and moderates stream temperature.

### *Jackson Creek and tributaries*

The Layman Fire burned intensely through Consignee Creek, Cedar Creek and Jackson Creek. Consignee Creek is a deeply incised drainage. The lower reaches of Consignee Creek are generally unstable, with occasional down cutting and active lateral cutting along over steepened banks and slopes. Given the loss of ground cover and vegetative canopy, erosion and sedimentation rates after the fire were estimated to be approximately 30 times above background levels. Through emergency burned area rehabilitation funding, 550 acres of the most sensitive lands within the burned land were treated to reduce erosion and channel scour. Recover of these channels has been slow.

Reconstruction of Jackson Creek between Forest Service road 23N11 and County Highway 70 occurred 2000. the objective was to redirect flow out of a gully, improve fish and riparian habitat, and reduce sediment transport.

#### *Smith Creek and tributaries*

Smith Creek flows through Smith Meadow, thence the community of Mohawk to the Middle Fork of the Feather River. The creek formerly flowed through Mohawk on the west side of its' natural channel, but diverted to the east side where it now flows. Much of the area has been glaciated, and may have been a portion of the prehistoric Mohawk Lake bed.

In the Middle Fork of Smith Creek only the extreme upper reaches of three tributary channels are on National Forest System (NFS) land. The lower reaches of these channels are on private land, and have been logged, using tractor yarding. The NFS channels are stable. The west tributary channel is the most stable, at some points the stream flows on bedrock.

The east tributary channel is more sensitive than the west channel. The channel system drains the toe of a glacial moraine, with many small parallel channels. The moraine is prone to erosion. There is evidence of water movement on the floodplain, including scour pools, however the channel has good riparian cover.

#### *Stream Flow*

Historical records for streams within the Feather River Basin indicate relatively frequent high flows during winter months with substantial flows every five to ten years, generally during rain-on-snow events. The spring snowmelt season brings sustained high flows to the streams well into late spring and transitions into very low flows during summer months. Catastrophic events have occurred most recently in Feather River Watershed in 1955, 1964, 1986, 1997 and 2006.

Discharge data was collected on Cow, Big Grizzly and Freeman Creeks in 2002, the cubic feet per second (cfs) was 2.2, 2.5 and 2.7 respectively.

#### *Water Temperature*

Water temperature increase is primarily an impact to cold-water fisheries and may occur both at the site of disturbance, and downstream due to the additive effects of stream canopy removal through harvest operations, livestock grazing, wildfire or debris flows. Physical alterations of stream channels within meadows through over grazing have led to wide shallow channels that intercept greater influxes of incident radiation than the narrow deep channels, which were once common throughout the meadowlands.

Temperature data for some creeks was collected as early as 1971. The maximum temperature, average maximum and minimum temperatures for the period July through September by year is displayed in Table 3.

Cold water fish like trout become stressed when stream temperatures rise above 72 degrees F. The data would suggest cold water fisheries are impaired.

**Table 3. Maximum temperature, average maximum and minimum from July through September.**

Creek Name	Year	Dates	Max Temp (F)	Date	Average Max Temp (F)	Average Min Temp (F)
Middle Fork (Portola)	1971	7/11-9/10	82.94	7/31	74.35	64.54
Middle Fork (Portola)	1992	7/11-9/25	76.6	7/17	68.51	62.08
Middle Fork (Portola)	2001	6/12-10/9	81.06	9/19	72.74	64.91
Middle Fork (Portola)	2004	7/7-10/11	77.73	7/25	64.21	61.4
Middle Fork (Sloat)	1992	7/11-9/25	83.3	8/12	74.71	54.54
Middle Fork (Sloat)	2001	6/13-9/24	81.86	7/5	74.82	54.32
Grizzly	1987	7/11-9/30	86.9	7/14	72.19	44.5
Grizzly	1988	6/6-9/27	83.3	6/23	74.22	54.32
Grizzly	2002	7/3-9/25	78.08	7/13	64.8	61.68
Grizzly	2003	6/23-9/24	81.33	7/22	70.83	60.15
Jackson	1990	5/20-9/20	70.7	8/6	58.16	44.29
Jackson(lower)	2004	7/2-10/26	103.23	7/6	64.6	54.95
Jackson (middle)	2004	7/2-10/26	103.54	7/6	66.75	54.09
Jackson (upper)	2004	7/2-10/26	98.63	7/6	58.07	48.51
Willow	1991	6/20-9/30	81.1	7/28	64.36	51.31
Willow	1998	6/26-9/15	70.5	7/20	66.14	50.55
Willow	1999	7/13-9/22	77	7/31	71.77	50.86

*Lake Davis Reservoir*

As part of the State Water Project system, Big Grizzly Creek was dammed during the 1960s to create Lake Davis for recreational activities. At times, the city of Portola has utilized Lake Davis reservoir for drinking water. Management of Lake Davis is carried out through partnerships between the State of California's Department of Water Resources, Fish and Game, Parks and Recreation, Plumas County Sheriff's Office, and the USDA Plumas National Forest.

From GIS data it was estimated that approximately 27,560 acres of land drain directly into Lake Davis Reservoir. The surface area of the lake covers approximately 4,071 acres. The storage capacity is 84,371 Acre Feet of water. An Acre Foot (AF) is 1 acre of land that is covered 12 inches of water. The daily operation of Lake Davis Reservoir is managed by the California Department of Water Resources (DWR). There are several gauging stations located near or within the Lake Davis watershed area. The California Data Exchange Center houses the information that is available for tracking the volume of water released from Lake Davis Reservoir and the changes in reservoir levels due to precipitation events.

The average volume of water in Lake Davis Reservoir is 47,500 AF of water. The amount of storage increases during the winter months and peaks in April, then decreases over the summer months as water is released for irrigation purposes. Water is also released prior to April in order to maintain sufficient capacity for large precipitation events and prevent flooding from occurring. There have been spills over at the dam. The impact of dams to rivers extends beyond the changes to natural flow regimes.

Water flows out of Lake Davis Reservoir through Big Grizzly Creek for approximately 6 miles through private lands to the confluence with the Middle Fork of the Feather River. There are instream flow requirements on Big Grizzly Creek so water flow is maintained in the perennial channel. The water rights along the 6 mile section of Big Grizzly Creek below the dam are managed by DWR so water is delivered according to the schedule of requested water.

### *Beneficial Uses*

Existing beneficial uses of surface waters within the LDLV landscape assessment area are found in the Central Valley Region Water Quality Control Plan (California Regional Water Quality Control Board 2004). This plan identifies beneficial uses for specific water bodies in the Central Valley Region, and states that those uses generally apply to the tributary systems of those water bodies. Big Grizzly Creek flows from Lake Davis, part of the State Water Project, into the Middle Fork of the Feather a Federally designated Wild and Scenic River. Approximately 300 acres of land situated in the western portion of the watershed drain into Little Grizzly Creek and thence to Indian Creek and the East Branch North Fork of the Feather River. Some of the documented beneficial uses as listed in the in the Plan include:

### *Municipal and domestic supply*

Municipal and domestic supply – Uses of water for community, or individual water supply systems including, but not limited to, drinking water supply: Water stored in the Lake Davis reservoir has been used for consumption by the city of Portola. Long Valley and Bonta Creek are two of the creeks where water is used for domestic use and/or consumption. A list of domestic Water Rights holders along with the permitted use amounts are on file at the Beckwourth Ranger District.

### *Agricultural Supply*

Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation (including leaching of salts), stock watering, or support of vegetation for range grazing. The Beckwourth District keeps a list of the permitted holders of Water Rights for irrigation.

### *Ground Water Recharge*

Uses of ground water include natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.

### *Recreation*

Water contact recreation – Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, white water activities, boating, and fishing.

Non-contact water recreation – Uses of water for recreational activities near water, but where there is generally no body contact with water, nor any likelihood of ingestion of water. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.

### *Freshwater habitat*

Cold freshwater habitat – Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates. The watershed has four cold, freshwater habitats, Cow, Freeman, Dan Blough and Big Grizzly.



### *Spawning, reproduction, and/or early development*

Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.

### *Wildlife Habitat*

Wildlife Habitat – Uses of water that support terrestrial or wetland ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats or wetlands, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

## **Geology**

### *Geomorphology*

The following provides an understanding of the regional setting of this watershed assessment. The geomorphology, geology, soils and hydrology of the area are provided within the regional context. The Watershed area lies in the Northern Sierra Nevada Geomorphic Province of California, Figure 6. These geomorphic boundaries encompass the topographical, geological, climate and vegetation components of the landscape.

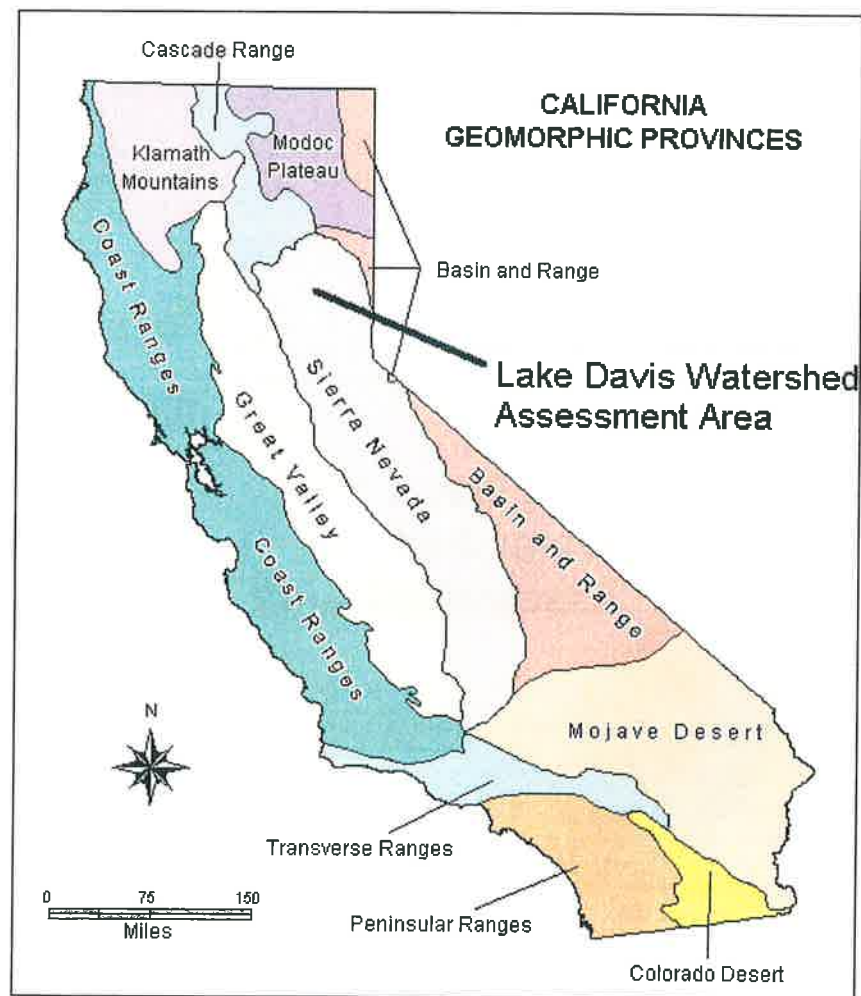


Figure 6. California Geomorphic Provinces. (Source: <http://www.consrv.ca.gov/cgs/geotour/>)

The dominant geomorphic processes in the area covered by this watershed assessment are driven by active tectonics and climatic events. Fluvial erosion and deposition, faulting and mass movement are the dominant land forming processes acting upon this landscape. The Plumas trough is the northwest trending, active tectonic zone that separates the block-faulted portion of the Sierra Nevada's on the northeast from the archetypal Sierra Nevada's. Drainage patterns are influenced by the dominant land forming processes. Active tectonics may shift the direction of stream flows on the surface and subsurface. Fluvial mechanics drive the watershed dynamics which include peak streamflow, runoff rates, baseflow, and rates and volumes of material deposited in the watershed. In turn, the physical characteristics of watershed dynamics influenced by regional setting and dominant geomorphic processes influence the habitat characteristics of the landscape setting.

### Geology

The Sierra Nevada batholith, depicted by the color red in Figure 7, forms the most obvious geologic feature of the mountain range. The Sierra Nevada's rise sharply on the east side with a more gradual climb on the west and their geologic architecture is a block structure with a tilt to the west. The area discussed in this report, shown in the inset below, contains granitic rocks of the Sierra Nevada batholith, crosscut by faults and overlain by Cenozoic volcanic material, shown in pink. The blue is Paleozoic sedimentary material that is, in some areas such as the Shoo Fly Formation, highly metamorphosed.

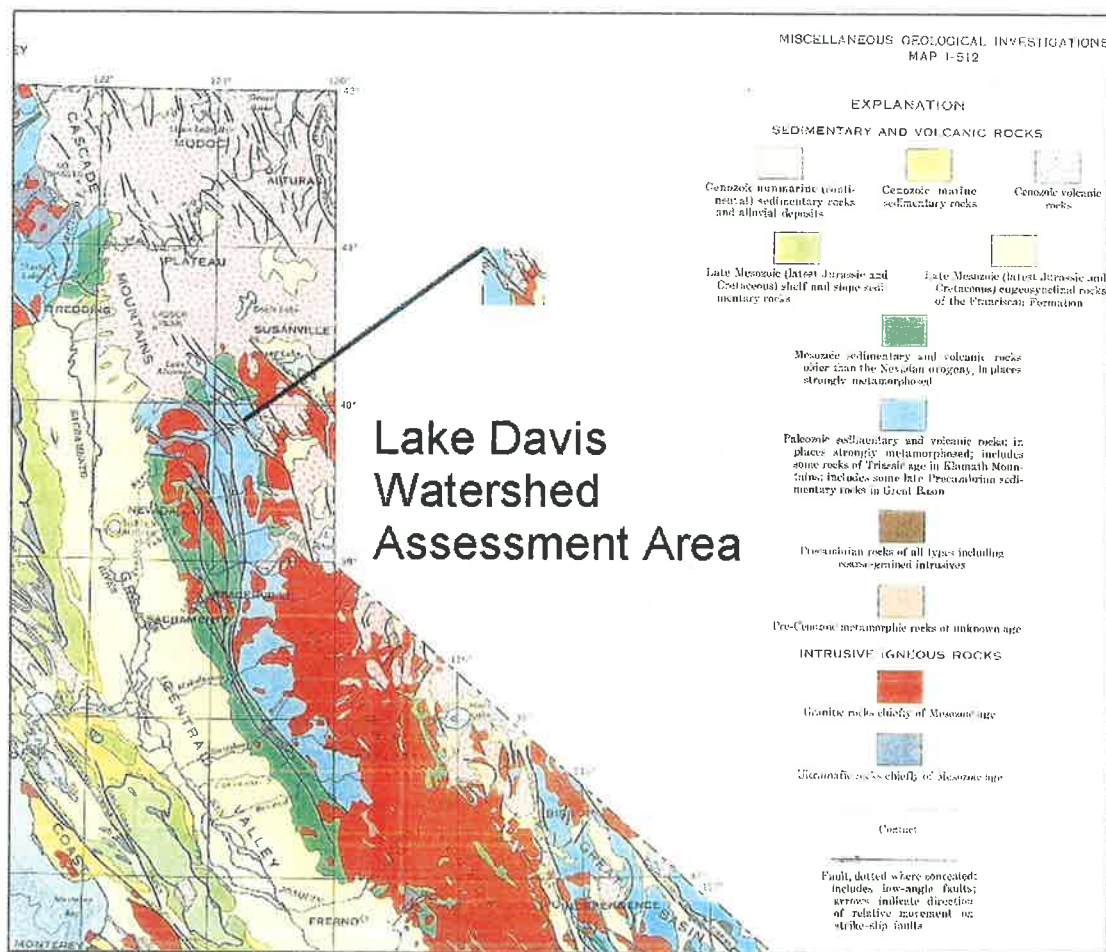


Figure 7. California Geologic Survey Map 1-512. (Source: <http://geology.about.com/library/bl/maps/blcaliforniamap.htm>)

The Sierra Nevada's began forming approximately 150 million years ago when an island arc slammed up against the continent of North America and a subduction zone formed at the plate boundary. The tectonic activity resulted in mountain building processes, referred to as the Nevadan orogeny (Schweikert 1984), that created the Sierra Nevada's and metamorphic rock. The tectonic activity of the Sierras became more active approximately 25 million years ago as the block tilted west and continued to uplift. Understanding the depositional environment and movement of plate boundaries helps in understanding the underlying components of the landscape.

The depositional environment of the Paleozoic marine and Paleozoic metavolcanic formations is described as deep marine consisting of a Paleozoic island arc that consisted of overlapping volcanoes or sheets of volcanic pyroclastic rock (Durrell, 1977). There is no discontinuity between the geologic formations except the Sierra Buttes and the Shoo Fly Formation. The rest of the geology in this area reveals a sequential time line of depositional environment and tectonic activity.

The faults running through the study area are associated with the northwest trending Plumas trough and the Mohawk Valley Fault Zone. The major fault running through the area is the Mohawk Valley Fault, which divides the valley's alluvial sediment deposited in the Quaternary, shown in yellow, from the Mesozoic granite, shown in pink, in the southern portion of Figure 8.

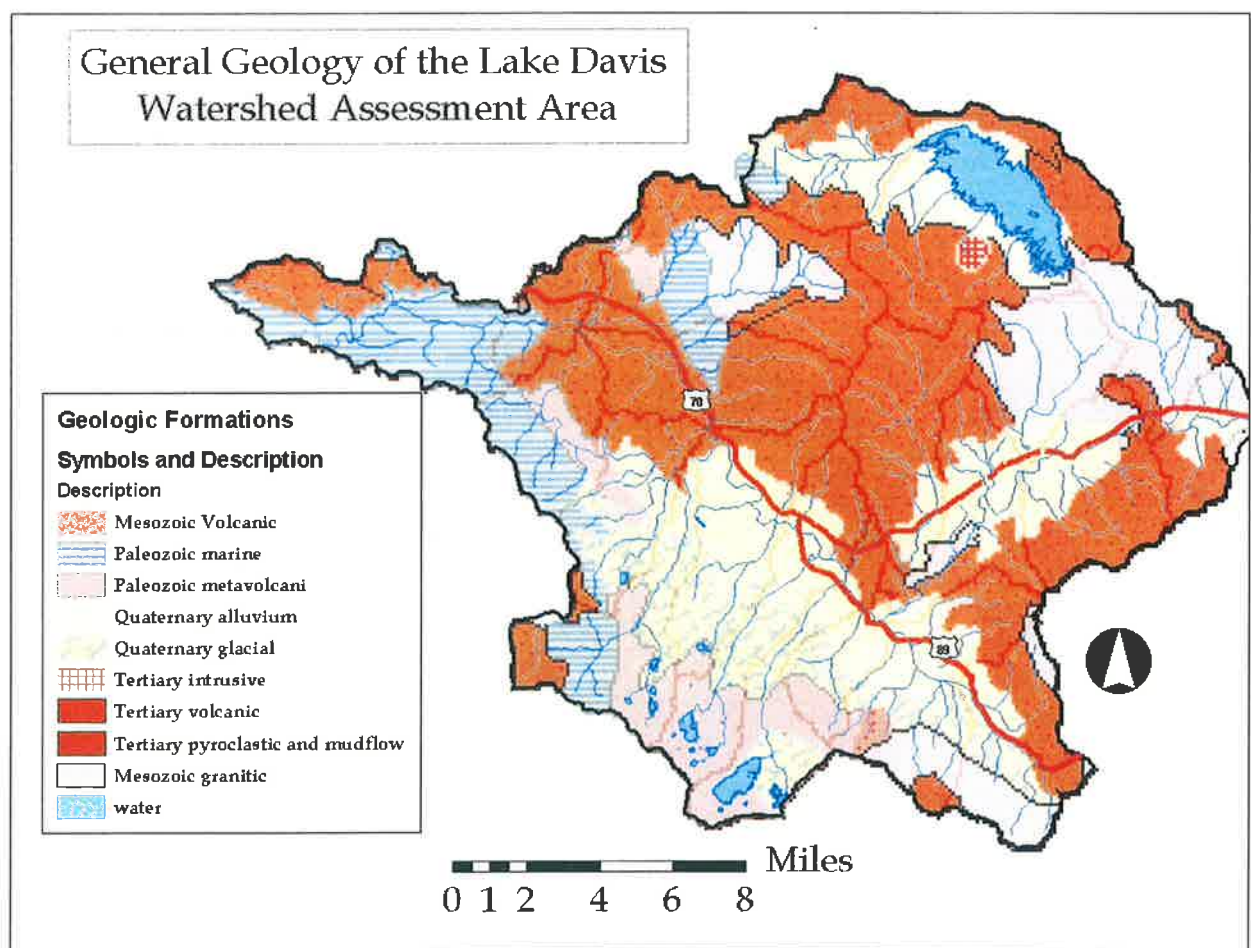


Figure 8. Generalized Geologic Map of Lake Davis Long Valley Watershed Assessment Area.



The southwestern portion of the watershed near the Lakes Basin is composed of Paleozoic metavolcanic rocks. The area was glaciated and some of the valleys in the Lakes Basin area reflect the U-shaped topography that is suggestive of erosional events during the last glaciation period. Oligocene, Miocene and Pliocene volcanics, shown in shades of orange in the preceding map, are dominant throughout the study area to the north of the Middle Fork of the Feather River and to the east

(<http://geology.about.com/library>). The light yellow (Quaternary alluvium or glacial material) shows the areas where deposition has occurred following the last ice age (Pliocene 1.8 Ma- 10,000 years before present). Understanding the depositional environment and the regional geologic setting helps to understand the LDLV watershed.

### Topography

The topography of the regional area is defined by the geologic setting and land forming processes. There were two major uplift events that occurred concurrently with erosional processes that are the dominant landform shaping events in the Sierras (Wakabayashi 2001). The active faulting along the eastward escarpment, stream incision rates and westward block tilting are the dominant land forming processes that shape the topographical character of the Sierras. The incision rate of the Middle Fork of the Feather River, 0.19mm per year, has occurred over the past 5 Ma (Wakabayashi 2001). Erosional processes are affected by the regional geologic structure which includes folds, faults, joints, fractures and active tectonics.

### Soils

Dominant soil composition is shown in Figure 9. Soil formation depends on the regional setting of the landscape as well as the microhabitat and local variations in environmental conditions.

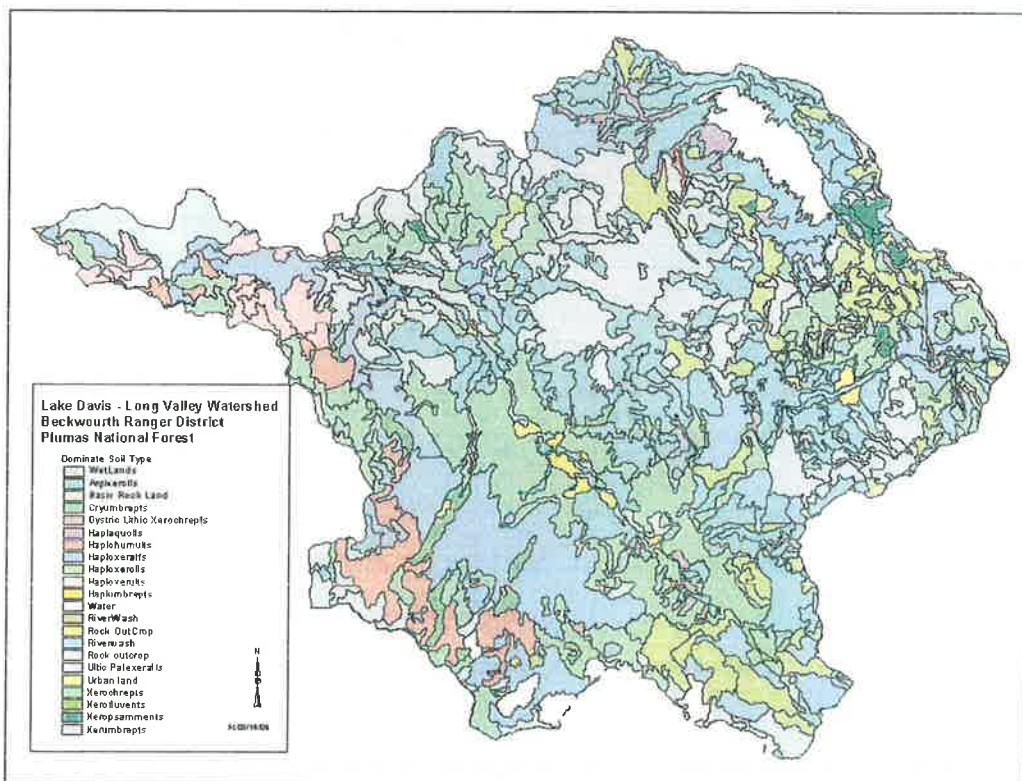


Figure 9. Dominant Soil Composition in the Lake Davis Long Valley Watershed Assessment Area.



The dominant soil compositions are Xerochrepts, Argixerolls, Haploxerolls, Dystric Lithic Xerochrepts, Xerumbrepts and Haploxerolls. The dominant soil moisture regime is xeric (Gr. *xeros*, dry) and typical of the Mediterranean climate. The dominant soil temperature regime is mesic, having a mean annual soil temperature between 8° and 15° Celsius (C) and a difference between mean summer and mean winter temperatures greater than 6° C (NRCS, 2003).

Soils vary over relatively short distances because geology, time, topography, climate and biological activity are all contributing factors to the soil forming processes. For example, in areas where Argixerolls are most dominant there is greater water holding capacity because these soils have a higher percentage of phyllosilicate (shrink/swell) clays. Seasonal runoff patterns may be slowed due to the ability of these soils to maintain soil moisture for longer periods of time.

The resiliency of the landscape to disturbance is partially dependent upon the dominant composition of the soil. The inherent characteristics of the soil determine the potential for erosion and compaction. Natural disturbances in the watershed such as large precipitation events may cause mass wasting and debris flows while disturbances resulting from management activities such as timber harvests and roads may contribute to compaction. In turn, loss of ground cover contributes to increased runoff and erosion potential.

Soils developed from the granitics are shallow to moderately deep, poorly developed, loosely consolidated, excessively drained, and highly erosive. Ground cover retention is an important factor on these soil types. Given their large component of coarse sands, there is a low tendency toward compaction. In contrast soils derived from volcanic parent materials, including pyroclastic andesite and basalt, generally are more developed and less erosive but have a tendency towards mass instability, compaction, rilling, and road maintenance problems. Inherent soil erodibility is displayed in Figure 10 and is generally high to very high on 69,300 acres of the watershed.

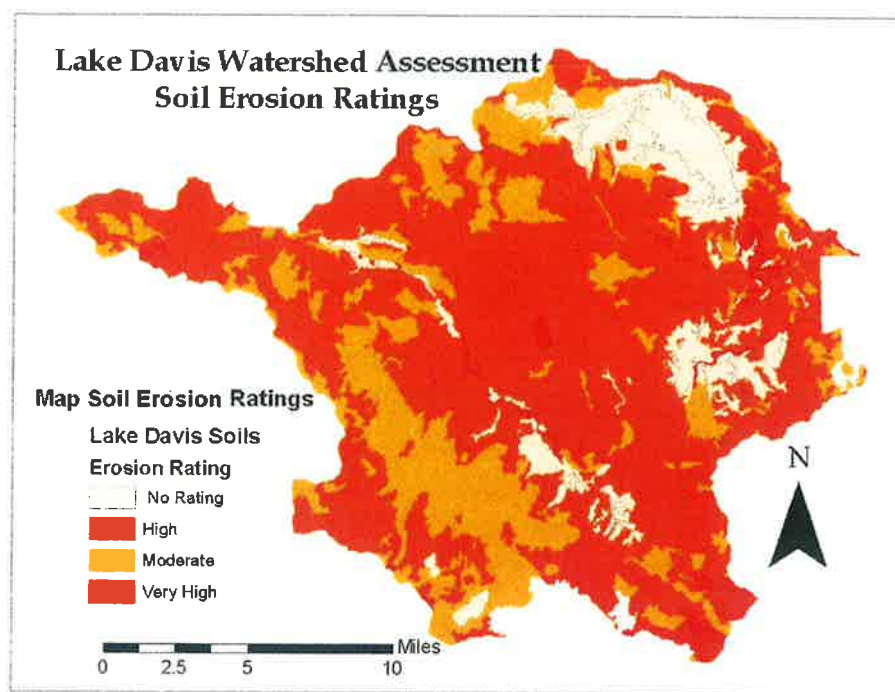


Figure 10. Soil Erosion ratings for Lake Davis Long Valley Watershed.

## Roads

Most of the roads within LDLV watershed were built to facilitate timber harvesting, but today many of these roads constitute an important component of the nation's rural road system. Although they provide access for resource protection, timber harvesting, mining, grazing, and recreational activities they have a substantial environmental impact on water quality, flora (introduction of exotic species), and wildlife. Roads have been identified as the major impact to watersheds. These impacts fall into several categories including introduction of sediment to streams, redirection and concentration of interflow, and increased surface flow production. Exposed mineral soils and oversteepened roadcuts provide unstable and nutrient-poor substrate that inhibit revegetation when these roads are finally abandoned. They also promote the introduction of exotic species and pathogens carried by vehicles along roadways. Vehicle traffic collapses soil pores on unsurfaced roads, thus compacting soils and altering their erosivity. Traffic forms dust on dry soil roads, throwing particles into suspension if runoff is present.

In the LDLV watershed the existing road system poses erosion and water quality problems due to poor location and alignment. Many level II roads (open for passage by high clearance vehicles) are located within streamside management zones. They are not bladed or brushed on a regular basis and culvert inspections are performed only every 4 years. In many instances, roads are within 20 to 30 feet of a stream channel or cross a channel frequently. Many of these roads were built when the consequences of building roads near stream channels were not known.

### *Current Road Condition*

A roads inventory was conducted in this watershed assessment area that determined that the greatest contributor to sedimentation is forest roads. Second to that are stream channels and sheet, rill and gully erosion account for the remaining sedimentation. Sediment movement occurs primarily during peak storm events. However, snowmelt flow continues to erode unstable stream banks into the spring and livestock cause water conditions to be turbid throughout much of the summer.

Roads are a recurring source of sedimentation as surface fines are eroded into streams. Currently there are 540 miles of roads in this watershed assessment area which equates to a road density of 1.16 miles per mi<sup>2</sup>. (However, recent restorations have reduced the number of miles of roads by 20 miles.) Roads that are adjacent to streams and in poor condition have a greater impact to water quality. Past management practices allowed skid trails and landings to be placed in or near riparian areas. When these old skid trails and landings are not removed by obliterating the road, reshaping, and recontouring the landscape, there may be a negative impact to the water quality. There have been recent restoration projects in the watershed assessment area to remove some roads and reshape and recontour the landscape to natural topography. At Freeman Creek 1.5 miles of road were relocated to restore the connective activity of a meadow and five culverts were installed at Blakeless to spread water flow out across a meadow rather than allow the water to carve out a gully. Two other roads accessing Lake Davis were relocated out of a meadow and onto a slope. In order to negate some of the negative impact caused by the compaction of soil surfaces on roads, subsoiling is used. Subsoiling decreases the level of compaction on forest roads and trails.

The Plumas National Forest has recently (2011) implemented its travel management plan to the public via the Motor Vehicle Use Map (MVUM). This map shows the National Forest System roads, National Forest System trails, and the areas on National Forest System lands in the Plumas National Forest that are



designated for motor vehicle use pursuant to 36 Code of Federal Regulations (CFR) 212.51. Figure 11 shows these routes within the Project Area. There are approximately 646 miles of approved routes giving a density of about 0.0057 miles of route per acre.

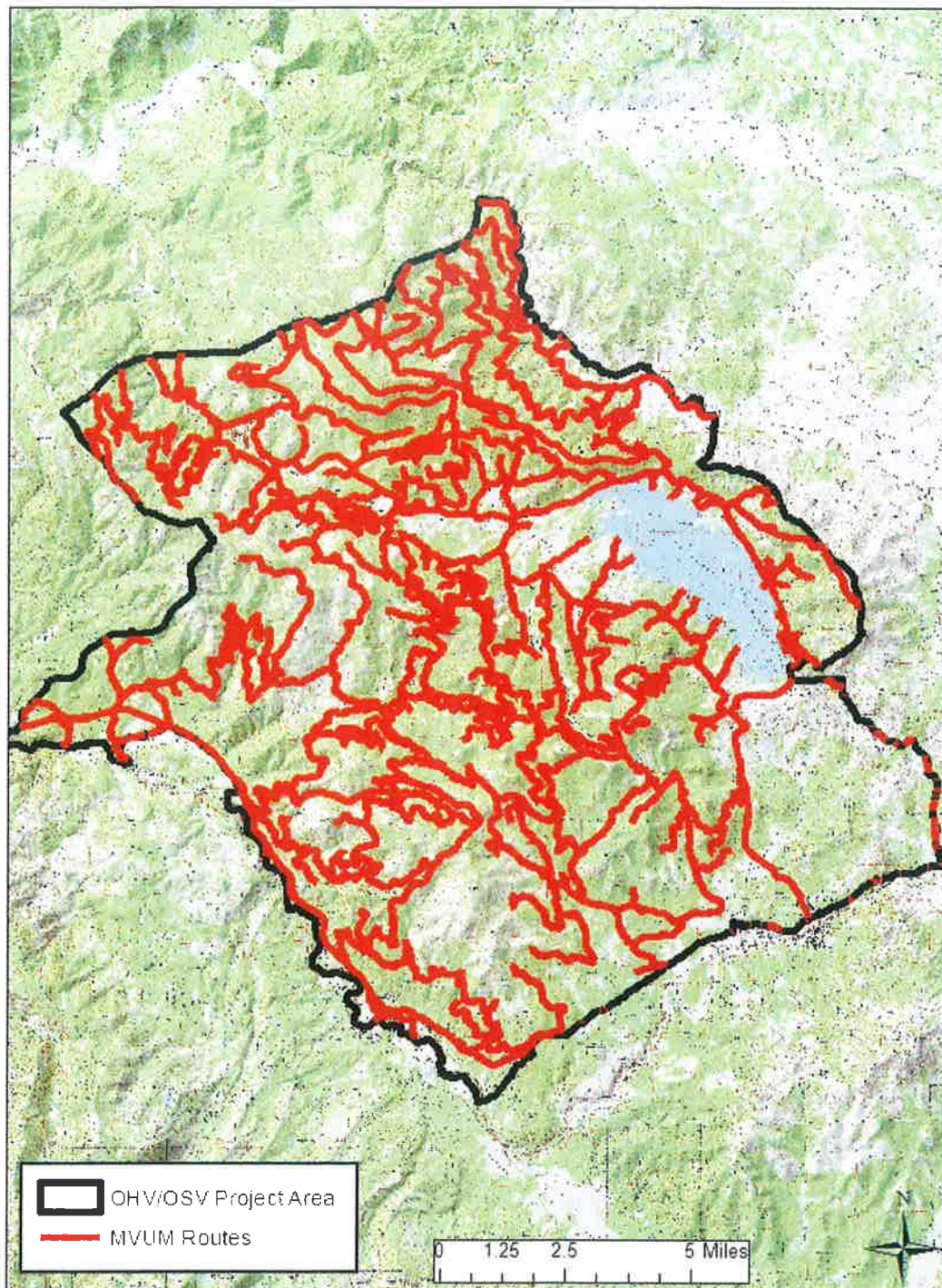


Figure 11. Motor Vehicle Use Map routes within the OHV/OSV Project Area.

## Cumulative Watershed Effects Analysis

### *Cumulative Watershed Effects (CWE)*

There are numerous methods for assessing the effects of land use activities on the landscape. A discussion and comparison of different methodologies can be found in documents such as, *A Scientific Basis for the Prediction of Cumulative Watershed Effects*, *Cumulative Watershed effects: Applicability of Available Methodologies to the Sierra Nevada*, and *Research and Cumulative Watershed Effects*. (Dunn et al. 2001, Berg et al. 1996, Reid 1998, USDA Forest Service 1988a). For the purpose of this CWE, the effects of past, present, and reasonably foreseeable future impacts were assessed using the Region Five Cumulative Off-site Watershed Effects Analysis (USDA Forest Service 1988a). Under this approach, the impacts of land management activities were evaluated on the basis of equivalent roaded acres.

“Equivalent roaded acres” (ERA) is a conceptual unit of measure used to assess ground-disturbing activities. One acre of road surface equals one ERA. Numeric coefficients are used to convert acres of management activities such as timber harvest, underburning and grazing to ERAs. (for example, 1 acre of underburning equals 0.05 ERA). In a given watershed, disturbances are added together to determine a cumulative ERA for that watershed. This value is often expressed as a percentage of the TOC. The TOC is an indicator used to assess the risk of cumulative watershed effects. The TOC is generally expressed as a percentage of watershed area. When the total ERA in a watershed exceeds the TOC, susceptibility for significant adverse cumulative effects are high. The cumulative ERA in a watershed is often expressed as a percent of the TOC. For example, in a 1,000-acre watershed where the TOC is 12 percent of the watershed area, 100 percent of the TOC represents a condition where the amount of disturbance is similar to 120 acres of road surface, 600 acres of mechanical harvest or 343 acres of group selects. Baseline conditions are displayed in Table 10. Colors are used to display the current watershed condition rating; blue=very low, green=low, yellow=moderate, orange=high, and red=very high.

The TOC serves as a warning that cumulative watershed impacts may exist within a given watershed, which may adversely impact peak flows, water quality, and/or channel stability. A value of 100% TOC indicates that the watershed is at its threshold. Values less than 100% indicate that the watershed is below its threshold, while values greater than 100% indicate that the watershed has exceeded its threshold. The Region Five Soil and Water Conservation Handbook (USDA Forest Service 1988a) states, the TOC does not represent the exact point at which cumulative watershed effects will occur. Rather, it serves as a “yellow flag” indicator of increasing susceptibility for significant adverse cumulative effects occurring within a watershed. Susceptibility of disturbing activities increase as a watershed approaches or is impacted beyond the TOC. If the watershed is approaching or above the TOC, a more thorough investigation of the activities planned within the watershed is necessary.

Existing ERA values for the analysis subwatersheds currently range from 2 to 131% of the TOC. The percent of TOC varies across subwatersheds because past land management practices and natural disturbance events such as wildfire differ in type and intensity.



Table 10. Existing Condition Cumulative Effects.

Davis TOTAL ERAs BY PERCENT by Watershed								
Baseline/Existing Condition								
Watershed name	Total acres	%ERA (100%TOC)	%ERA (12% TOC)	Watershed name	Total acres	%ERA (100% TOC)	%ERA (12%TOC)	
Bury	1994	53	6	Lower Long Valley	438	58	7	
Bar	1356	27	5	Lower Smith	947	37	4	
Bear Willow	880	34	6	Lower Willow	1444	54	6	
Bearing	752	125	15	Mable	1846	56	7	
Bell Bar	901	35	4	Mary Springs	802	30	4	
Bittern	1252	20	2	Marsh	491	17	2	
Big Grizzly2	1660	95	11	McDemott Ravine	1053	31	4	
Bunta	1867	14	2	McNair	672	44	5	
Bonner	687	101	12	Middle Fork	609	30	4	
Boulder	1276	30	4	Middle Fork In3	2763	27	3	
Bray	1014	48	6	Middle Fork In	7434	30	2	
But Run	1550	97	12	Middle Fork In2	6046	46	2	
Calpasture	1992	23	3	Middle Smith	811	11	1	
Camp	682	2	1	Middle Willow	547	32	4	
Caman Saddle	3006	48	5	Miller	1019	8	1	
Cedar	928	62	7	Missouri	765	112	10	
Charles	3560	34	4	Mihawk	2044	14	2	
Chris	877	20	2	NE Purlola	953	17	2	
Claim	1299	8	1	North Squirrel	1414	43	2	
Cuswell	1228	28	3	Old Huse	2215	73	9	
Consignment	1394	22	3	Orange	1024	53	6	
Cow	1749	30	4	Pear	3236	74	9	
Crocker Mountain	743	32	4	Perman	1224	25	3	
Dan Blough	958	25	3	Petria Middle	1497	46	5	
Darwin Creek	970	34	4	Plot	761	30	4	
Dave	1269	9	1	Poplar Camp	4185	24	3	
Davis	1844	33	4	Purlola	1578	79	9	
Deer	1230	3	1	Precipitous	899	58	7	
Deleker	935	72	9	Rattlesnake	1032	19	2	
Dendritic	1321	35	4	Ridge	886	32	4	
Denton	635	25	3	Riz	467	39	5	
East Hnbug	2153	29	3	Roky Point	651	51	6	
East Lee Summit	1136	32	4	Russ	2127	58	7	
East Smith	1105	3	1	Round Hill	440	9	1	
Eureka	1359	23	3	Snail	284	83	10	
Feather	934	81	10	Smaller	103	19	2	
Fells	996	37	4	Snow Creek	661	43	5	
Five Points	1441	72	9	South Clio	948	34	4	
Flat Creek	679	33	4	South Mable	718	95	11	
Forentine	1337	10	1	Spady	802	7	1	
Four Springs	489	27	3	Spade	798	71	9	
Freeman	3744	38	4	Squirrel	1905	29	3	
Happy	793	110	13	Sul Interior	4234	75	9	
Happy Valley	625	71	9	Sulphur Interior2	492	11	1	
Haskell Ravine	1885	27	3	Three Mile	3588	62	7	
Hyden	2004	49	6	Traverse	756	60	7	
Izzy	649	41	5	Tuffaceous	1015	61	7	
Jackson	2901	68	8	Upper Frazier	4606	19	2	
Janison	5123	22	3	Upper Gray East	3379	10	1	
Left-foot	586	94	11	Upper Janison	2128	13	2	
Line Creek	1506	29	3	Upper Little	334	30	4	
Little	298	46	5	Upper Long Valley	4300	32	4	
Little Janison	2469	2	1	Upper Willow	1604	54	6	
Little Long Valley	1174	25	3	Up Sulphur	562	43	5	
LLV	1995	38	4	Val	876	39	5	
Long Valley	621	56	7	West Hnbug	1537	26	3	
Lower Big Grizzly	5359	37	4	Wild Cat	1846	93	11	
Lower Frazier	1842	16	2	Willow	3128	47	5	
Lower Gray East	2757	24	3	Willowrh	1984	38	4	
				Woodhuck	1771	34	4	

## Riparian Habitat

Riparian areas may be best described as the zone of direct interaction between land and water. They do not have precise boundaries because of temporal fluctuations of stream levels and intermixed vegetation types on the upland side. Riparian corridors connect the headwaters to the valley and facilitate transfer of materials. Water, energy, and organic matter move downstream through a continuum of changing ecological processes along each stream. During most of the year, riparian areas are clearly separate from (though intimately connected to) their adjacent stream. However, during periods of bankfull or high water the topographically lower sections of riparian areas that constitute a floodplain can become part of the stream. Typical riparian vegetation requires the high soil moisture usually found along streams, and some can even tolerate saturated soils and occasional inundation.

For this watershed assessment area, riparian vegetation includes stream zones, wet and dry meadow systems, seeps, springs, and some non-upland aspen stands. Riparian-wetland areas play a significant role in restoring and maintaining the chemical, physical, and biological integrity of the water resource. Riparian-wetland habitat is disproportionately used more than any other type of habitat by wildlife. In addition, riparian-wetland areas are highly prized for their economic values and other uses such as livestock production and recreation. Other values such as biological diversity, water storage, and sediment trapping are attributed to riparian areas. However, the ability of these sites to provide these products depends upon the quality of the vegetation present.

Riparian vegetation has direct and indirect influences on soil stability, channel morphology, water quality, and fish and wildlife abundance, distribution, and diversity. Conversely, the hydrologic condition of the floodplain and streamside zone affects the composition, abundance, and distribution of riparian vegetation within a landscape. Besides buffering the supply of both sediment and nutrients to stream channels, riparian vegetation provides habitat for aquatic organisms. The ability and availability of the surrounding stream zone to provide future woody debris is critical for habitat diversity and complexity. Riparian canopy cover and shade influence water quality parameters such as temperature as well as habitat for wildlife nesting, roosting, foraging, and dispersal.

## Watershed Restoration

A map of the road related restoration activities, instream channel improvements, and meadow enhancement projects is shown in Figure 12. There have been multiple watershed restoration projects in this watershed as well as numerous miles of road improvement and obliteration projects. Since 2003, twenty miles of road have been obliterated. Both instream and meadow restoration projects have been conducted to decrease accelerated erosion, improve habitat, restore hydrologic function, and re-water meadows.

A few of these restoration projects include Freeman Creek where a reach of stream bank through the meadow was restored. This project was implemented in 2003 and finished in 2004. At Jackson Creek there was another stream restoration project that included a culvert replacement, road relocation and redirecting a stream out of a gully and into a reengineered historic channel. In 2005 a culvert at Lightning Tree campground was repaired. Also, in the 2005 field season, approximately 3 miles of skid trails and roads that were in very poor condition were obliterated from the east side of Lake Davis.

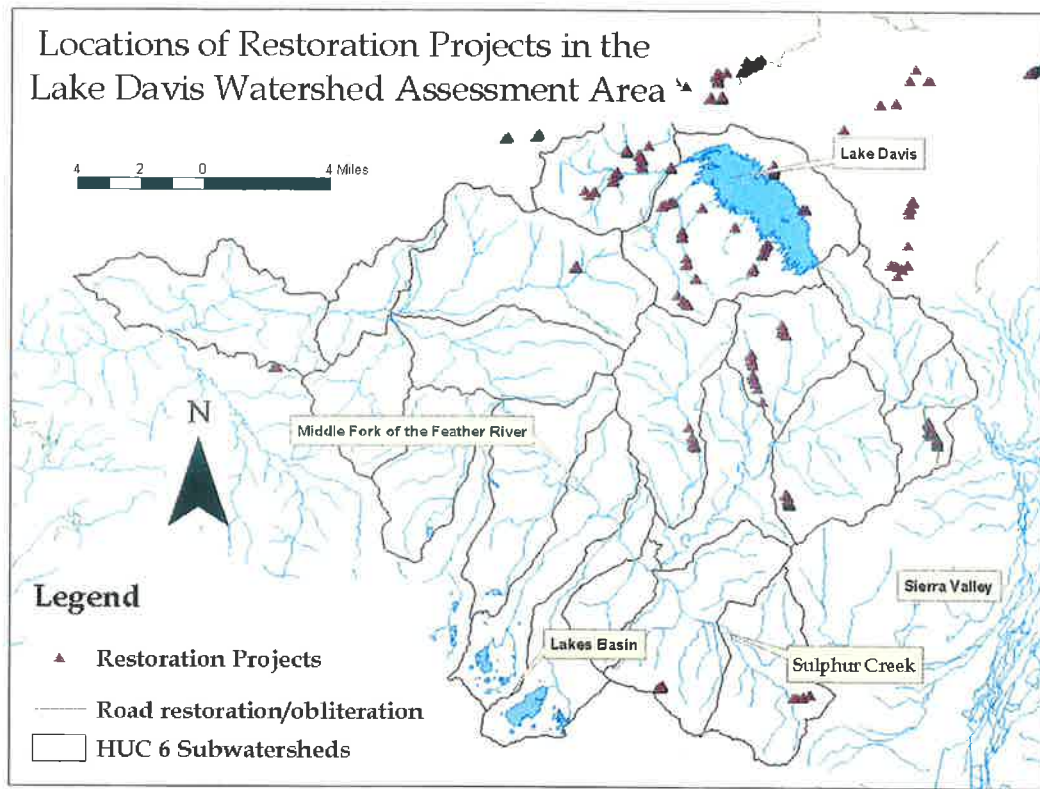


Figure 12. Watershed Restoration Projects

Table 11. Identified restoration needs by project type and NEPA document they are identified in.

Project Type	Description	NEPA DOC	Estimated cost
maintenance	replace wood structures with Large Rock	Prospect EA	20,000
road improvement, sediment reduction	blade and shape 23N03Y and 23N03YA, and place 6" of crushed rock	Mabie EA	140,000
road obliteration & stream stabilization	24N10D, 24N42X, Freeman Creek	Summit T.S. EA	57,150
road obliteration & stream stabilization	stream stabilization, redirect flow, obliteration temp roads	Threemile ISS EA	36,180
road relocation/recontour	approx 1 1/2 miles new construction/obliteration	Happy Jack EA	75450
stream channel stabilization	construct headcut control	Carmen MPT EA	4,900
stream channel stabilization	gully and headcut repair, redirection of flow, revegetation	Penman 2 EA	42,673
stream channel stabilization	gully and headcut repair, redirection of flow, revegetation	Eagle Point Salvage EA	17,700
stream channel stabilization	gully repair	Davis Timber Sale EA	17,050
stream channel stabilization	headcut repair, stream stabilization cow creek,	Westside Timber Sale	56,870
stream channel stabilization	redirect flow from road and construct headcut controls	Spring Creek Insect Salvage EA	26,450
stream channel stabilization	redirect flow, headcut repair, sediment reduction	Westside Salvage EA	16,800
stream channel stabilization	stream restoration, road obliteration and revegetation	Blakeless Insect Salvage EA	58,000
stream channel stabilization	Big Grizzly Creek accelerated bank erosion	Prospect EA	30,000
water quality improvement	reduce the potential for introduction of contaminants from human fecal matter at Fairview Point, Long Point and Freeman Creek	Lake Davis Fishing Access and toilet installation DN	60,000



## Wildlife

Lake Davis is within the Lassen/Plumas Management Zone (Zone 26) according to the U.S. Fish and Wildlife Service (USFWS) Pacific Bald Eagle Recovery Plan (1986). In 1986 it was estimated that this Zone had 26 existing territories and a wintering population of about 95 birds. Target territory and population goals were set at a total of 41 territories and a population of 122 birds. The number goals were developed for the express purpose of determining when to recommend delisting the bald eagle population in the Pacific region (seven western states). According to the 1986 recovery plan, when 80% of breeding population zone goals had been reached, one criterion for delisting would have been met. For Zone 26, the Recovery Population Goal was set at 27, which has been exceeded since 1997 (personal communication with Ron Jurek, CDF&G, 4/15/04).

The USFWS eventually opted to consider downlisting and delisting on a nationwide basis, rather than case-by-case in each of the five geographic regions of the country. So, the Pacific recovery plan is an historical document and its goals are not necessary for assessing recovery. The information in the Plan has been valuable for documenting population trend by geographic area, however (pers. Comm. wit R. Jurek, 4/15/04). This plan seeks to maintain or promote bald eagle population growth consistent with available habitat and not use special-purposed zone goals in the recovery plan for anything more than background information.

### Forest Management Direction

The PNF Land and Resource Plan (LMRP, 1988) (incorporated by reference) identifies resource goals and objectives to provide habitat and promote the continued viability of federally listed threatened and endangered wildlife species and their populations. This bald eagle management area is one of twenty-six Bald Eagle Habitat Areas identified, and for which habitat has been allocated for management, in the PNF LMRP (1988). Table 1 identifies the Management Areas at Lake Davis where bald eagle habitat has been allocated. The acres allocated for each Management Area are incorporated into the Lake Davis Bald Eagle Habitat Management Area.

Table 1. Prescription 11 allocation for Bald Eagle habitat at Lake Davis by Management Area (PNF LMRP 4-303, -332, -337)

Lake Davis Management Area			
Area Name	# Acres	Allocated Acres	Territories (Potential)
Mt Ingalls	31	176	1
Dotta	36	72	1
Lake Davis	37	2237	2 (1)

Since 2006, new territories on BKW have been documented, including: Ross Meadows, Eagle Point (Lake Davis), Camp 5 (Lake Davis) and Bluff Cove. The Forest currently has a total of 24 bald eagle territories. Despite the loss of a productive bald eagle nest site on Mt. Hough Ranger District in 2010, survey and monitoring results indicate the number of eagle territories has increased on the Forest during 2006-2013.





Bald Eagle

### Lake Davis-Management Area

The Lake Davis Management Area is one of the most diverse areas for wildlife habitat and wildlife species on the Beckwourth Ranger District. It has the highest concentration of nesting bald eagles on the Forest, with four active territories. Besides bald eagles, there is a nesting colony of gulls on the island, as well as nesting Canada geese, western grebes, many other species of water birds, and osprey around the Lake. In the forested habitat on the west side of the Lake, up to Smith Peak and Grizzly Ridge, there are many species of raptors including spotted owls and goshawks. Both are US Forest Service Region 5 sensitive species. The west side of the Lake also has many meadow stringers and aspen stands that provide habitat for a wide variety of migratory birds, including the willow flycatcher, a Region 5 sensitive species. Lake Davis is also an important area for spring and fall migrating water birds as it gives them a place to nest if they stay or a place to rest before moving on. On the east side of the Lake, in the Turner Ridge area, there is a deer fawning area, as well as one of the highest known concentrations of nesting flammulated owls.

In addition to being an important migration stop and summer reproduction area, there is an active bald eagle winter roost at Lake Davis. Although it is not known how many eagles are present in any given year, during 2011 monitoring for this project, at least 6 eagles were observed in December, just before dark, and it is assumed they used the winter roost. Adult and immature bald eagles have been seen around the Lake all winter, foraging at the Lake and creek outlets until the Lake freezes over. Then it is assumed they forage in Big Grizzly Creek and other nearby creeks and the Feather River.

As part of the grant, all active bald eagle territories at Lake Davis were monitored from winter of 2011 through June of 2014. During the winter of 2011 there was very little snowfall, and therefore not much OSV activity. Then in late spring, April and May, there was heavy snow and rain, but again not much OSV use. Winters 2012 and 2013 were also low snowfall years. Monitoring the activity that did occur during

these winters, it was found that there is a lot of use in meadow stringers. In 2011, at one territory, a tracked vehicle had gone down a meadow stringer next to the nest tree, even though OHV vehicles are not allowed off road. Another territory, at the south end of the lake near the main road, has a meadow stringer that is easily accessible right off of the main road. This stringer leads straight to a bald eagle nest. In 2012, snowmobile tracks were seen throughout the meadow stringer and within 100 feet of the nest tree. The pair fledged two young in 2012. In 2013, snowmobile tracks were seen crisscrossing right underneath the nest tree in February. It is not known if the tracks were made in a day or if it was multiple visits by the same or different users. While eagles are not nesting at this time, this is when pair bonding activities occur and the pair was present in the territory. The pair did not produce any young although the pair was seen in the territory throughout the spring and even at the nest tree. The pair was not seen in the nest area in 2014.

Enforcement to keep OHVs and OSVs on roads is very difficult, especially OSVs. In the three years of winter monitoring, there were many instances where the vegetation was “chewed up” from snowmobiles going off roads over areas that did not have enough snow. In addition, many of the stringer meadows on the west side of Lake Davis are used heavily by snowmobilers. Encouraging more use in this area will likely bring more of this kind of damage and disturbance because it is difficult to enforce vehicles staying on designated routes.

### **Mt. Ingalls Management Area**

This area has a variety of habitats, from large meadows and marshlands to forests that range from eastside pine on the east, mixed conifer on the west and red fir up in the higher elevations. There are numerous spotted owl and goshawk territories, a bald eagle territory, and flammulated owl nesting on Turner Ridge. Sandhill cranes, Canada geese and other waterfowl nest in the Summit Lake area. There is historic use of some of the larger meadows by great gray owls and there is still suitable habitat in the area. As with the Lake Davis area, the large meadow areas are important habitat and it is important to keep motorized vehicles off of them.



**Mule Deer**

## Penman Peak Management Area

This area is mostly forest habitat with small amounts of riparian areas and streams. There is one large area of meadow/aspen habitat in Happy Valley. As with the other two management areas, there are spotted owl and goshawk territories present. The Mount Jackson-Penman Peak area is key summer and winter range for the Sloat deer herd. There is deer fawning habitat in the Mount Jackson and Grizzly Ridge areas. Happy Valley provides habitat for a wide range of migratory bird species, including willow flycatchers. There is at least one golden eagle territory and one peregrine falcon territory in the area.

## Botany

### Existing Conditions

The Project Area contains a variety of natural botanical resources, including rare plants and wetlands such as springs and fens. Wetlands are valuable in that they can serve as habitat for many rare species as well as can contain a high level of biodiversity. There currently are 165 sites of rare plants, 350 springs, and 10 fens known within the Project Area. Thirty of the rare plant sites, 56 of the springs, and two of the fens are within 100 feet of roads. Additionally, one rare plant site and three springs are within 100 feet of a designated motorized trail. Known springs and rare plant sites are scattered throughout the Project Area with rare plants concentrated in the southern third of the Project Area and within a two mile radius around Lake Davis. Fens are concentrated around the west side of Lake Davis extending west and southwest.

In addition to natural botanical resources, the Project Area contains several non-native, invasive plant species. There currently are 88 sites of invasive plant species within the Project Area. Thirty-two of the invasive plant sites are within 100 feet of a road. Invasive plant sites are scattered throughout the Project Area with concentrations around Lake Davis and along Jackson Creek, which is located in the southwest part of the Project Area.

### Resource Concerns

The OHV Travel Management Subpart B FEIS was completed that considered and analyzed impacts to botanical resources. Designated OHV trails avoided or minimized disturbance to then known existing botanical resources and provided mitigations. Overall, the OHV Travel Management trail designation process reduced risk of botanical resource damage. However, not all sites could be avoided during the route designation process. Additionally, some botanical resource sites are located along Forest Service system roads that experience impacts from OHVs as well as regular passenger vehicles. While resource concerns can be reduced, they cannot be eliminated entirely. Resource concerns from OHV recreation use include impacts to rare plants and their habitats, including sensitive wetland habitats, where sites occur near motorized trails and existing system roads. They also include impacts as a result of OHVs traveling off of designated trails. Invasive plant introduction and spread from OHVs and their transport vehicles/trailers is another concern. In this Project Area, there are no known invasive species sites within 100 feet of motorized trails, however, 32 sites are within 100 feet of a system road that are used by OHVs.



With regards to OSV recreation use, direct and indirect impacts to rare plants and habitats are not as likely, though possible. This is because OSVs operate over snow which is less likely to cause ground disturbance or damage to plants. An exception to this is when OSVs operate in low snow conditions and must cross small areas that have little to no snow. OSVs also are less likely to introduce and transport invasive weeds. The primary concern would be transport of invasive species on vehicles/trailers that carry OSVs to staging areas.

Further development of OHV and OSV opportunities has the potential to both increase and decrease risk of resource damage. Developing staging areas and a marked trail system may attract more users to the area. Increased use has the potential to increase the risk of accidental damage to plants and wetland habitats, as well as increase the risk of non-native invasive plant species introduction and spread. However, development of specific staging areas and marked trails would be guided by the NEPA planning process in which potential impacts would be assessed and mitigations provided. Sites to be developed would be designed to avoid or minimize disturbance to rare plants, wetlands, and invasive species. These developed sites also have the benefit of guiding most users to specific parking areas and routes, thus reducing the risk of resource damage that occurs as the result of off-road parking or off-trail travel.



When planning for future OHV and OSV activities in the Project area, the following recommendations should be considered.

- Avoid or minimize disturbance to all rare plants and wetlands.
- Avoid all invasive plant sites.
- Especially avoid or minimize staging areas and marked trails in high concentration areas for rare plants, wetlands, and invasive species. Current high concentration areas include certain parts of the Jackson Creek area and certain parts of the Lake Davis area, though conditions may change that add new concentration areas.

- Follow all mitigations and recommendations from the OHV Travel Management FEIS with regards to invasive species, including but not limited to: education, outreach and continued cooperation with federal, state and private entities; requirements for use of weed-free materials for erosion control, trails maintenance and re-vegetation; cleaning of equipment used in trails maintenance; and monitoring; incorporation of educational materials that emphasize weed prevention measure into the final MVUM maps or associated materials.

## Heritage and Cultural Resources

### Existing Conditions

The Project Area contains an abundance of known cultural resources, including prehistoric, historic, and multi-component archaeological sites. There currently are a total of 520 recorded sites within the Project Area. This includes nearly 128 miles of linear sites such as historic trails, railroad grades, and ditches.

The Forest Service, as a federal agency, is required to protect from public disclosure confidentially information associated with cultural resource management activities under Forest Service Manual (FSM) 2360 (2368.1), Section 304 of the National Historic Preservation Act (NHPA) [16 U.S.C. 470w-3(a)], and Section 9 of the Archaeological Resources Protection Act (ARPA) [16 U.S.C. 470hh]. Therefore more detailed site location information is not disclosed in this feasibility report.

### Resource Concerns

#### Utilizing Existing Roads with No New Trail Construction

There would be little to no impact to cultural resources from the use of existing roads and trails. Since these roads and trails are already in place, the only change may be increased use.

#### Staging Areas and Signs

The proposal is to create gravel pull outs along the existing roads and trails for vehicle and trailer staging, installing information signs at the staging areas, and to mark the routes with signs. If locations of known archaeological sites/cultural resources are avoided by these staging areas and signs, there would be no effect to cultural resources. If locations of know cultural resources cannot be avoided, it is required that they are evaluated to determine if they are eligible for listing on the National Register of Historic Places (NRHP).

#### Creation of Maps of the Routes

There would be no effect to cultural resources by the creation of maps of any designated routes.

#### Over Snow Vehicles

Riding over snow vehicles has little potential to impact cultural resources as long as there is enough snow as to not create any ground disturbance. Areas of patchy snow, especially off existing roads or trails, should be limited or avoided as to not create any cultural or natural resource damage or disturbance.



### Tribal Consultation

Formal government to government consultation is required with local federally recognized Tribes during the National Environmental Policy Act (NEPA) process.

When planning for future OHV and OSV activities in the Project area, the following recommendations should be considered:

- Avoid or mitigate effects to all cultural resources as determined by the National Historic Preservation Act.
- Avoid staging areas and marked trails in areas of known cultural resources.

## V. OPPORTUNITIES

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This section addresses opportunities or ideas that could be taken forward as proposed actions and further analyzed through the NEPA process. The following ideas were generated through the process of public involvement and came from both project team members and the general public. The following ideas or opportunities were selected by the project team members that could be feasible for OHV and OSV use in the Project Area.

### OSV Trails

There are opportunities to enhance OSV use in the Project Area by marking certain routes with blue diamonds. Marking OSV routes and publishing a map of the trail system could attract more local and outside OSV users. A system of marked routes could create many opportunities for a variety of riding experiences. OSV recreationists could have the ability to enter the system at four different entry points. There could be opportunities for shorter 2-3 hour rides or longer all-day rides, depending on the interest of the rider and snow conditions. The Map in Appendix B shows 82 miles of roads that could be marked for OSV travel. The following table lists the National Forest System Roads (NFSR) and County roads that could comprise the marked trail system.

NFSR 24N12	NFSR 24N57
NFSR 23N12	NFSR 24N11Y
NFSR 23N48	NFSR 24N85Y
NFSR 24N07	NFSR 24N10 (Co Rd 10)
NFSR 23N11	NFSR 24N07A
NFSR 23N12E	County Rd 112
NFSR 24N58	

These roads could be closed by forest order to wheeled vehicles when there is 12 inches of snow on the ground. By issuing a forest order to close the road system to wheeled vehicles the trail system could be protected from damage and provide OSV users a safer riding environment.

OSV vehicles could still access other routes and areas in the Project Area except the area adjacent to Lake Davis which could be closed to OSV travel due to winter roosting requirements for Bald Eagles. The area that could be closed to OSV travel is highlighted in yellow on the map in Appendix B.

The past, recent and projected snow conditions in the Project Area are insufficient to warrant developing a more sophisticated OSV program consisting of groomed trails. The snow conditions are not consistent enough to recommend a high financial investment in both a grooming program and highly developed staging areas.

### OSV Staging Areas

Staging areas could be located at strategic locations to provide areas for OSV parking. Each staging area would consist of a gravel parking area that could accommodate up to 8-10 vehicles towing trailers. There would be a bulletin board showing a map of the marked OSV routes and other safety information. The staging areas could be located at the following entry points:

**County Road 112 near Mallard Cove:** Currently the County plows the road to this location in years where there is normal snow fall. A larger parking area could be developed to allow vehicles with trailers to safely park off the road.

**County Road 10 or NFSR 24N10 near the intersection with County Road 126:** In normal snow years, Plumas County plows the road at this intersection to provide winter parking for vehicles. An area could be developed to provide a larger parking area for OSV vehicles entering the trail system from this location.

**NFSR 24N12:** Two Staging Areas could be developed along NFSR 24N12. One could be built just beyond the National Forest boundary at elevation 4,800 feet. In years where there is ample snow, OSVs can take advantage of this lower elevation staging area to access the trail system from the south entry point. In years where there is a lower accumulation of snow, an additional staging area could be located at a higher elevation (5,200 feet) at the intersection of 24N12 & 23N97.

**NFSR 23N11 (Jackson Creek):** Two Staging Areas could be expanded or built along NFSR 23N11. The first could be at the current Jackson Creek Picnic Area. There is a vault toilet at this location. The parking area would have to be expanded to accommodate approximately eight vehicles with trailers. This staging area is at 4,400 feet. Due to the low elevation, only during years with high snow accumulation could this staging area be used. An additional staging area could be built up the road where there is a natural bench at 4,900 feet. This location is approximately 1.3 miles from the Jackson Creek Picnic area. Due to the steep terrain along NFSR 23N11 there is not another suitable location to build a staging area. This staging area would be smaller and would only accommodate up to four vehicles towing trailers.

## OHV Trails

For summer OHV use, there are opportunities to enhance the current extensive system of roads and trails available to OHV use in the Project Area by re-designating the maintenance level of two National Forest System Roads. NFSR 24N12 and 23N11 are currently designated as maintenance level 3 roads. This designation only allows use on these roads by highway legal vehicles only. This designation prohibits use by OHVs. By pursuing a lower maintenance level designation to a level 2, OHVs could legally travel these roads and create more riding opportunities. No new routes would be created. Currently there are 263 miles of road and trails accessible to OHVs in the Project Area as shown on the MVUM Map on page 16. By changing the maintenance level of the two roads mentioned above, there would be approximately 18 additional miles of road accessible to OHVs. Changing the maintenance level would also create more loop opportunities for OHVs.

## OHV Staging Areas

The staging areas developed for OSV use along NFSR 23N11 and 24N12 could be available for use in the summer by OHVs, if the maintenance level designation of these two roads is lowered. Currently, there are no areas where vehicles with trailers can safely park to access the current road and trail system. It is important for resource protection as well as providing for visitor safety to establish staging areas. It is an efficient use of resources to have dual use of facilities. The only way for OHVs to take advantage of the OSV staging areas is to lower the maintenance level of the two roads.

No staging areas adjacent to the Lake Davis Recreation Area are proposed to accommodate OHV use. OHV use would be concentrated in the Jackson Creek, Smith Peak and Penman Peak area. There are also OHV opportunities available north of Lake Davis via Bagley Pass in Red Clover Valley and east of Lake Davis in Dixie valley. Due to wildlife management objectives, it is proposed that the Lake Davis Recreation Area continue to promote non-motorized recreation opportunities.

## **VI. SUMMARY**

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The Project Area has a high potential to provide high quality OSV and OHV opportunities that could help promote and market this area to both local and regional visitors. The area, especially in the Jackson Creek and Smith Peak area is underutilized by OHVs. Many of the existing road and trail systems are only being used intermittently. Many roads and trails need to be brushed out and maintained. By attracting more use, volunteers from various organizations can be called on to help maintain these roads and trails. The most important component to attracting more users to the area is to develop staging areas. Without staging areas, visitors do not have a place to park to access the trail system. Information bulletin boards located at the staging areas could help inform visitors of opportunities, offer safety messages and promote resource protection.

Winter use by OSVs is dependent on snowfall. In the last three years the snow accumulation has not been adequate enough to support OSV use and this “low snow” trend is predicted to continue. It is recommended that the Forest Service continue to monitor snow conditions in the Project Area for the next several years. If future snow levels are adequate enough to support OSV travel, staging areas could be developed at both lower and higher elevation locations to allow access to the trail system. The Forest Service will need to work with Plumas County or the State of California to plow roads to the staging areas.

Historically, Lake Davis has been a quiet recreation area, mostly fishing, camping and wildlife viewing with some hiking, snowmobile and ATV use. It is recommended that the Lake Davis Management Area stay a quiet recreation area due to the importance of the habitat diversity of so many wildlife species. It is probably the most significant area on the Beckwourth Ranger District in terms of the sheer numbers of wildlife, diversity of species and reproduction.



## Appendix A

### Public Comments Received

<b>Date</b>	<b>Individual or Group</b>	<b>Comment</b>
8/24/2010	Sylvia Mulligan	Not as concerned about the eagles as some might be. They nest right next to the freeway construction in Redding and on the edge of town in Burney so interaction with people, especially those they can hear on a snowmobile should NOT be a threat.
1/26/2012	Sylvia Milligan	Lake Davis provides family routes. Able to ride from lodge, do not want to trailer. Snowmobile need gas, no gas currently available. Groomed trail system to get out to more experienced rides. Some groomed trails, some official trails ungroomed but designated. Groomer shed near the fire station. Volunteers are willing to construct groomer shed.
1/26/2012	Jim Corey	FS Proposal has safety issues for off-trail system, steep terrain, lots of manzanita, trail system good for riding.
1/27/2012	Silvia Milligan	Was a good meeting. Silvia Milligan -January 27,2012 Was a good meeting. The public does not need so many miles groomed, but need entry from the campground direction and from Highway 89 at the creek near Chalet Lodge and around Lake Davis. Used primarily by families and novices. Groomer shed right off Lake Davis Road or across from commercial area. Groomer could be way out in the future- need to concentrate on trial system and have a location selected for groomer shed. Wants designated routes, on the maps as quickly as possible, public fears opportunities will be taken away.
1/28/2012	Elaine Vercruysse	I was excited to see so many snowmobilers and representatives from snowmobile groups there. They are passionate about their sport, and many good ideas and concerns were discussed. The FS staff seemed receptive to the ideas, and to doing what will help the local businesses. A groomed loop around the lake would be great for novice riders, and expert riders would use it to get out to their play areas. Tying trails into lodging and services would be beneficial to the local businesses. I have asked Bob Perreault to put this project on the agenda for next Plumas County Coordination Council meeting. This project is very important to the county's economy. Let me know when you've scheduled a meeting for the summer portion of this project. I will gather up some route proposals from the SAC membership and bring them to the meeting.
1/30/2012	Jim Corey	Wants to be involved, will help with snow machines around Lake Davis, and wants to help supporting their (SAC) concerns.
1/30/2012	Sierra Access Coalition	Excited to see so many snowmobilers and reps from snow groups there. FS staff seemed receptive to their concerns. Wants a groomed trail around Lake Davis for novice riders, expert riders would use it to get to play areas. Tying trails into lodging and services would benefit local businesses. Asked Bob Perreault to put this project on PCCC meeting- important to county's economy. Interested in summer proposals.

2/2/2012	Rodney Lacey	OSV use at Smith Peak Lookout- needs to be signed advising users of a cliff or steep drop-off area.
2/7/2012	Kathleen Baynes	Accommodate x-country skiing and snowshoeing, dread the roar of snowmobiles, cross-county ski on both side of the lake. Thank you for looking out for non-motorized recreationists
2/26/2012	Liz Odell	23N48 Road – often melted down to dirt from junction with the 11 road. Also 23N11 and 23N12 melted off to dirt, not a prime choice for groomed trail system. Recommends a N facing slope- La Port or Red Bridge. Lake Davis on Eastside can melt out very fast. Concerns about roads being closed to wheeled vehicles when not enough snow for grooming.
3/1/2012	Shelley Wilkerson	Likes the idea of groomed trails and possibility to attaching to Jackson Creek. Agrees with the biologist that we need to avoid the nesting area of the eagles. Next winter cabins should be fully winterized. Supports decision that will support more tourism to our county and avoid danger to wildlife.
3/6/2012	Graeagle Plumas Alliance	Supports bring commerce to area
3/7/2012	Tom Connolly	OSV at Chalet View may not be an ideal location due to elevation/exposure. Access in residential area could lead to concern over noise/traffic/law enforcement etc. Areas are favorable to family snowmobiling outings and those areas would generally not attract aggressive snowmobilers. Consider a rout directly adjacent to the paved county road from the proposed staging area SW of LD. Eliminate routes from grooming in habitat area, haven ridden this there is nothing special for snowmobilers. Opportunity to low-bed the Bassett groomer from the Gold Lake staging area to Lake Davis area. Has logged over 10K hours as a professional operator.
3/7/2012	Bob Rowen Snowlands Network	Many skiers and snow-shoers do not want to recreate together with motorized vehicles. Important for communities to benefit from increased opportunities, for clean and quiet winter recreation. Resulting in increased tourism. Imperative to protect wildlife winter habitat, clean air, clean water and natural environments for future generations. Supports Nordic skiing and snow-shoeing – current PNF is pre-dominantly motorized recreation. For minimal cost the PNF can create substantial ski and snowshoe touring opportunities that will stimulate tourism and provide significant benefits to the community.
3/7/2012	Public Mtg Comment	Closure order on the west side, allow ice fisherman to still drive down, sign, give reasons why (wildlife protection area).
3/7/2012	Public Mtg Comment	Use right-of-way along county road to develop access route.
3/7/2012	Public Mtg Comment	Not a lot of non-motorized trails that the PNF is making available, not just trails but designated areas needed for non-motorized.

3/7/2012	Public Mtg Comment	Just one staging area needed on Lake Davis use for OSV, OHV and non-motorized. Concerns with staging area need the 24N10 road, not a great location.
3/7/2012	Public Mtg Comment	Manage trails around business community.
3/7/2012	Public Mtg Comment	You can't go all the way around the lake because they plow the dam; they can't drive across bare pavement.
3/7/2012	Public Mtg Comment	Broaden your base to attract non-motorized users, need a significant area for non-motorized users. 1) Users will not come to an area unless designated as non-motorized. 2) Develop trails for non-motorized use, not designate whole areas. Terry Cross would like to draw some maps that show trails that would work for the Lake Davis Area.
3/7/2012	Public Mtg Comment	Willow Creek Staging area is nice because right on Highway 70, near business Chalet View. Snow melts too quick here as well as Jackson Creek.
3/7/2012	Public Mtg Comment	If you stay around the lake it is nice for families because it is fairly flat and easy to access.
3/7/2012	Public Mtg Comment	The west side holds the snow longer.
3/7/2012	Public Mtg Comment	Staging Areas generally have paved areas, bathrooms, parking lots, kiosks, etc.
3/7/2012	Public Mtg Comment	Evaluate for multiple staging areas.
3/7/2012	Public Mtg Comment	The county groomer suggests to not groom around the lake.
3/7/2012	Public Mtg Comment	You could divide Lake Davis in half for motorized and non-motorized; restrict use on east side to motorized traffic.
3/7/2012	Public Mtg Comment	Motorized traffic could still access county road past Mallard Cove.
3/7/2012	Public Mtg Comment	Bagley Pass south motorized would only have access along the county road.
3/7/2012	Public Mtg Comment	Snowline is critical for staging; chalet View does not have enough snow.
3/7/2012	Public Mtg Comment	Funding planning effort from State OSV program, actual development can only use state dollars for motorized trails. State fund can pay for grooming and management.
3/7/2012	Public Mtg Comment	We need to balance all the resources.
3/7/2012	Public Mtg Comment	Try tying the staging areas together, connect to make a network, LA Porte, Diamonds.
3/7/2012	Public Mtg Comment	The county plow the road to Mallard Cove, this is important for fisherman.

3/7/2012	Public Mtg Comment	People who really like this area because it is quiet, they do not want a Truckee or Donner Pass.
3/7/2012	Public Mtg Comment	Try to maintain a quiet Environment.
3/7/2012	Public Mtg Comment	Would like to keep OSV on the trails, not have them go through meadows in order to maintain a quiet type of recreation experience.
3/10/2012	Terri Weist California Department of Fish and Game	Maintain large un-fragmented blocks of natural habitat provide the best opportunities for wildlife conservation in Plumas County. Section of F and G code that protect birds, their eggs and nests. Lake Davis has bald eagle, goshawk and other nesting bird territories. The EA for this project should clarify baseline conditions. The project description should show where snowmobiles are currently used and the magnitude of that use. The analysis should show where and how the use of motorized vehicles under the proposed project will differ from current conditions and describe cumulative impacts the project may incur. Department recommends no more than 1.5 miles on open roads per section of land. Currently the density of roads far exceeds the recommendations. Winter motorized activities can significantly impact wildlife. The analysis of this project should id mitigation for negative impacts to wildlife from OSV activity. Since this project may result in increased in OSV activity, we recommend this project include permanent closure of trails and roads leading to or are adjacent to meadow systems, riparian or other sensitive habitats to reduce OSV incursions on these systems. We further recommend additional education and enforcement be a primary focus of this project.
3/14/2012	Tim Beals- Sierra County	Supports projects for winter recreation.
3/29/2012	Diane Uchytel	A guide to California Off Road Adventures lists Lake Davis #26 as a snowmobile area printed by OHMVR Dec 2007. In the past I rode snowmobiles and now I x-country ski. I love it when I have had snowmobiles go ahead of me and given me a "groomed" trail to follow - much less work for me. I do x-country ski at both Bucks Lake and Gold Lakes, once the snowmobilers leave the parking lot and get into the backcountry I rarely see much of them anymore. I believe the issues between user groups can be solved with a good understanding and respect of each sport and how it benefits each other. I have done both.
3/30/2012	Cynthia Lusk	I am interested in seeing the Jackson Creek area used and improved to become a staging area for recreation - both motorized and non motorized use. I would like to help by volunteering my time thru BCH or HMR. I live in Cromberg and would like to see more local trails I could ride my horse on. I would especially like to see Trail 12E19 reopened along Long Valley Creek.



4/4/2012	Sierra Access Coalition	<p>Thank you for the opportunity to comment on the Lake Davis Summer Winter Recreation Area. Sierra Access Coalition (SAC) is a group of over 1250 members who work to preserve access to public lands and promote recreation use on public lands. We are pleased that the Forest received this OHV Grant and we look forward to working on it with you. Our comments below are divided into two categories, winter and summer recreation use.</p> <p>Winter Recreation: There have been two public meetings and one private meeting that we are aware of, although the grant application says there have been five public additional meetings that we had no knowledge of.</p> <p>Snowmobilers and businesses have stated they want to see a groomed snowmobile trail around Lake Davis that connects to the businesses that are located at the lake. The benefits of this location include: 1. Sufficient snow for grooming. 2. Close proximity to lodging, food, fuel, and supplies. 3. A groomed trail at the lake would provide a safe trail for families and novice snowmobilers, as well as provide a quick route out of the area for experienced snowmobilers to go explore. 4. Studies show that when snowmobilers plan a trip, they look for trails that connect to their lodging so they don't have to trailer their sleds. They also look for safe groomed trails for their families. 5. The groomed trail would also benefit cross country skiers. 6. A groomed trail can be used as a tool to direct users to desirable areas and keep them away from sensitive areas. The International Snowmobile Manufacturers Assoc. (ISMA) states that 80% of snowmobile riders tend to stay on groomed and marked trails, with 20% of snowmobilers using their sleds for ice fishing. 7. Snowmobiling has rejuvenated the economies of many communities and is an important segment of the active outdoor recreation economic engine. See the attached document which is pages 6 through 9 of a brochure published by the California Nevada Snowmobile Association. 8. The average snowmobiler puts over 1200 miles per year on their sled. If a groomed trail is provided at Lake Davis, it would draw snowmobilers and their families from Northern California and Nevada. Most vacationing snowmobilers spend 2 nights, which brings substantial tourist dollars to the community. 9. The trails around Lake Davis are promoted by the California State Off-Highway Motor Vehicle Recreation Division.</p>
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		<p>10. A stated objective of this grant and planning process is to take pressure off the Lakes Basin area. In order to accomplish that, the first basic thing that needs be provided to attract the public must be a good riding experience including exceptional views, food, lodging, fuel and supplies. The Lake Davis area provides all five of these items. 11. There are three options being considered for a groomer shed and staging area (Jackson Creek, Willow Creek 24N12, and Lake Davis). Only Lake Davis has sufficient snow for the full snowmobiling season. The other two locations are southern exposure low elevation trails. If a groomer was stored at either of the low elevation areas, it would become stranded without snow while the upper elevation areas continue to have sufficient snow depth to ride and groom. So Lake Davis is the only acceptable location for a groomer shed. 12. Wheeled vehicles currently use the Jackson Creek road for winter hunting. Groomed trails would not be compatible with this historical use. 13. A winter staging area at Jackson Creek would be somewhat isolated from the towns of Portola, Graeagle and Quincy. A staging area at Lake Davis would have services at the lake, plus at Portola which would draw more tourism. 14. Trails up Jackson Creek and Willow Creek are not as scenic as Lake Davis, so would not be as likely to draw tourists. 15. Plumas Co Road 112 on the east side of Lake Davis is plowed to allow access for ice fisherman. According to the ISMA 20% of snowmobilers ice fish so they need access to the lake. Access to the lake must not be restricted under this project. 16. SAC will support a groomed trail around Lake Davis. This would include a "detour" of groomed trails off 24N10 up towards Smith Peak and down 24N12 back to the lake. This was agreed to with Russell Nickerson at the last public meeting. This would encourage traffic stay out of sensitive areas but it would not be a restriction and 24N10 would remain an official trail for the full length of the road. We also will support a groomed trail up the Bagley Pass Road to PC 111, which would also encourage traffic to leave the lake and ride in other areas. 17. In addition to the groomed trails listed above, SAC will continue to support the official trail system as shown on the attached map, which will connect the groomed trails to food, gas, lodging and other services at Lake Davis. 18. 24N12 could be groomed from the upper Lake Davis area as far down towards Hwy 70 as snow conditions allow. This would tie in to an excellent lodging facility, but the deep snow season is short in the lower elevations. 19. To date there has been no Coordination on this project. Coordination with the County, the City of Portola, and local tribes is essential to this project and it should have been completed before the public scoping began. 20. In summary, SAC will be supportive of groomed trails around Lake Davis. SAC is not supportive of a groomer shed or groomed trails at Jackson Creek or Willow Creek 24N12 beginning at Hwy 70. However, some grooming from the top down might be feasible. SAC is not supportive of any restrictions to snowmobiles whatsoever.</p>
7/20/2012	Delaine Fragnoli	<p>2. 24N12 could be groomed from the upper Lake Davis area as far down towards Hwy 70 as snow conditions allow. This would tie in to an excellent lodging facility, but the deep snow season is short in the lower elevations.</p>

7/20/2012	Susan Terry	3. To date there has been no Coordination on this project. Coordination with the County, the City of Portola, and local tribes is essential to this project and it should have been completed before the public scoping began.
7/30/2012	Gail Ferrell	Snowlands will be stating that the WEST (left) side of Lake Davis should be designated for non-motorized winter activities only and snow-mobiles should use the Right (EAST) side of Lake Davis.
7/31/2012	Trent Saxton	Lives at Lake Davis; Has View of Lake. Question A- How Many Breeding Eagles? Lisa Answered- 3-5 Nests. B- Why does FS want to protect Eagles at Lake Davis? C- Concerned that the public hasn't had input on MSV. D- Wants FS to come up w/ plan that meets motorized. E- Thinks FS has not advertised meetings. F. Wants to know whose idea it was to plan Eagle areas. G. Suggested drawing circles around Eagle nesting areas.
7/31/2012	Mark Noland-Snowlands Network	A- What is the next step for FS process? B- When will comments be taken into action? C- I recognize there is heavy snowmobile use at Lake Davis, however, communities that can set aside non-motorized designated areas will be successful at making their communities destinations. D- Cross Country skiers need a designated area for quiet skiing; The West side of the Lake is a good spot for non-motorized use. E- Community is turning their back on non-motorized use.
7/31/2012	Martin Shaber	Believes that the snow mobile use in the Lake Davis area has decreased & that there is no problem occurring. Also feels there is no available \$ for grooming. Wasn't aware of previous meetings; feels meetings shouldn't be conducted during business hours.
7/31/2012	Joseph Goddess	Has co-existed w/ eagles & believes that no further restrictions should happen because of eagles.
7/31/2012	Lake Davis Resident	Feels FS should "do nothing"; feels there are no problems in current area; Doesn't want to hurt birds, suggests closing off certain areas for birds. No Groomed trails.
7/31/2012	Audrey Ellis-Eastern Chamber	Asked if the environmentalists are working w/ the air-force & Navy to document their impacts on the eagles.
7/31/2012	Resident	Asked what kind of studies had been done on the local economy. Lisa responded nothing to date.
7/31/2012	Lauren DeJarden	Feels this is a part of a larger plan to remove people out of public lands.
7/31/2012	Grizzly Store Owner	Concerned about unintended consequences of social perception. Wants to maintain fishing access. Asked if snowmobiles could cross non-motorized trails. Plumas county will 'die' if we don't get more people to county; Groomed trails will bring more people to county.
7/31/2012	Resident-Lake Davis	Suggested FS mark trails that are un-groomed, Reserve quiet area for cross country skiers, used to be a spot on camp 5 side of Lake.

7/31/2012	Bern Bishop	Concerned that access be maintained from his home at Davis. Maintain ungroomed access into forest. Map makes it look like moto access off Lake Davis road is restricted from residences. Asked how many people want a groomer? Three people raised their hands.
7/31/2012	Don Skaggs-La Porte	Preserve whats here, get something on paper, otherwise all of it can get taken away. Get it on the map.
7/31/2012	Resident	Wants to know what FS process and goal is?
7/31/2012	Terry Swafford	Concerned that grooming means 'restrictions'. Protect eagles but, concerned that this will lead to more restrictions if FS opens this door they would restrict and limit access just like through travel management. Concerned that this would lead to Subpart C of travel management if FS opens the door. FS would restrict and close access just like through Travel Management process.
7/31/2012	Resident	Believes that marketing is the only thing that is going to bring people to county.
7/31/2012	Resident	Thinks we should try to outreach to people outside of county.
7/31/2012	Lisa-Resident	Doesn't want people from outside of area to decide what happens on public lands.
7/31/2012	Martin Schafer	My recommendations are: Marked trails, un-groomed trails, no exclusion zones along the lake, meetings at a time and location where working people can attend.
7/31/2012	Resident	I am a resident of Portola and use Lake Davis for hiking and cross country skiing. When skiing I like to see the snow covered meadows in their pristine beauty. Please may the snow-mobiles not cross meadows, it messes with that beauty. Thank you.
7/31/2012	Bob Rower	Thank you for putting together this meeting and being PROACTIVE! Snowlands Network will submit written comments.
7/31/2012	Elaine Frank	I would like to PROTECT the eagles by just marking 300-500 ft. of their nests. NO MEADOW closures, anywhere. East side of lake access/ groomed staging for cross country/ shoers.



7/31/2012	Jim and Bee Bishop	We feel closing the west side of Lake Davis is a mistake. It would impact all of the people who live at Lake Davis 12 months a year. Most do not have trailers to go to a staging area. Forest land is just across the street. The meadows are a wonderful and safe place to teach children how to ride snowmobiles. Grooming trails would be very costly. How would this be paid for? Trails would have to be groomed daily otherwise, after numerous snowmobiles travel the trails they become packed down, very slippery and bumpy. Also, it becomes a problem for the machines because they need the snow to keep the tracks cool. We don't feel snowmobiles interfere with the eagles. They have been at the lake for years and are still there. If there is a concern, there are always ways to close the areas around them. Trails need to be identified clearly. Putting limitations as to where people can go enjoy snowmobiling, ice fishing, cross country skiing or to just enjoy the beautiful winter should not be done. As for cross country skiers and snowshoers, the have told us the snowmobiles do not bother them because they use tracks the machines make which makes it much easier for them. Please don't try to fix something that is not broken. It is perfect the way it is.
7/31/2012	Grizzly Store owner	FS is trying to work with public, wants to acknowledge that FS is.
8/8/2012	Bob Rowen - Snowlands Network	Represents the interest of skiers, snowshoers, and other winter recreationists. Snowlands has over 500 members. Snowlands urges all national forests in California to engage in winter motorized travel management. The problems associated with snowmobiles - their noise, pollution and other impacts - are generally acknowledged. It is also generally acknowledged that many skiers and snowshoers do not want to recreate together with motorized vehicles. Thus, as part of its mandate to manage lands for multiple use, the Forest Service must set aside lands for clean and quiet recreation where user conflicts arise due to increased demand for winter recreation. The communities in and near the Plumas National Forest will economically benefit from an increase in opportunities for clean and quiet winter recreation. The creation of these opportunities will have tangible benefits to the economy by stimulating tourism activity by persons desiring to ski or snowshoe. Backcountry skiing and snowshoeing are rapidly growing winter sports, growing at approximately 20% a year. Therefore, there is a real and substantial opportunity for the Plumas National Forest to attract more skier and snowshoer tourism to the area by creating areas dedicated to clean and quiet winter recreation. The creation of these opportunities does not need to lessen in any significant manner the attractiveness of area for snowmobile touring. There is a substantial amount of land suitable for winter recreation in the Plumas National Forest and setting aside some areas for clean and quiet winter recreation does not need to significantly lessen the opportunities for motorized recreation. As described in our March 7, 2012, letter, there is a substantial opportunity for meaningful increase in tourism dollars in Plumas County by providing good recreational opportunity for users desiring a clean and quiet recreation experience. The nonmotorized area set aside on the west side of Lake Davis as shown in the recent map circulated by the Forest Service would serve this

objective well, in addition to providing important protection for wildlife and riparian areas. These concerns will be under increasing strain due to the demonstrated climate change in the Sierra and increasing recreational use. Although there was general hostility to this proposal by the attendees at the meeting, we believe the broader base of users (and taxpayers) is more receptive to this proposal and we urge that such nonmotorized area be preserved. To the extent it is reduced in size, there is increased need and appropriateness in designating as other nonmotorized areas in the vicinity with comparable recreation potential. In order for skiers and snowshoers to be attracted to the area (at least that majority who do not desire to recreate together with snowmobiles), these nonmotorized areas need to be sufficiently large to truly provide separation from snowmobiles - which can be extremely noisy. We urge the Plumas National Forest to adopt such nonmotorized area, or an area of at least comparable size that provides comparable recreation opportunity, in the best interest of wildlife, the economic health of the community, and the largest number of recreational users that may be attracted to and use the Plumas National Forest. In addition, creation of nonmotorized staging areas are very important to many users due to the noise, smell and quantity of carbon monoxide (which substantially impacts one's health and aerobic performance) released by snowmobiles. We urge the Plumas National Forest to designate a nonmotorized staging area, which can be expended as additional skier and snowshoer tourism develops. We appreciate that the Plumas National Forest has reached out to users and the community to solicit public input in its forward-looking planning process. We were surprised by the depth of antagonism to the Forest Service demonstrated at last week's meeting. (It is odd that one consequence of outreach is outrage!) Our members appreciate how their lives and health have greatly benefitted from federal oversight and management in the last 50 years... including much cleaner air, much cleaner water, the revival of major wildlife species that had been nearly pushed to extinction and the revival of the Sierra Nevada forests following nearly a century of unmanaged and, by modern standards, irresponsible use. Management oversight and restrictions are critical to preserving and enhancing our lifestyles in the modern, highly populated age, and, of course, everyone opposed restrictions that impact themselves (while considering restrictions that impact others to be relatively inconsequential.) Snowlands Network appreciates the opportunity to help the Plumas National Forest create decent ski and snowshoe opportunities that will provide significant tourism benefits to the community

8/9/2012	D Rig	Please do anything and everything to limit these "noise machines" at the lake....there are literally miles and miles for these individuals to ride their machines WITHOUT disturbing the local residents at the lake....you can hear these things for miles in the mountains.... If we don't do something to curb these people there will be no peace and quiet at the lake EVER.... All summer long it is those obnoxious 4 wheelers and motorcycles....these people just aren't happy unless they are making noise....for them to equate individuals on cross country skies and hikers to snowmobilers is Ludacris....Eagles, Osprey etc tolerate hikers, and skiers....loud gas engines not so much.... Please give us some peace and quiet up here at the lake....
8/21/2012	Dolly Chapman	Considering that the USFS is directed to manage lands for 'multiple use' I think that it is entirely reasonable to set aside some areas where skiers and snowshoers can enjoy quiet recreation and where the needs of wildlife are put ahead of the needs of motorized recreation. There are very few lakeshores (outside of wilderness) where skiers and snowshoers can enjoy level terrain without the noise and crowding and activity of snowmobilers. It would be really nice if one side of Lake Davis was set aside for that. I realize that motorized recreationists make more noise than human powered recreationists - in their recreation as well as in meetings, but that does not mean they are more important or in the majority. Quiet, human powered recreation is possible for a much greater percentage of our population than motorized recreation. Snowmobiles, fuel, ect, are prohibitively expensive for many families. It only seems fair to provide some areas where they can enjoy quiet recreation. Grooming of trails for snowmobiles allows them to travel at much higher speeds than if they were on ungroomed snow. Faster travel means they take up more space (and have more serious accidents). I don't think that the USFS has any obligation to facilitate higher speed recreation. Our public lands can be enjoyed just as much at slower speeds. Grooming programs are problematic in our area due to inconsistent snowfall (ie.. you contract for services and then hope it snows, or your contract ends and the snow continues.). Thanks for taking my comments and please put me on any lists that will allow further comment or notify me of upcoming meetings.
11/9/2012	Corky Lazzarino	I'm getting a lot of people asking me about the Lake Davis OHV project lately. People on both sides of the issue. Has the district decided how to proceed yet? I know the last meeting had a lot of people wanting to stop the grooming. Everyone is entitled to their opinion, but I hope the economic aspect is considered too. If the winter portion of the project is cancelled, I hope the summer portion moves forward.

	Jack Bridge	Economic commercial and market recreation, lodging for overnight stay accommodations for not only Portola, for Graeagle, Blairsden are also important. Areas that accommodate overnight stays, restaurants and groceries. Avoid concentration of people in one area.
	General Comment	Mallard Cove is where the County stops plowing, used as a location for winter fishing, look at commercial opportunities, MC too small for staging, parking needs to be large enough to turn trailer around. Plowed out for boat parking.
	General Comment	3 separate staging areas: 1) Intersection of West Road and Lake Davis (where timber sale occurred) 2) Mallard Cove 3) Store? Dam? – groomer would have a hard time at dam for staging. If connection proposal #1 with #2- keep staging at all the locations, Willow Creek Road, Jackson Creek and Lake Davis.
	General Comment	2 different maps one summer, one winter.
	Delaine Fragnoli	Non-motorized recreationist, continue with LD trail non-motorized for winter.
	Terry Harper- State of California State Grooming Coordinator	Not possible to buy an additional groomer in the next 3 years. 260,00K for a snow cat, through grants program club can request groomer, RTP- Terry Harper will check to see if environmental work was accomplish at Lake Davis (CEQA). Development and use of new groomed trail systems under the OSV Program would be subject to future environmental review and approval under NEPA for the USFS and CEQA for the OHMVR Division. Potential impacts to wilderness associated with the new trail systems would. Be evaluated at such time as the projects are actually proposed.
	Graeagle Plumas Alliance	Wants Lake Davis area to be groomed, have a staging area at southern end of the lake. Not to develop Mallard Cove as a staging area.
	General Comment	Even/odd days for different user groups.
	Terry Swafford	There is no issue regarding the eagles at Eagle Lake.
	Resident	Concerned that this restriction will lead to other restrictions.
	Don Fowler Recreation resident at Layman Bar Resort	Interested in reviving the Jackson Creek Campground and the Jackson Creek Trail along the Middle Fork of the Feather River.













	Kathleen Baynes	Good planning to accommodate everyone. Summer suggestions - 2 alternative hiking trails to Smith Peak, 24N07 - 3.7 miles. 23N84Y - Start on road on West Street, south side of Smith Peak, 23N84Y does not go to top, Kathleen would like the trail to continue to the top. Crocker - Mapes Canyon. Kayaking Travel. Winter Suggestions: X-Country skiing and hiking on west shore. Cherry Valley back to Beckwourth on bikes. Would like the opportunity to hike (backpack) around the lake.
	Bill Cochran Department of Water Resources	Shared concern with the Forest Service with assuming the risk of encouraging snowmobile traffic across Lake Davis. Supports a quiet side and a noisy side.



Stock Photo of an OSV Recreation Event

# Appendix B OSV Opportunities Marked Trails and Staging Areas Beckwourth RD

-  Project Boundary
-  Marked OSV Trails
-  1 Roads Open to All Vehicles, Yearlong
-  3 Roads Open to Highway Legal Vehicles Only, Yearlong
-  11 Special Designation, Yearlong
-  14 State or US Highway
-  15 Other Public Roads
-  Closed to Overland OSV/OHV use
-  Staging Areas
-  Beckwourth District Ranger Station

