

# California Cooperative Forest Management Plan

Donner Property Tree Farm

John J. & Claudia K. McDonagh, Owners.

Truckee, Nevada County, California.

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(Version 10-22-2016)

**Property Name:** McDonagh – Donner Property Tree Farm

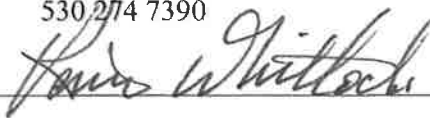
**Property Location Address:** No Site Address

Nevada County APN 17-020-17-000, Portion of the S ½, of the SW ¼, Section 12, T17N, R15E, MDB&M

**Owner Name (s):** John J. & Claudia K. McDonagh  
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Castro Valley, CA. 94546  
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dunchadda@yahoo.com

**Plan Author(s):** Kevin Whitlock, RPF #2436  
Under the Trees – Forestry & Environmental Services  
P.O. Box 363  
Nevada City, CA 95959  
530 274 7390

Signature: \_\_\_\_\_



This management plan outlines the conditions and capability of property resources, documents the landowner's objectives and decisions and identifies potential resource improvement projects. It is meant to be a flexible and educational document that considers a planning horizon of at least 5 years but may include objectives that require a much longer time period.

This management plan template meets management plan requirements for grant agreements and other provisions available through CAL FIRE, NRCS, USFS, and the American Tree Farm Association. Signature Pages are provided to document acceptance of this management plan in meeting those requirements.

This management plan is a tool for and belongs to the landowner. Signatures are only required for that entity providing funding as requested by the landowner.

*This Multi-Agency Cooperative Forest Management Plan was developed for use in California by CAL FIRE, the US Forest Service and Natural Resources Conservation Service using information from a national joint Forest Stewardship, American Tree Farm System, NRCS Planning Process and the California Forest Improvement Act.*



## SIGNATURES AND APPROVALS

This Forest Management Plan is provided as a guide to help you accomplish the objectives that you have for your forest. This Forest Management Plan will guide you in achieving the benefits of managing your forest and forest related resources. With this Forest Management Plan, you are eligible to participate in the California Department of Forestry and Fire Protections California Forest Improvement Program (CFIP), US Forest Service's Forest Stewardship Program (USFS), the American Forest Foundation's American Tree Farm System (ATFS) and The Natural Resources Conservation Service (NRCS) programs. This plan will need to be reviewed and approved by representatives for each of the programs that are providing funding.

I have reviewed this plan and approve its content.

  
Landowner (s)

10/21/16  
Date

### USFS Forest Stewardship Program

I certify that this Forest Management Plan meets the requirements of the federal Forest Stewardship Program.

\_\_\_\_\_  
Plan Preparer

\_\_\_\_\_  
Date

I certify that this Forest Management Plan meets the requirements of the federal Forest Stewardship Program.

\_\_\_\_\_  
Stewardship Forester

\_\_\_\_\_  
Date

Forest Stewardship Tracking Number: \_\_\_\_\_

### NRCS Cost Share Programs including EQIP

I certify that this Forest Management Plan meets the requirements of the USDA-NRCS Programs and/or the Quality Criteria for forest activity plans in Section III of the USDA NRCS Field Office Technical Guide.

\_\_\_\_\_  
Technical Service Provider

\_\_\_\_\_  
Date

\_\_\_\_\_  
RPF Number

I certify that this Forest Management Plan meets the requirements of the USDA-NRCS Programs and/or the Quality Criteria for forest activity plans in Section III of the USDA NRCS Field Office Technical Guide.

\_\_\_\_\_  
District Conservationist

\_\_\_\_\_  
Date

### ATFS Program

I certify that this Forest Management Plan meets the requirements of the American Forest Foundation's American Tree Farm System.

\_\_\_\_\_  
ATFS Inspecting Forester

\_\_\_\_\_  
Date

\_\_\_\_\_  
Number

Certified Tree Farm Number: (e.g. AL 1234) \_\_\_\_\_

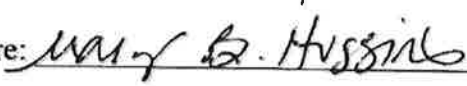
Date of ATFS Certification: \_\_\_\_\_

**CAL FIRE CFIP MANAGEMENT PLAN CERTIFICATION PAGE**

**California Registered Professional Forester (RPF) Certification:** I certify that I, or my supervised designee, personally inspected this California Forest Improvement Program (CFIP) plan area, and that the plan fully complies with the CFIP and Professional Foresters Law, and meets Federal Forest Stewardship Management Plan Standards. I further certify that this plan is based upon the best available site and landowner information, and if followed, will not be detrimental to the productivity of the natural resources associated with this property.

Name (print or type): Kevin WhiflockSignature: Date: 11/1/16Organization or Company: Under the Trees (UTT)Address: P.O. Box 363, Nevada City, CA 95959Phone: 530 274 7390RPF#: 2436

**CAL FIRE Unit Certification:** I certify that I, or my supervised designee, personally inspected this California Forest Improvement Program (CFIP) plan area, and that the plan fully complies with the CFIP and Professional Foresters Law, and meets Federal Forest Stewardship Management Plan Standards.

Name (print or type): MARY B. HUGGINS, RPF #2507Signature: Date: Nov. 4, 2016**California Department of Forestry and Fire Protection**Unit: Sacramento HQ's FAS for NEUAddress: P.O. BOX 941244  
SACRAMENTO, CA 94244-2460

**CAL FIRE STATE OR REGION CFIP COORDINATOR:** I certify that the plan fully complies with the CFIP and Professional Foresters Law, and meets Federal Forest Stewardship Management Plan Standards.

Name (print or type): Stewart McMoranRPF#: 2878Signature: Date: 11/15/16

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## Landowner Information

**Landowner(s):** John J. & Claudia K. McDonagh

**Mailing:** 5057 August Court, Castro Valley, CA. 94546

**Phone:** (707)567-5246

**E-Mail:** [dunchadda@yahoo.com](mailto:dunchadda@yahoo.com)

**Landowner's Representative (if applicable):** NA

**RPF# (if applicable):** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**Phone:** \_\_\_\_\_ **E-Mail:** \_\_\_\_\_

## Management Plan History

**Does a Management Plan exist for this property?** Yes \_\_\_\_\_ No X

**If Yes:**

**Type of Plan: (CFIP, EQIP, NTMP, FSP, CAP, Other):**

**Date of Original Plan Completion:**

**Revision Dates:**

## PROPERTY FACTS

### Legal Property Description:

Portion of the S ½, of the SW ¼, Section 12, T17N, R15E, MDB&M

**Nearest City or Town:** Truckee

**County:** Nevada

**Assessor's Parcel Number:** 17-020-17-000

**GPS Coordinates:** 39°19'52.493"N, 120°16'5.921"W

**Total ownership acreage:** 70.35

<b>Total forested acreage:</b>	Sierra mixed Conifer	30.3 Ac.
	Eastside Pine	20.4 Ac.
	Montane Chaparral	19.1 Ac.
	Freeway Cut-bank	.5 Ac.
	<b>Total</b>	<b>50.7 Ac</b>

**Does Landowner reside on the property?** No

## Description of the Property:

The property borders to the south, Interstate 80; to the west, private holdings including Truckee-Donner Land Trust; to the north, the Tahoe-Donner Subdivision and to the east, US Forest Service. Access to the property is by private road via Billie Mack Road, via Donner Lake Road, Interstate 80. The elevation of the project area ranges from 6240' to 6920'. The south facing slope overlooks Donner Lake. Slopes ranging from 10% to 55%, averaging 25% to 35%. [See Appendix 1, Maps, Map 1.1 Property Location, Map 1.2 Parcel Map]

Estimate percent of total acreage that is:

**Percent of Land:** Flat (<5% grade) 4% Gentle (< 20% grade) 31% Steep (> 35% grade) 65%

**Transportation System:** Vehicle Access (check): Poor (1% accessible)

**Estimated improved road length (rock surface):** NA

**Estimated unimproved road length:** Less than ½ mile

## Calwater 2.2 planning watershed:

Name & Number	Acres
Donner Lake 8635.200201	9,527

**Is there a 303d listing on watershed?:** Yes

**what are the factors?:** Arsenic, Chlordane, PCBs (Polychlorinated biphenyls) (tissue)

## PROPERTY HISTORY

In March 2013, the 50% of land was purchased. In May 2015, the landowner assumed full ownership after the remaining half of the property was purchased.

The west half of the property burned in the 1960 Donner Ridge fire. The northwest corner of the property was burned again in the 2003 Donner fire. In 2007, the Eighty fire burned 1000 feet to the west burning into the 2003 Donner fire burn area.

The property was approved for Timber Harvest, July 18, 2002, THP # 2-02-242 NEV. Operations were completed on September 30, 2005. The RPF that prepared the THP was. Mark Stewart, RPF #2308.

Of the 70.35 acres in ownership only 50 acres had harvest operations and the remaining 20.35 were "out" areas. The Silvicultural methods were, 41 acres Selection and 9 acres Transition. The forest products harvested were saw-logs, firewood and biomass. [See Appendix 1, Maps, Map 2.1]

## CURRENT PROPERTY CONDITIONS

### Property Infrastructure:

The property borders to the south, Interstate 80; to the west, private holdings including Truckee-Donner Land Trust; to the north, the Tahoe-Donner Subdivision and to the east, US Forest Service. Access to the property is by private road via Billie Mack Road, via Donner Lake Road, Interstate 80. The property infrastructure is limited. There is one access road leading to the west side of the parcel.

The property corner markers exist and have been identified on the grounds.

### Forest Infrastructure:

The California Wildlife Habitat Relationships (CWHR) is a state-of-the-art information system for California's wildlife. The CWHR classifies existing vegetation types important to wildlife. This system was developed to recognize and logically categorize major vegetative complexes at a scale sufficient to predict wildlife-habitat relationships.

The California Wildlife Habitat Relationships (CWHR) system identifies three (3) habitat types [See **Appendix 1, Maps, Map 2.2 Land Cover/Vegetation Cover**] of both upland plant associations dominated by Sierra Mixed Conifer (SMC), Eastside Pine (EPN), and Montane Chaparral (MCP).

Relatively uniform vegetation types may contain habitat patches within them that are highly unique in terms of life form (e.g. a small wet meadow within a conifer stand) or structure (e.g. large trees with uneven structure and downed woody debris within a stand of otherwise small trees and even structure).

Site potential can be classified either qualitatively, by their climate, soil, and vegetation into different site types or quantitatively, by their potential wood production. Site Productivity Class is best described as a species-specific classification of forest land in terms of inherent capacity to grow crops of trees and is usually derived from site index.

Site index is based on measuring the height and deriving the age of dominant and co-dominant trees in the forest stand, and relating this to a standard base age, for example fifty (50) years. Site class, usually numbered in Roman numerals from I (best) to V (worst) is a grouping of site indexes used when the California Forest Practice Rules apply to commercial timber-harvesting operations.

Site Index is determined by measuring tree heights and using increment borings of dominant trees to determine tree age, and the use of *Research Note No. 28, A Site Classification for Mixed Conifer Selection Forests of the Sierra Nevada 1942*, Duncan Dunning.

Per Title 14 California Code of Regulations, 1060 - Site Classification, site information suggests that the project areas conifer habitat types; Sierra Mixed Conifer (SMC), Eastside Pine (EPN), consist of Site Index II/III timberland with growth ranging from 250 to 385 bd. ft. per acre per year. The Montane Chaparral (MCP) contains areas of isolated conifers at low basal area with a Site Index IV/V. It is well known that Montane Chaparral (MCP) becomes established in disturbed coniferous habits such as Eastside pine (EPN). It is possible to treat the Montane Chaparral (MCP) areas to increase conifer stocking with the goal of transitioning into an Eastside pine (EPN) vegetation type.



## Timber / Vegetation Habitat Types:

The property was stratified by the CWHR vegetation habitat types. The types are a complex mosaic of species mixes, and productivity classes, grouped by a set of “membership rules.” Two broad conifer groupings are identified as Sierran Mixed Conifer (**SMC**) (30.3 acres), Eastside pine (**EPN**) (20.4 acres) and one shrub group identified as Montane Chaparral (**MCP**) (19.15 acres).

The Sierra Mixed Conifer (**SMC**) habitat type is approximately thirty-three (30.3) acres. The species composition is primarily made up of Jeffrey pine with equal amounts of White fir.

In general, the timber type associated with the SMC habitat type is approximately 100+ years-old, with pockets of dense, white fir in the understory. In many areas, overstocking of the understory is stress the stand and predisposing it to bark beetle attack. Reduction of stocking in the understory would improve the overall health and reduce the possibility of a crown fire, as interlaced crowns provide a continuous elevated fuel bed through which a fire can spread.

Current stand density ranges from 30 sq. ft. of basal area per acre in the openings to 380 sq. ft. of basal area per acre in the thickest stands. Diameters range from less than 3 inches’ diameter breast height (**dbh**) suppressed individuals to over 36+ inch dominants with an estimated quadratic mean diameter (**QMD**) of 10 inches and a canopy closure ranging from 40 to 60 percent.

Tree mortality is occurring; snag density is approximately 15+ trees per acre, and has directly contribute to a buildup of forest fuels. Duff layers are deep and extensive (4 to 6 inches) and could support a tree-killing ground fire. The fuel load is heavy in places at an estimated over 20 tons per acre.

The understory is made up of snow brush, green-leaf manzanita, bitter cherry, mountain whitethorn, gooseberry, and wax current. Grasses and forbs associated with this type include mountain brome, Carex, bull thistle, iris, and needle-grass. In all, over 100 species of grasses, forbs and shrubs contribute to the typical flora of the mixed conifer habitat.<sup>1</sup>

Although typically of minor importance, a shrub understory may include Parry manzanita, squaw currant, purple mountain heather, and big sagebrush. Willows, western huckleberry, California huckleberry, Sierra bilberry, and alpine laurel occur on moist sites. Western wheatgrass, California brome, several species of lupines, and a variety of flowering annuals are common in the sparse ground cover.<sup>2</sup>

The Eastside Pine (**EPN**) habitat type is approximately twenty-one (20.4) acres. Jeffrey pine is the dominant tree with less representation by Ponderosa pine, white fir, and Incense Cedar. Open tree stands generally support more vigorous brush which prevents additional tree regeneration. In general, the habitat types associated with the EPN include Jeffery Pine (**JPN**) and Montane Chaparral (**MCP**). The timber type stands are moderately slow growing and are approximately 130-years-old, with pockets of dense, over-stocked pure stands. Current stand density ranges from 20 sq.

<sup>1</sup> <http://www.dfg.ca.gov/biogeodata/cwhr/pdfs/SMC.pdf>, California Wildlife Habitat Relationships System California Department of Fish and Game, Sierran Mixed Conifer, Barbara H. Allen

<sup>2</sup> <http://www.dfg.ca.gov/biogeodata/cwhr/pdfs/SMC.pdf>, California Wildlife Habitat Relationships System California Department of Fish and Game, Red fir, White fir, and Sub-alpine fir.

ft. of basal area per acre in the openings to 220 sq. ft. of basal area per acre in the thickest stands. Diameters range from less than 6 inches' diameter breast height (**dbh**) suppressed individuals to over 46+ inch dominants with an estimated quadratic mean diameter (**QMD**) of 10 inches and a canopy closure ranging from 40 to 60 percent.

The following understory are included in the eastside pine communities: western juniper, manzanita, several species of ceanothus, big sagebrush, antelope bitterbrush, grass dominance and forb dominance.

Eastside pine is bounded at the lower edge by sagebrush, bitterbrush, and annual grassland. These stands often form important migratory and winter range for deer. Higher elevation stands with grassy understories near water may be extremely important deer fawning areas and migratory holding areas.

The Montane Chaparral (**MCP**) species composition changes with elevation and geographical range, soil type and aspect. Species that usually characterize MCP communities include whitethorn ceanothus, snowbrush ceanothus, greenleaf manzanita, pinemat manzanita, and sierra chinquapin.

Montane Chaparral (**MCP**) occurs on poorer, shallow soils often forming an edaphic climax community or on deeper soils flowing disturbance such as logging or fire (1960 Donner Ridge, and 2003 Donner fires). Silvicultural practices can have a strong influence on the structure of montane chaparral as the species may senesce due to insufficient light through canopy. Most montane chaparral species are fire adapted. Mature plants sprout back from the root crown. Some species require scarification of the seed for germination and may produce numerous seedlings after a fire or logging.

Some Jeffery pine and Red fir have made it up through the brush. These individual trees are slow growing. Current stand density within the (**MCP**) ranges from 0 sq. ft. of basal area per acre in the openings to 80 sq. ft.

## **Fire Model:**

Predicting the potential behavior and effects of wildland fires is an essential task in fire management. Mathematical surface fire behavior and fire effects models and prediction systems are driven in part by fuel-bed inputs such as fuel load, bulk density, fuel particle size, slope, elevation, aspect, cover type, heat content, and moisture of extinction. To facilitate use in models and systems, fuel-bed inputs have been formulated into fuel models. A fuel model is a set of fuel-bed inputs needed by a particular fire behavior or fire effects model. Different kinds of fuel models are used in fire science.<sup>3</sup>

Fires will burn in the surface and ground fuels with greater intensity than the other timber litter models. Dead-down fuels include greater quantities of 3-inch or larger limb-wood resulting from over-maturity or natural events that create a large load of dead material on the forest floor. Crowning out, spotting, and torching of individual trees is more frequent in this fuel model. The rate of spread and flame length are moderate.

<sup>3</sup> Scott, Joe H.; Burgan, Robert E. 2005. Standard fire behavior fuel models: a comprehensive set for use with Rothermel's surface fire spread model. Gen. Tech. Rep. RMRS-GTR-153. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 72 p.

In general, fuel models are grouped into types. The property supports a National Fire Danger Rating System fuel model G.

Fuel Model G is used for conifer stands where there is a heavy accumulation of litter and downed woody material. Such stands typically show signs of insect, disease, wind, or ice damage -- natural events that create a very heavy buildup of dead material on the forest floor. In this case, the heavy accumulation of downed woody material is mainly attributed to past timber harvest.

## Inventory:

UTT conducted a study of the property and compiled into a Geographic Information System (GIS) all available base maps and imagery to construct a comprehensive geographic database of the property. Using the database, UTT analysed the land cover of the property, and used the CWHR system to stratify the property into vegetation types.

UTT cruised the timber using the variable plot method, with a 1/100<sup>th</sup> acre reforestation plot nested at plot center. Plot attributes and tree detail information measured and recorded in the field was entered into FS Cruiser program, a timber cruising field data collection software for the U.S. Forest Service's National Cruise System, to precipitate the species and volume information.

Property (ac)	Plots (n)	Tree Records	Site Index
SMC – 30.3	10.0	138	II/III
EPN - 20.4	8.0	110	II/III
<u>MCP - 19.1</u>	<u>3.0</u>	<u>16</u>	IV/V
Total 69.8	21.0	264	

**Table 1 – Summary Statistics (51 Acres – SMC and EPN combined)**

	Item	SE	Range
TPA (trees per acre)	396	15.6	187 – 463
BA (ft <sup>2</sup> /ac)	269	47.9	142 – 383
QMD (inches)	10.3	n/a	9.5 – 12.6
Gross Volume (bf/ac)	13,202	2,640	4,020 – 18,803
growth (bf/ac/yr)	360	n/a	222 - 419

SE = standard error; bf = conifer volume in board-feet to an 8-inch top.

## Soils:

Soils across the property generally reflect the underlying geologic units from which they have developed. Much of the uplands and steeper slopes include soils derived from volcanic tuffs and mudflows.

Soils on the property are Meiss, and Waca soil series. Erosion hazard ratings for forested soils are moderate to high in this area. Vegetative cover and non-disturbance of surface appears to be the main features keeping natural erosion levels low. When vegetative cover is removed by fire, road

building, timber harvesting, etc., mitigation measures are needed to reduce the potential impacts. Soil Types on Property (1994 Tahoe National Forest Soil Survey) [See Appendix 1, Maps, Map 2.4 Soils]

## Meiss:

The Meiss series (**MIG3**) consist of shallow, somewhat excessively drained soils on mountainsides. These soils formed in residuum weathered from andesitic rock. Slope ranges from 2 to 75 percent. The vegetation is mainly grasses, forbs, and scattered conifers, consisting of squirrel-tail, wyethia, and red fir. Permeability is moderately rapid. Available water capacity is very low, runoff is rapid to very rapid, and the erosion potential is **high**. Depth to bedrock ranges from 12-20 inches. Rock fragments range from 5-35 percent.

## Waca:

The Waca series (**WDF**) consists of moderately deep, well drained soils on mountainsides. These soils formed in residuum weathered from andesitic mudflows and rhyolitic tuff. Slope ranges from 2 to 75 percent. The vegetation is mainly semi-dense to dense stands of high elevation mixed conifers consisting of Jeffrey pine, white fir, sugar pine, and western white pine in stands of red fir. Permeability is moderately rapid. Available water capacity is low, runoff is medium to rapid, and the erosion potential is **moderate to high**.

## Streams, Wetlands, and Ponds:

There are several small Class II and III watercourses and associate springs and seeps on the property. Erosion and watercourse channel-forming processes can be framed in terms of a simple geomorphic construct based on spatial patterns of sediment production, transport, and deposition. It is also important to recognize that these zones are not static, and watercourse channels may change in a particular location following large floods, fires, or during extreme droughts. Headwater areas are characterized by steep slopes and confined hollows where hillslope processes are dominant. Channels initiate in these areas where slope, soil type, and contributing watershed area combine to generate sufficient runoff. As watershed area increases, channel enlargement may begin to occur laterally and vertically with fluctuating sediment production and limited sediment storage.

In general, the channels are 1 to 4 meters wide, 1 to 2 meters deep with moderate amounts of medium sized cobbles and very little gravel or fine gavel within in the pools. In areas where the stream gradients decrease, riffle and pooling in direct correlation with large woody debris can be found. These areas have maintained the structural complexity and provide adequate/good aquatic habitat. [See Appendix 1, Maps, All]

Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction CDFW's under Sections 1600-1607 of the State Fish and Game Code. Substantial alterations to the bed, bank, or channel of a stream, river, or lake generally require a Lake and Streambed Alteration Agreement. The term stream, which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as follows: "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (14 CCR 1.72). In

addition, the term stream can include ephemeral drainages, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance, if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife. Riparian is described as, “on, or pertaining to, the banks of a stream”; therefore, riparian vegetation is defined as, “vegetation which occurs in or adjacent to a stream, is dependent on, and occurs because of, the stream itself”. Alterations to a drainage with a bed and bank may require a Lake and Streambed Alteration Agreement from CDFW.

## **Springs & Seeps:**

Numerous small springs and seeps exist on the property, usually adjacent to the existing watercourses. Springs provide an important source of perennial flow to several watercourses. The locations of springs and seeps often tend to correspond with contacts between different volcanic units, and along fault and fracture traces.

## **Roads:**

Access to the property is by private, gated road via Billie Mack Road, via Donner Lake Road, Interstate 80. There is one road leading to the southwest corner of the parcel. The road is not plowed during winter. Vehicle access to the property does not occur until sometime in April/May. [See **Appendix 1, Maps, Map 1.1 Property Location**] Road access to the property could be improved by upgrading the existing skid trail system.

## **Recreation:**

The property offers recreational opportunities to the owner. Recreation by the general public is not a use of the property; it is not encouraged, and is prohibited. There are no intentions to develop the property for any addition recreational uses or opening it up to the general public.

## **Geology:**

The underlying geology of the watershed is dominated by the dynamic period of volcanic activity that occurred during the Tertiary period, between 5 and 24 million years ago. The volcanic deposits tend to be highly erosive, and include tuffs (volcanic ash deposits), volcanic mudflows, and andesitic rocks. These materials are subject to debris flows and other forms of erosion, and can provide abundant coarse and fine sediment to streams. Related tectonic deformation and faulting is likely responsible for the basic location of many first-order stream courses, where seeps and springs support low flows and wetland or riparian habitat.

## **Air Resources**

The debris disposal from the fuels reduction activities, include but are not limited to: (1) on-site reutilization of chips, shreds, limbs and branches redistributed over the landscape; (2) chips, shreds, limbs and branches removed from the site and transported to another site; or (3) debris burning.

The Northern Sierra Air Quality Management District (**NSAQMD**) issues burn permits for the purposes of regulating particulate matter release amounts. Burn permits are issued for commercial burning operations, such as agricultural burns or slash burns for timber operations. Residential debris burning does not require a burn permit from NSAQMD but does require a burn permit from CAL

**FIRE.** Debris burning is limited to dry, woody, natural vegetation that can be burned within the permissible burn day and with limited smoke production.

## **Threatened or Endangered Species - plants or animals:**

Special-status plants and animals are species that are legally protected under the State and Federal Endangered Species Acts, and other regulations, and species that are considered rare by the scientific community. They are defined as:

- Plants and animals that are listed or proposed for listing as Threatened or Endangered under the California Endangered Species Act (Fish and Game Code 1995 §2050 et seq., 14 CCR §670.1 et seq.) and/or the Federal Endangered Species Act (50 CFR 17.12 for plants, 50 CFR 17.11 for animals; and various notices in the Federal Register for proposed species).
- Plants and animals that are Candidates for possible future listing as Threatened or Endangered under the Federal Endangered Species Act (50 CFR 17.12 for plants, 59 FR 58982 November 15, 1994 for animals).
- Plants and animals that are considered Federal Species of Concern (formerly C2 candidate species).
- Plants and animals that meet the definition of rare or endangered under CEQA (14 CCR§15380), which includes species not found on State or Federal Endangered Species lists.
- Animals that are designated as "Species of Special Concern" by CDFW (1999).
- Animal species that are "fully protected" in California (Fish and Game Code, §3511, §4700, §5050 and §5515).

Special-status plant species also include species on CNPS Inventory List 1A (presumed extinct in California), List 1B (plants rare, threatened, or endangered in California and elsewhere), or List 2 (plants rare, threatened, or endangered in California, but more common elsewhere). These species fall within state regulatory authority under the provisions of the California Environmental Quality Act (CEQA) Guidelines. CNPS Inventory List 3 (plants about which more information is needed, a review list) and List 4 (plants of limited distribution, a watch list) are considered to be of lower sensitivity, and generally do not fall under specific state or federal regulatory authority. Specific mitigation considerations are generally required for species with federal or state protection or that are in List 1 and 2 categories.

Sensitive plant communities include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife (CDFW). CDFW ranks sensitive communities as 'threatened' or 'very threatened' and keeps records of their occurrences in its Natural Diversity Database. Also, CNDDDB vegetation alliances are ranked 1 through 5. Alliances ranked globally (G) or statewide (S) as 1 through 3 are considered sensitive (Sawyer, et.al. 2009). Impacts to sensitive natural communities identified in local or regional plans, policies, regulations, or by CDFW or U.S. Fish and Wildlife Service (USFW) must be considered and evaluated under CEQA.

Sensitive habitats include areas that fulfill special functions or have special values, such as wetlands, streams, and riparian habitat. These habitats are regulated under federal regulations (i.e. the Clean Water Act), state regulations (such as the Porter-Cologne Act, California Department of Fish and Wildlife's Streambed Alteration Program), and local ordinances or policies.

A California Natural Diversity Database (CNDDDB) search was conducted for occurrences near and adjacent to the property. A nine-quadrangle search of the CNDDDB analyzed the potential for special-status species. The occurrences have been recorded in the California Natural Diversity Database and provided in **Appendix 2 Biological**.

## **LANDOWNER MANAGEMENT OBJECTIVES**

The landowner's objectives are protecting, enhancing and maintaining forest productivity, wildlife habitat, stream and watershed conditions and visual qualities as part of recreation.

Future projects will enhance the forest resources by improving forest health and reduce wildland fuel loads that pose a significant threat to watershed resources and water quality.

In support of the objectives, soil, water, and forest ecosystem quality and productivity will be enhanced through land stewardship practices. These practices will be designed to restore and/or maintain the vitality, structure, and functioning of the natural processes of the forest ecosystem and its components where needed, to enhance the conditions and functions that support biodiversity, and to restore and/or maintain the aesthetic quality of the property. General objectives in support of this are:

- fire hazard reduction,
- forest management for growth and sustained yield of wood products,
- protection of water quality and quantity, including aquatic and riparian habitat,
- protection of soil fertility, productivity, and stability,
- maintenance of a natural balance and diversity of native species for the purpose of long-term ecosystem health,
- control of soil erosion through careful project planning, drainage control, and planting for soil stabilization,
- and protection of the aesthetic quality of the property

### **Fire protection objectives:**

In 1996, the Sierra Nevada Ecosystem Project reported that the medium return interval for naturally occurring fires in pre-historic times, depending upon the vegetation type, ranged from 8-30 years. Most historical accounts and early day photographs indicated that forests prior to the 1850's, were much more open, with less brush and fewer smaller trees. With the advent of complete fire suppression efforts by the early 1900s, the abundance of intermediate size trees and brush increased to fill the spaces between the mature overstory trees.

Most of the property occupies an area that would be difficult to access by standard firefighting equipment and personnel. Although only 1 air mile south of Tahoe Donner subdivision, the vehicle access to the property is by way of a poorly maintained road.

## Areas of Risk:

- 1 The major area of concern is adjacent to the freeway where the general public travels.
- 2 The remainder of the forest, both on and adjacent to the property as a risk for naturally occurring fires, and even human caused fires from unauthorized campsites and use of firearms by hunters in the fall when the fire risk is generally the highest.

## FOREST MANAGEMENT UNIT INFORMATION

### Objectives:

The harvesting of trees is for the purpose of reducing the potential of damage from wildfire, pests and moisture stress; restore natural plant communities; achieve a desired understory plant community; improve aesthetics and open space values; improve wildlife habitat; and achieve a desired level of shrub density.

Future projects include are out lined below. [See Appendix 1, Maps, Map 3.1 Future Projects]

### **Project 1 – Release/Understory Fuels and Slash Disposal (14 Acres)**

This project has three objectives;

1. Treat the heavy accumulation of downed woody material mainly attributed to past timber harvesting.
2. Treat areas of overstocked understory that are reasonably accessible given the limited access.
3. Improve road access by upgrading existing skid trails

### **Project 2 – Release/Site Preparation and Planting (10 Acres)**

This project object is to treat the edge of the Montane Chaparral (**MCP**) areas to increase conifer stocking with the goal of transitioning the Montane Chaparral (**MCP**) into an Eastside pine (**EPN**) vegetation type.

The Montane Chaparral (**MCP**) areas is currently under stocked with commercial conifer species and the property is not realizing its full potential. Release/Site Preparation and tree planting is necessary to supplement natural regeneration.

The purpose of the Release/Site Preparation is to: 1) to clear away logging slash and vegetation and create enough spots to plant seedlings if they are to be hand-planted; 2) to incorporate organic matter into the soil; and 3) to reduce the levels of unwanted brush and weeds which will compete with tree seedlings for water, light, and nutrients.



## MANAGEMENT ACTIVITY DECISIONS, SCHEDULE AND TRACKING

Mgmt. Unit	Acres/feet	NRCS Practice Code (optional)	Treatment Activity Short Description	Dates		Cost Share Used? Type?	Net Cash Flow	
				Planned	Completed		Cost	Income
Project 1	14		Release/Understory fuels and Slash Disposal	2017		CFIP		
Project 2	12		Release/Site Preparation and Planting	2018		CFIP		

## PLANNED MANAGEMENT ACTIVITIES AND REQUIRED PERMITS

### Management recommendations:

While this plan is intended to be relevant for a ten-year period, it is important to recognize that natural resource management is a dynamic process and will require adjustments and updates as time progresses. This may be due to changes in environmental conditions such as insect infestations, fire, snowstorms, and/or drought. By implementing the specified recommendations in a timely manner, and conducting evaluations of your progress at yearly intervals, you can avoid the expense of developing a new plan every ten years.

The resulting stewardship recommendations are generally based on the premise that the relative ecological quality and/or sensitivity of an area will dictate what long-term land uses are most appropriate. When suitable land uses have been identified then appropriate stewardship practices can be designed to achieve your specified objectives.

- Conduct Forest Stand Improvement practices such as release, slash disposal and planting in the targeted areas.
- Maintenance measures should be implemented on project areas at least once every 3 years (or as necessary) to maintain the desired end-state conditions.
- When necessary, re-mark all property boundaries.
- Every year you evaluate the progress of your Forest Management Plan implementation and revise the plan as needed.
- Landowners should employ Best Management Practices (BMPs) to minimize soil erosion and water pollution. These BMPs include recommendations for runoff diversion structures for forest roads and skid trails, streamside buffer zones, contour operations, and regeneration activities.

### Harvest Documents:

Most commercial biomass removal activities need a CAL FIRE permit or other entity permit. Identify needed or current Cal Fire THP, NTMP and/or Categorical Exclusion for proposed timber management activities. Other agency permits may be necessary for proposed management activities related to other types of conservation projects such as but not limited to water drafting, ponds, road maintenance, crossing replacements and dust control.

The landowners are familiar with the States and Federal requirements regarding the Timber Harvest Plan process and vegetation management.

### Release / Understory Fuels:

This practice involves removal of non-commercial tree species, shrubs/brush or grasses that are competing with existing commercial tree species. This practice also reduces the potential of damage from wildfire, pests and moisture stress; restore natural plant communities; achieves a desired understory plant community; improves aesthetics and open space values; and improves wildlife.

Release operations can take place throughout the year, except under the following conditions:

(a) Weather predictions indicate a hazardous fire condition warranting curtailment of operations. (b) When ground conditions are such that machine operations could cause resource damage. (c) When the forester determines that adverse weather has made access or project production too dangerous or that continued vehicular travel would cause unacceptable road damage.

A release treatment can be accomplished by mechanical mastication, brush raking, pushing with a bulldozer, and/or hand cutting. The primary objective for this treatment is to release the healthy commercial species from the competing brush. The increased health of the residual stand will improve forest resource protection. In addition, by removing these surface and latter fuels, the potential for catastrophic fire and watershed damage will be decreased.

## **Slash Disposal:**

Mastication, piling and burning, and/or chipping the material should treat slash created from fuel reduction activities. Resulting material from mastication or chipping should be left on-site to provide ground cover. The objective of the treatment is to treat the existing and resulting slash from the release treatment to reduce the potential fire hazard.

Slash is the woody debris (residue) of cut trees, pruning, and brush left after release treatments. A minimum of 95% of the entire work area should be treated by this method to effectively reduce the fuel hazard.

Pine slash created as a result of fuel reduction work should be lopped within 1 week of its creation. All branches and stems 3 inches in diameter and larger should be lopped into segments no longer than 4 feet. The potential brood material should then be left scattered on the ground so the material will be exposed to maximum solar radiation. The material should not be piled until the wood beneath the cambium layer is dry to a depth of at least ¼ inch. In areas receiving treatment by mastication, treatment of pine slash is not a concern.

Piling of slash should be done no more than 45 days after its creation or as soon thereafter as drying of pine slash, as described above, allows. Subsequent burning is to occur as described below. In areas receiving treatment by mastication, piling of slash is not a concern.

Hand or tractor piles areas to be burned during the winter period. The piles and concentrations should be allowed ample time for sufficient drying, and should be burned during the first wet fall or winter weather or other safe period following piling and according to applicable laws and regulations. Burning should be as complete as possible to allow ease of movement for other follow-up work. Piles and concentrations that fail to burn sufficiently to remove the fire hazard should be further treated to eliminate that hazard.

Following initial treatment of brush, some re-growth, re-sprouting, or reoccurrence should be expected. Maintenance following initial treatment must be practiced to insure success and prolong life of initial treatment.

## **Planting:**

The majority of the areas cleared of brush can be regenerated with commercial conifer seedlings. Care and handling of lifted bare-root seedlings are extremely important to planting success. If seedlings are stored, they should be stored at cool temperatures (33-35F). Otherwise, they should be planted immediately. Planting is accomplished by hand.

Realizing that seedlings require special care when they are out of their natural environment will insure success in regenerating your site. Successful survival and growth depends on the care taken during storage, transportation, and planting. Seedlings should be picked up immediately after they are lifted at the nursery.

The main consideration during planting is protection of the seedlings, especially the root systems. Seedling roots should not be allowed to dry; putting seedlings in buckets of water or covering them with wet burlap will protect them until they are in the ground.

Inter-planting under stocked area with about 200 seedlings per acre. These seedlings should be planted approximately 15 feet apart.

## **Monitoring:**

Management of the vegetation is accomplished by doing a combination of regular and on-going maintenance and by implementing specific projects. Monitoring of regular maintenance has to do with making sure that: 1) work is being performed where, when, and how it is supposed to be done; 2) the work being done is having the desired results; and 3) any necessary adjustments are made to the maintenance action(s) in the future if intended goals and objectives are not being met.

Periodic monitoring and seasonal inspection should be on-going to detect problems at the earliest possible stage. The long-range cost projections for implementation should be adjusted on an annual basis, as well as at the completion of each major phase of work. The program for implementation could be adjusted annually depending upon availability of funds - specific tasks could be increased or decreased for a particular year, and a prioritized work program will be regularly updated to be responsive to changes in funding and ensure a proactive approach to implementation.

Evaluation of the effectiveness of on-going and routine site maintenance, or measurement of the change over time, should be done by staff or a designated representative each spring for three seasons to assess how well vegetation management goals and objectives are being met.

Monitoring is only effective if the results are incorporated into the on-going management of the property.

## **Some Required Components of Monitoring Plans**

- Clearly stated Goal(s) of the project.
- Clearly stated Objectives of project.
- Performance Standards: must be measurable, quantifiable indicators of performance of the project relative to the stated goals and objectives (is the project doing what you said it would or wanted it to do?).

- **Monitoring Methods:** how often, when, what data to collect and how; description of report format; identification of who gets the report and when do they get it.

*It should be noted that some projects will straddle the somewhat arbitrary margin between forest and developed landscape types. Common sense should dictate which parameters to draw upon in assembling an appropriate and effective project-monitoring plan.*

## MANAGEMENT PLAN IMPLEMENTATION

### Constraints and Proposed Alternatives:

**A. Project as Proposed:** Future projects as proposed include CFIP practices of release for brush management, slash disposal, and planting.

The proposed practices will help achieve the landowner's goals of improving timber production, improving wildlife habitat, improving water quality (by reducing fire threat) and reducing fuels. In addition to these positive benefits, the future projects will provide jobs for many different individuals, thereby stimulating the local economy.

The proposed activities will have a positive effect on the following natural resources:

*Timber Productivity:* Productivity of timber resources will increase as area not currently supporting conifer production will be planted.

*Soils:* Reducing the fuel loading will reduce the impact of a catastrophic or major fire occurring within the project area. These types of fires generally remove the organic layer of the soil, thus reducing the soils ability to capture water within its profile, resulting in an increase in soil erosion.

*Water Quality:* Reducing the threat of wildland fire reduces the threat of sediment and ash entering watercourses through erosion.

*Wildlife:* Decreasing brush increases sunlight levels reaching the forest floor. An increase in sunlight increases the number of herbaceous forbs available to both omnivores and herbivores.

*Economy:* These activities will provide jobs to many different contractors who specialize in timber extraction, fire hazard reduction, forestry and natural resource management.

These activities will NOT have an adverse effect upon the resources of the State.

**B. No Project:** Under this alternative, no portion of the project will be implemented.

Under this alternative, the existing fuel hazard will remain, brush stocking levels will increase and competition for limited resources such as sunlight, water, and nutrients will grow as well. The fuel hazard will increase in terms of the amount of vegetation per acre (tons/acre).

This alternative will have a positive effect upon:

*Visual:* Though adjacent to Interstate 80, the property sits above the freeway and is generally not visible to those passing by. No piles of brush will be created through this project; therefore, no visual concerns would exist.

This alternative will have an adverse effect upon:

***Soils:*** High fuel loading on the property will increase the chances of a catastrophic fire occurring. Fires of this nature tend to burn very hotly, destroying all organic material including the top layer of soil (known as the “O” horizon), thus increasing the chances of heavy erosion to occur.

***Water Quality:*** The higher fire danger potential of the property leads to a greater chance of sediment reaching watercourses through erosion.

***Wildlife:*** The project area provides limited habitat for wildlife. Understory vegetation provides only seasonal forage and cover for few animals and the potential for a catastrophic wildland fire means the potential to lose important habitat such as snags or downed logs.

The no project alternative would not meet any of the landowner’s objectives and may contribute to future adverse effects on natural resources. Therefore, the “no project” alternative was not chosen to be implemented.

### **Implementation Measures:**

The project as proposed (**Alternative A**) is necessary in order to achieve the goals for forest management described above. The following proposed forest improvement treatments will maintain a high quality productive timber stand, decrease wildland fire potential, maintain and improve water quality, improve wildlife habitat, and provide jobs to the local economy in an efficient manner.

#### **Soils:**

As most of the organic nutrients of the soil are found in the surface leaf litter and in the top few inches of soil, disturbance to this zone should be kept at a minimum to insure continued productivity of the soil. It is important to provide for replenishment of the nutrients in this zone, especially following removal of vegetation. This can be done by retaining a mixture of conifers and hardwoods as this enhances leaf litter decomposition and by allowing foliage and limbs of trees and shrubs that are cut to rot into the ground as these portions of the plants contain the majority of the nutrients in the plants.

The most obvious cause of soil degradation and consequent loss of soil productivity is from soil erosion. Soil erosion is a constantly occurring natural event which can be greatly aggravated by human disturbance. In mountainous areas road building, vegetation removal, and fire are the main causes of accelerated erosion. Whenever soil is exposed to rainfall impact and/or water is concentrated on bare soil erosion will increase. For these reasons, it is best to maintain a continuous vegetative cover or at least minimize disturbance to the ground cover (leaf and twig cover).

In general, roads are known to be the main contributors of sediment to stream systems. Sediment is eroded primarily because of drainage structures which have been improperly sized, installed, constructed, and/or maintained. Drainage structure failures are more often caused by high rainfall from summer thunderstorms which overload or plug them than from winter rainfall. This can be alleviated to a degree by installing culverts of adequate size, installing trash racks on culverts, keeping culvert inlets free of debris, constructing water-bars and rolling dips of a sufficient depth so they will not fill up with sediment or debris, and keeping them cleaned out.

Another source of sediment is from rill or gully erosion from road surfaces. Gully erosion most often occurs because of improper sloping of roads which concentrates water on the road surface or in inboard ditches, inadequate water barring for the road gradient and soil type, inadequate maintenance of water-bars which allows water to broach them, and/or rutting of the road surface (and broaching of water bars) by driving on it when it is wet. Rill erosion occurs for the above reasons plus inadequate vegetation on cut banks and fill slopes.

Most of the above causes of erosion can be minimized through regular maintenance of roads. Drainage structures should be checked periodically during the summer but especially after severe thunderstorms. Before the winter rain period all drainage structures should be inspected, cleaned out, and repaired. Ideally these should be inspected periodically during the winter. It will soon be evident where the problem spots are and corrective measures can then be taken.

Soil disturbance from fuels management activities, including mastication, could result in the introduction and spread of noxious weeds into areas that are currently not infested, as well as the potential spread of existing infestations into new areas. Invasive weeds can increase fire hazards and have adverse effects on native plant communities and the wildlife that depend on them, and on the value of agricultural lands. The most aggressive exotic plants degrade natural areas because they can exclude native species, displace natural communities, promote faunal change, reduce biological diversity, disrupt ecosystem processes, alter fire frequencies, reduce recreational values, threaten endangered species, and fundamentally alter the unique character of California.

The tires or undercarriage of vehicles and equipment working in infested areas can inadvertently pick up and transport noxious weed seed and/or stolons. Erosion control measures such as use of contaminated straw bales and seed can also result in the inadvertent introduction of new invasive plants to the project area, which can in turn spread into adjacent undisturbed woodlands or adjacent agricultural lands or residences.

Forest landowners who wish to practice good stewardship on their lands need to assess the potential negative impact of their management activities on soil and water resources both on and off their property. Soil and water conservation is focused on the prevention of erosion and off-site movement of sediments, nutrients, and pesticides, the maintenance of normal water levels in wetlands, and the reduction of flood flows into estuaries.

It is necessary to monitor soil productivity to detect significant changes caused by management actions. Maintaining soil productivity also requires restoring or improving soils in areas where they have been degraded. Controlling soil erosion, compaction, and maintaining the nutrient balance during timber harvest, reforestation, and vegetative manipulation is vital to long-term soil productivity and protection of down-stream water quality. Practices include maintaining ground cover to reduce soil loss and limiting heavy equipment use on soils during wet weather.

If practices are not performed properly, they have the potential for significant topsoil and nutrient loss. This often results in reduced productivity and increased off-site water pollution. Additionally, the cumulative effects of drainage projects in a region often result in reduced water storage capacity and increased downstream flooding, as well as reduced fish/wildlife habitat and species diversity.

Soils are an important environmental variable in that they reflect many of the processes that shape the natural landscape. They are good indicators of the parent geologic formations beneath them and thus can aid in defining geologic strata. Soils are also the products of topography, hydrology, climate and flora, which allow them to be used as general environmental indicators.

To minimize soil compaction, rutting, and gullyng with resultant sediment production and loss of soil productivity, tractor operations should be limited to periods when the soil moisture content is sufficiently low that excessive rutting or other soil damage does not occur.

Mechanical slash treatment involves the use of heavy equipment to clear an area of unwanted vegetation or planting obstructions. This may be as simple as masticating brush and small trees, or as major as completely clearing a site of undesirable trees and brush with a dozer. When mechanical treatment is necessary, consider these guidelines:

- Avoid removing the forest's litter layer as much as possible on slopes. This can be done by hand clearing, mastication, or using a raised dozer blade to move only woody material and avoid soil gouging. Do not expose more than 50% of the soil surface.
- Do not operate under wet soil conditions.
- Stabilize bare soil areas on cleared sites with a temporary cover crop.

## **Roads:**

New road construction should be out-sloped and with rolling dips at sufficient intervals to prevent water from concentrating on the road surface. Road slopes will be less than 10%. Culverts in draws and creek crossings should be sized adequately and where needed trash racks should be installed at inlets to keep them clear of debris and energy dissipaters should be constructed at culvert outfalls. Roads should be located so as to minimize cut and fill slopes. They should follow existing road locations whenever feasible to minimize new disturbances. Side slopes should be stabilized with willow wattles and/or other vegetation before heavy winter rains. The California Department of Forestry and Fire Protection (**CAL FIRE**), the Natural Resources Conservation Service (**NRCS**), and the Nevada County Resource Conservation District (**RCD**) can all provide information useful in designing roads.

Rolling dips or water bars should be maintained on all traveled roads within the property. They should also be installed on older roads and trails, which have evidence of erosion occurring. Water breaks should not exceed the following standards (based on a moderate Erosion Hazard Rating):

- <11% Gradient – 200'
- 11 – 25% Gradient – 150'
- 26 – 50% Gradient – 100'
- >50% Gradient – 75'

Water breaks should be located to allow water to be discharged into some form of vegetative cover, rocks or other non-erodible material and should be constructed to provide for unrestricted discharge at the lowest end of the water break so that water will be discharged and spread in such a manner that erosion will be minimized.



Water breaks should be cut diagonally a minimum of six inches into the firm roadbed or skid trail and should have a continuous firm embankment of at least six inches in height at the lower edge of the water break cut.

Avoid using roads during wet periods if such use would likely damage the road drainage features. Consider gates, barricades, or signs to limit use of roads during the winter period (Nov. 15<sup>th</sup> - April 15<sup>th</sup>) or other wet periods.

## **Culvert & Ditches:**

Culverts and ditches must be kept free of debris and obstructions. Ditches on newly constructed and/or graded roads may require frequent cleaning and checking after each major storm until re-vegetation has occurred. While clearing ditches, follow these guidelines:

- Leave grass in the ditch unless it has filled with sediment and is no longer functioning.
- Avoid undercutting the road shoulders and banks.
- Check culverts for blockage by debris.
- Do not leave a berm on the side of the road; berms will channel water down the road.

## **Pests:**

Insects, diseases, plants, and animals can damage trees and other forms of vegetation. Damage includes mortality, reduced growth, reduced tree quality, top killing, degradation, and reduced quantity and quality of seed production. If the damage affects the attainment of land and resource management goals and objectives, the destructive agents are considered pests. In addition to plants, pests, such as plague-infected rodents can also affect humans.

Pest damage can vary by year and by place within a forest. Damage is frequently the result of several pests and environmental factors acting together, rather than the result of a single pest. Common insect and disease complexes that occur in forest include root disease-bark beetle and dwarf mistletoe-bark beetle. Damage from these pests is often accentuated during severe environmental conditions, such as drought, and by certain stand conditions, such as overstocking. In general, these pests, along with their natural enemies (parasites and predators), are a part of the environment and have adapted to exploit certain ecological niches or conditions during a forest's development. In addition, pocket gophers can cause damage to reforestation acres.

Forest management activities should concentrate on thinning existing stands and creating stands of varying species and age classes. This will serve the purpose of isolating outbreaks to smaller areas and make control more realistic as well as removing the large uncontained habitats needed for these problems to reach epidemic levels. It is also advisable that periodic surveys of the property be conducted so that problems can be treated before they get out of hand.

Continued monitoring of the forest resources for signs of insects and disease problems will need to be undertaken to reduce the possibility of insect or disease epidemics.

Monitoring the tree population within the urban setting for potential problem is a means in determining how much control is needed. A schedule of programmed maintenance will aid in

maintaining a healthier tree population. An important consideration of any forest management plan is the cost of pest control in relation to the benefits derived. The conifers within the property are susceptible to several destructive insect and diseases. The following is an overview of some of the more abundant.

No significant pest problems have been observed. Minor amounts of dwarf Mistletoe, Western Pine Beetle, and Western Gall Rust can be expected to exist and are endemic to the property.

## **Fire Protection:**

Fire is a seasonal threat to the area (June - October). Fire risk increases on ridge tops and dry sites, in softwoods, in young trees, and with proximity to roads and neighbors. Fire risks decreases near streams and wetlands, with hardwoods, and in older timber. The greatest risk in this location is from human caused fire, in late summer and early fall.

## **Consideration when Contracting Fuel Treatment:**

The provisions set forth below outline the responsibility for fire prevention and suppression activities and establish an attack procedure for fires within the property.

## **Responsibilities:**

Contractor: (1) should abide by the requirements of the Fire Plan. (2) Should take all steps necessary to prevent his/her employees, subcontractors and their employees from setting fires not required in completion of the contract, should be responsible for preventing the escape of fires set directly or indirectly as a result of contract operations, and should extinguish all such fires which may escape.

## **Tools and Equipment:**

Contractor should comply with the following requirements: (1) Should furnish and have available for emergency use on each piece of equipment used in conjunction with performance of the work as listed below, hand tools and/or equipment as follows (CPRC 4427 and 4431): (a) One shovel, one axe (or pulaski) and a fully charged fire extinguisher on each truck, personnel vehicle, tractor, grader and other heavy equipment. (b) One shovel and one back-pack 5-gallon water-filled tank with pump with each welder. (c) One shovel and one chemical pressurized fire extinguisher (fully charged) for each gasoline-powered tool, including but not restricted to chain saws, soil augers, rock drills, etc. Shovel must be kept within 100 feet from each chain saw when used off cleared landing areas. (2) All tools and equipment required in (1) above shall be in good workable condition and shall meet the following specifications for fire tools: (a) Shovels shall be size "O" or larger and be not less than 46 inches in overall length. (b) Axes (or Pulaski) shall have 2-1/2 pound or larger heads and be not less than 28 inches in overall length. (3) A sealed box of tools shall be located within the operating area, at a point accessible in the event of fire. This fire tool box shall contain: one 5-gallon, backpack pump-type fire extinguisher filled with water; two axes; two McLeod fire tools; one serviceable chain saw of three and one-half or more horsepower with a cutting bar 20 inches in length or longer; and sufficient number of shovels so that each employee at the operation can be equipped to fight fire.

## General

- Contractor should comply with all applicable laws of the State of California. In particular, see California Public Resource Codes.
- Permits Required. The Contractor must secure a special written permit from the necessary agencies before engaging in Burning (Issued by CAL FIRE and/or local fire agency and by County Air Pollution Control Districts, as applicable.)
- Regulations for Burning. Special care should be taken to prevent scorching or causing any damage to adjacent structures, trees, and shrubbery. Piles of material to be burned should be of such size and so placed that during burning no damage should result to adjacent objects.
- Reporting Fires. As soon as feasible after initial control action is taken, Landowner and/or Contractor should notify the local Fire Agency (911) of any fires.

Woodland areas adjacent to the urban areas have understory fuels that could potentially intensify fires, increase their rate of spread, and/or cause fires to move into the crowns of individual trees or groups of trees. These understory fuels typically consist of sapling- and or pole-sized trees, shrubs, grass and forbs, and/or deadwood (snags, logs, limbs, cones, leaves).

There are also forested areas where the crowns of the overstory trees are touching and/or intermingled. If understory ladder fuels were to carry fire into the canopies of these trees, under the right circumstances a crown fire would result. Such fires are difficult to control and could move rapidly through dense canopies, pushed by the winds that are common during the summer. Most crown fires require surface fires to maintain the heat necessary to advance. If understory vegetation is adequately thinned, the likelihood of a crown fire developing or advancing will be reduced.

Slash treatment zones are utilized to reduce the fuel load of a wildland area adjacent to urban developments, thereby reducing the radiant and convective heat of wildland fires. All dead and dying vegetation should also be removed from the thinning zones. Additionally, undesirable plant species should be removed from the thinning zones due to their susceptibility to wildland fire.

In addition to providing travel routes, roads can act as firebreaks for certain types of fire providing control points for fire suppression. But roads are also a common location for fire ignitions. Fuel modification along roads can reduce the availability of fuels for such ignitions as well as slow the rate of spread and reduce fire intensity once fuels are ignited. This increases the time before fires build up enough energy to become difficult to control and increases the effective response time for fire control resources.

This work consists of removing and treating limbs, residual slash, windfalls, live roadside brush, and small trees within, or obtruding into, the designated brushing limits (10 feet along the shoulder on both sides of the road).

## Security:

Theft of timber from forestlands can destroy generations of careful forest stewardship and cause irreparable environmental damage. Prosecuting vandals is expensive and convictions are often very difficult to obtain.

Landowners must take the responsibility to prevent vandalism, trespass, and timber theft on their property. Prevention is the best defense.

The best way to prevent timber theft, vandalism, and trespass is to protect your property with the following simple steps.

1. Mark forest boundaries. Most property boundaries in forests are obscure, giving timber thieves a good excuse for removing trees through unauthorized logging. Your forest boundaries should be clearly marked with a combination of ownership signs, paint marks, posted signs, flagging, and fencing, where appropriate. Posted signs should be placed conspicuously, without creating a visual nuisance.

## **Streams, Wetlands, and Ponds:**

The watercourses throughout the property are classified as Class II or III. To protect the quality of water in these creeks care needs to be taken to prevent sediment and debris from entering them. A buffer of undisturbed vegetation, leaf litter, and soil needs to be maintained on either side of the creeks to act as a sediment filter strip and to protect stream banks from erosion.

- Class II buffers should be 50 feet wide on slopes up to 30%, 75 feet wide on 30-50% slopes, and 100 feet wide on slopes greater than 50%.
- Class III buffers should be 25 feet wide on slopes up to 30%, 50 feet wide on slopes greater than 30%.

## **Air Resources:**

The Northern Sierra Air Quality Management District (**NSAQMD**) issues burn permits for the purposes of regulating particulate matter release amounts. Burn permits are issued for commercial burning operations, such as agricultural burns or slash burns for timber operations. Residential debris burning does not require a burn permit from NSAQMD but does require a burn permit from CAL FIRE. Debris burning is limited to dry, woody, natural vegetation that can be burned within the permissible burn day and with limited smoke production.

## **Climate Considerations and Carbon Sequestration:**

Fuel treatment is part of a complex carbon equation and though methods to quantify potential greenhouse gas (**GHG**) emissions have been developed for numerous sources, the connection between potential emissions and their ultimate potential effects on or contributions to climate change and global warming have not been precisely defined. No known quantitative significance threshold exists for potential global warming impacts.

Catastrophic wildfires represent a significant carbon loss and source of GHG emissions throughout the world. By not managing the property, conditions are being created that are far more conducive to unnatural, devastating, and destructive crown fires as opposed to conditions created and enhanced by forest management and fuel-reduction practices. Wildfires are one of the primary contributors to GHG's and may emit up to 100 tons of CO<sub>2</sub> per acre depending on forest type, density, and fire intensity (Helms 2007).

## **CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) and NATIONAL ENVIRONMENTAL PROTECTION ACT (NEPA) INFORMATION**

Forest management activities including conservation practices may impact special environmental and/or cultural values such as threatened or endangered species and archaeological sites.

Landowners need to know their locations and what they can do to protect them. Landowners also need to know that environmental and cultural reviews by regulatory agencies are required when a ground practice is proposed, and a permit and/or government assistance becomes part of the project.

- **Biological, See Appendix 2**
- **Archaeology, See Appendix 3**

## **ADDITIONAL CEQA/NEPA NOTIFICATION FOR GROUND PRACTICES**

*Any future ground practice to implement this plan using public entity reimbursement funds requires a signed CAL FIRE CFIP Environmental Checklist (CEQA) or an NRCS CPA-52 (NEPA) Checklist. Along with this checklist a process of "discovery" or survey for unknown values along with a discussion of possible mitigations is required. Additionally, the checklist must be filled out by an RPF or Certified Planner. Archaeological values require an Archaeological Records Check, an entity Archaeologist review and Native American notification for the practice area.*

### **PROVIDE A PROJECT NOTIFICATION TO THE FOLLOWING AGENCIES:**

- **County Clerk**
- **CA Department of Fish and Game**
- **Regional Water Quality Control Board**
- **If the project adjoins public land (for example, the US Forest Service, US Fish and Wildlife Service, BLM, National, State, or local parks, etc.) notify that agency**
- **If the project adjoins a State Highway, contact CALTRANS**
- **If the project is in the Coastal Zone, contact the Coastal Commission**

### **FOR GROUND-DISTURBING PROJECTS, PROVIDE A PROJECT NOTIFICATION TO:**

- **Native American Heritage Commission**
- **Tribal contacts**
- **Local Historical Society**

## ADDITIONAL PROFESSIONAL ASSISTANCE

**California Department of Fish and Wildlife Website:** (<http://www.dfg.ca.gov/>).

The Department of Fish and Wildlife provides information and recommendations to private landowners on programs and activities for the protection, management, and enhancement of native wildlife, fish, plants, and habitats. A variety of programs and partnerships between the State and private landowners are available. These initiatives could include timber management in the context of improving wildlife habitat.

### **California Forest Stewardship Program**

Website: (<http://www.calfire.ca.gov/foreststeward>). The California Forest Stewardship Program is designed to encourage good stewardship of private forestland. The program provides technical and financial assistance to influence positive changes to forestland management, assists communities in solving common watershed problems, and helps landowners.

### **Cal Fire Forest Advisor/Forestry Assistance Specialist in Your Area**

Website ([http://www.calfire.ca.gov/resource\\_mgt/resource\\_mgt\\_forestryassistance](http://www.calfire.ca.gov/resource_mgt/resource_mgt_forestryassistance)) Cal Fire provides technical advice and assistance to private landowners regarding forest issues such as timber management, fire, and forest pests.

### **Cal Fire Pest Management Program**

Website: ([http://www.calfire.ca.gov/resource\\_mgt/resource\\_mgt\\_pestmanagement](http://www.calfire.ca.gov/resource_mgt/resource_mgt_pestmanagement)). Cal Fire's forest pest specialists help protect the state's forest resources from native and introduced pests, conduct surveys and provide technical assistance to private forest landowners, and promote forest health on all forest lands.

### **Nevada County Agricultural Commissioner**

Website: (<http://www.mynevadacounty.com/nc/cda/agcomm/Pages/Home.aspx>). You will find useful information about the functions and activities of the Department of Agriculture, such as crop statistics, biological control programs, pesticide registration and regulation, organic production, current issues, and our consumer protection role as a function of the department's Weights & Measures program. This Department also administers the Fish and Wildlife Commission, Predatory Animal Control and Agriculture Advisory Commission.

### **Redbud Chapter of the California Native Plant Society**

Website: (<http://www.redbud-cnps.org/>). Their mission is to increase the understanding and appreciation of California's native plants and to conserve them and their natural habitats through education, science, advocacy, horticulture, and land stewardship.

### **Nevada County Resource Conservation District**

Website: (<http://www.ncrcd.org/>) The RCD acts as independent local liaison between the federal government and landowners. Assist local people to initiate and carry out long-range programs of resource conservation and development. Conducts grant searches on accepted measures. Provide multi-county planning coordination. Program objectives focus on "quality of life" improvements achieved through natural resources conservation and community development.



## **Environmental Quality Incentives Program (EQIP)**

Website: (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/eqip/>). EQIP offers financial and technical help to assist private timberland owners install or implement structural and management practices on eligible agricultural land. Provides incentives in the form of cost share payments to implement conservation practices including forestry management practices on non-industrial private forestland.

## **Fire Safe Council of Nevada County**

Website: (<http://www.areyoufiresafe.com>). The purpose of the Fire Safe Council is to work to reduce the risk of life and property loss from wildfire. Fire Safe Council programs have been developed to educate, communicate and promote action to respond to the wildfire hazard in Nevada County.

## **Forest Landowners of California**

Website: (<http://www.forestlandowners.org/>). Their mission is to advance sustainable, science-based management practices to enhance and ensure long-term productivity and beauty of California's private forestlands. Provide access to experienced members and professionals in the fields of forestry, fire protection, product marketing, eco-system management, estate planning, accounting, law, and education. Protect the family forest owner from unreasonable regulations. Promote improved marketing opportunities for forest products and recreational and wildlife benefits of forestland. Provide opportunities for family forest owners to meet and share common goals, challenges, and interests.

## **U.C. Cooperative Extension Advisor**

Website: (<http://ceplacer.ucanr.edu/>). Their Natural Resource Program provides forestry, wildlife, rangeland, watershed management and other natural resource related information to a wide variety of county residents and visitors. The goal is to promote sound management and conservation of the region's natural resources, through research, educational activities, and good working relationships with a broad range of people. The main clientele for this position are private landowners; resource management professionals working on private, State and Federal lands; and other groups such as users of public lands, conservation organizations, and the agriculture and forest products industries. The Natural Resources Program examines forest resources and hardwood rangeland including soil, water, vegetation, and wildlife.

## **Wildlife Habitat Incentives Program (WHIP)**

Website: (<http://www.nrcs.usda.gov/programs/whip/>). The Wildlife Habitat Incentives Program (WHIP) is a voluntary program for people who want to develop and improve wildlife habitat primarily on private land. Through WHIP USDA's Natural Resources Conservation Service provides both technical assistance and up to 75 percent cost-share assistance to establish and improve fish and wildlife habitat. WHIP agreements between NRCS and the participant generally last from 5 to 10 years from the date the agreement is signed.

## **Williamson Act Program**

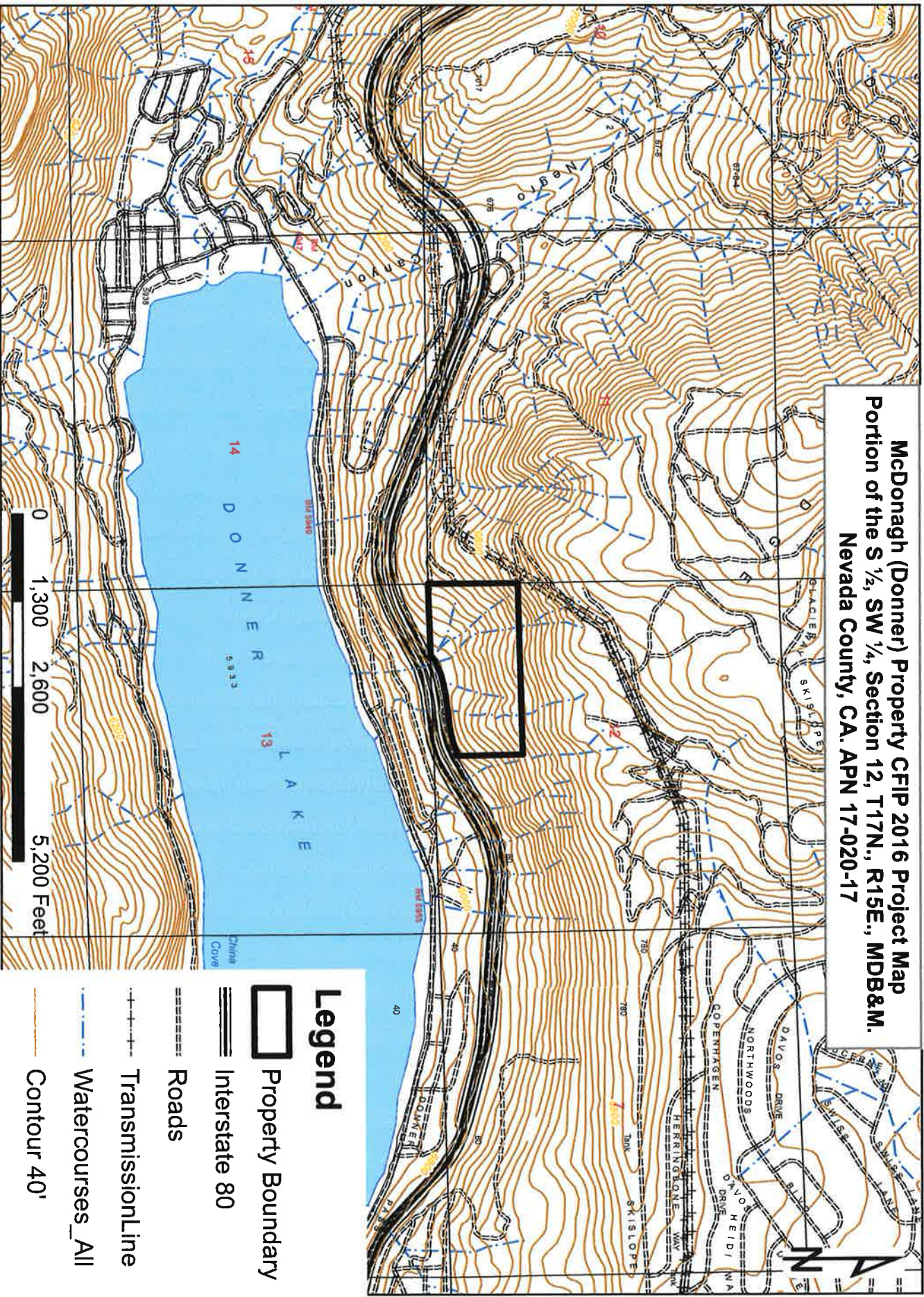
Website: (<http://www.conservation.ca.gov/dlrp/lca/Pages/Index.aspx>). The California Land Conservation Act of 1965 -- commonly referred to as the Williamson Act -- enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments, which are much lower than normal because they are based upon farming and open space uses as opposed to full market value.

## Appendix 1 - MAPS







### Map 1.1 - Property Location Map:



**McDonagh (Donner) Property CFIP 2016 Project Map**  
**Portion of the S 1/2, SW 1/4, Section 12, T17N., R15E., MDB&M.**  
**Nevada County, CA. APN 17-020-17**



**Legend**

-  Property Boundary
-  Interstate 80
-  Roads
-  Transmission Line
-  Watercourses All
-  Contour 40'



Map 1.2 - Parcel Map

# SECS 1,2,3,10,11 & 12, T.17 N., R.15 E., M.D.B. & M.

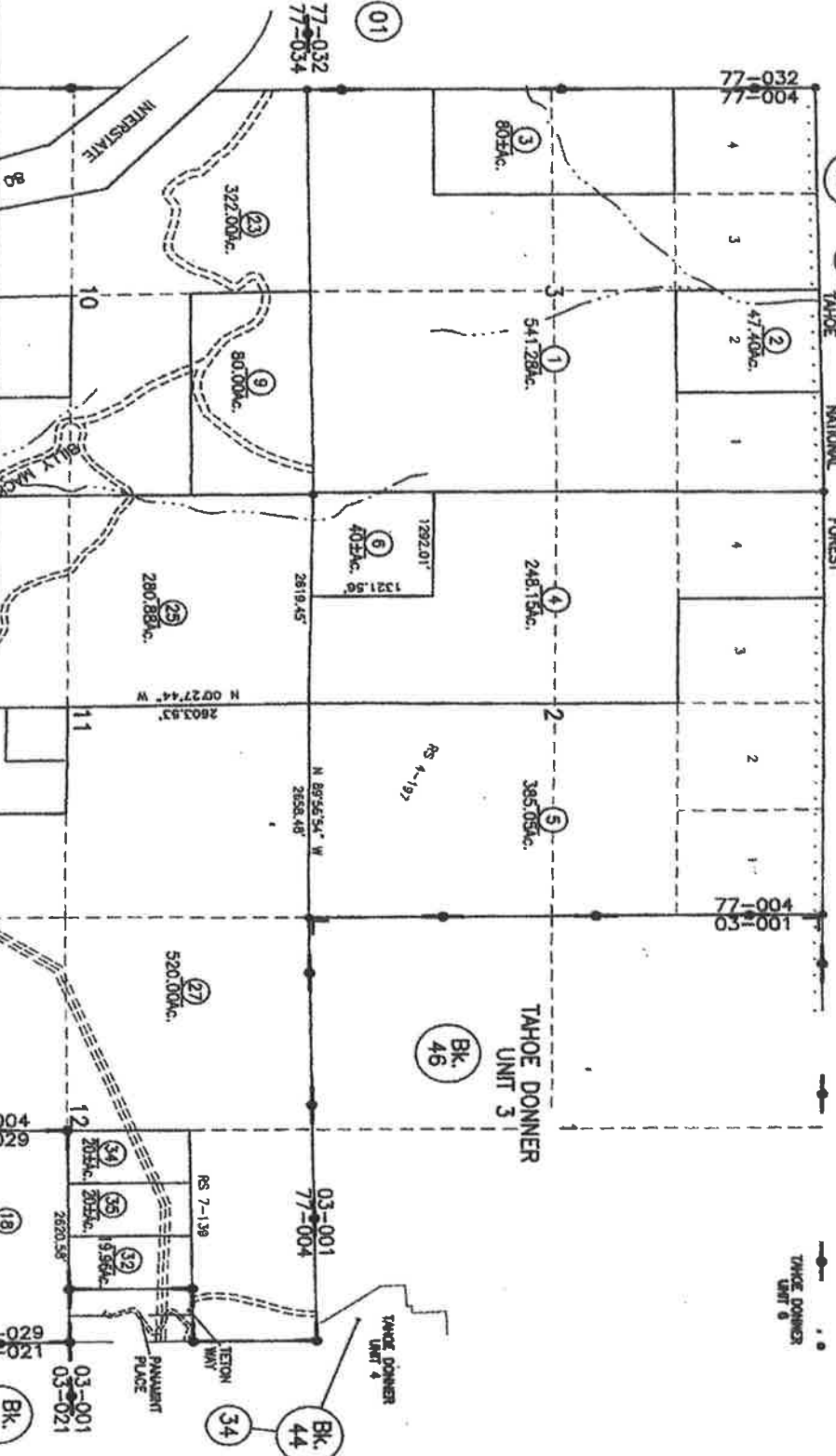
Tax Area Code  
77-004 77-029

17-02

Bk. 16  
06

TAHOE NATIONAL FOREST

TAHOE DONNER  
UNIT 6



**McDonagh CFIP**  
Assessor Parcel Map  
Portion of Section 12, T17N, R15E, MDB&M  
Nevada County

Ownership Boundary (70 Acres)  
APN 17-020-17

Assessor's Map Bk. 17-Pg. 02  
County of Nevada, Calif.  
1962

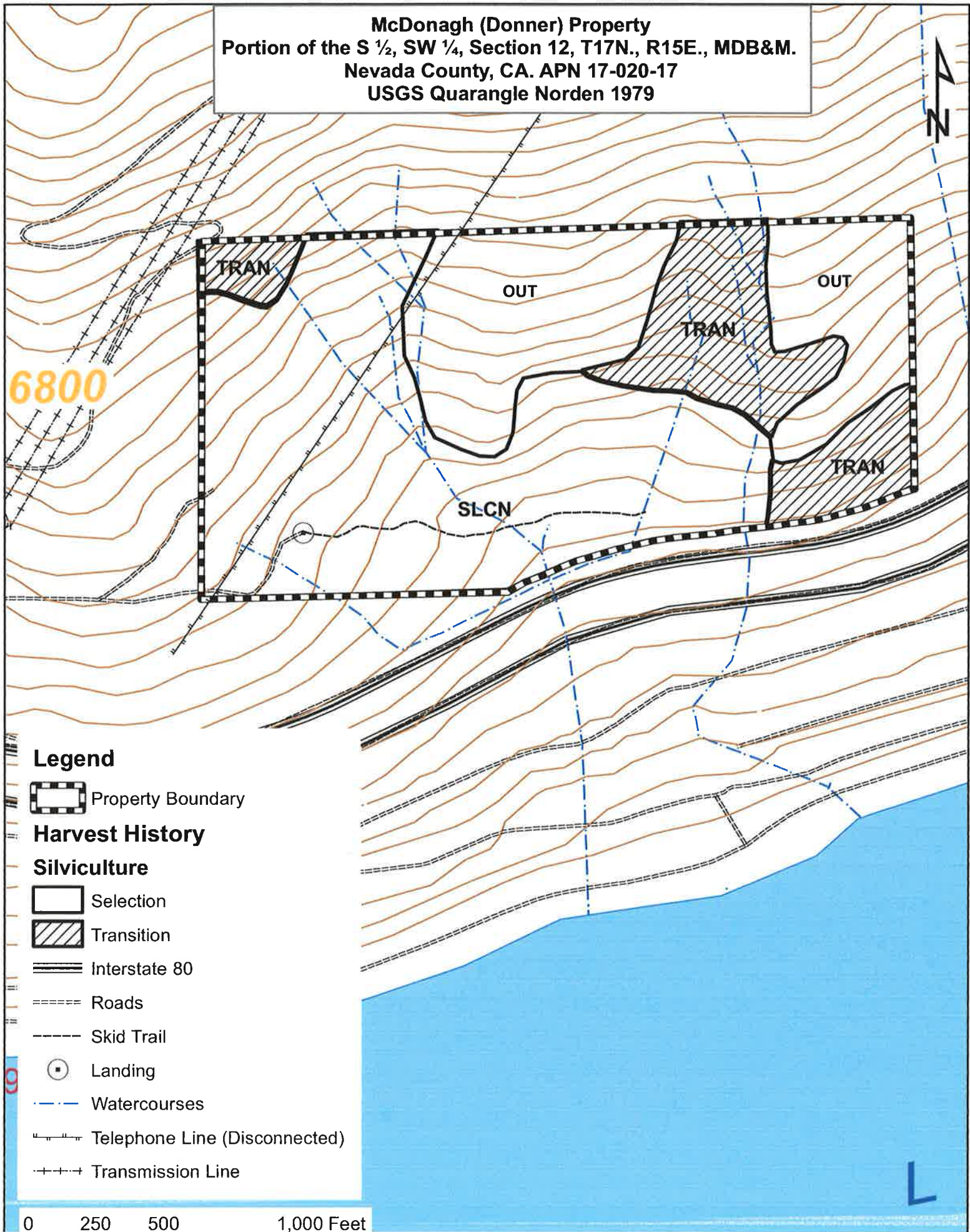
Bk. 11 Pg. 67

3-1-81 3-1-87 1-1-97  
3-1-82 3-1-81 1-1-97  
3-1-88 3-1-93 1-1-07  
LAST UPDATE: 4-15-11

AMG 4/11

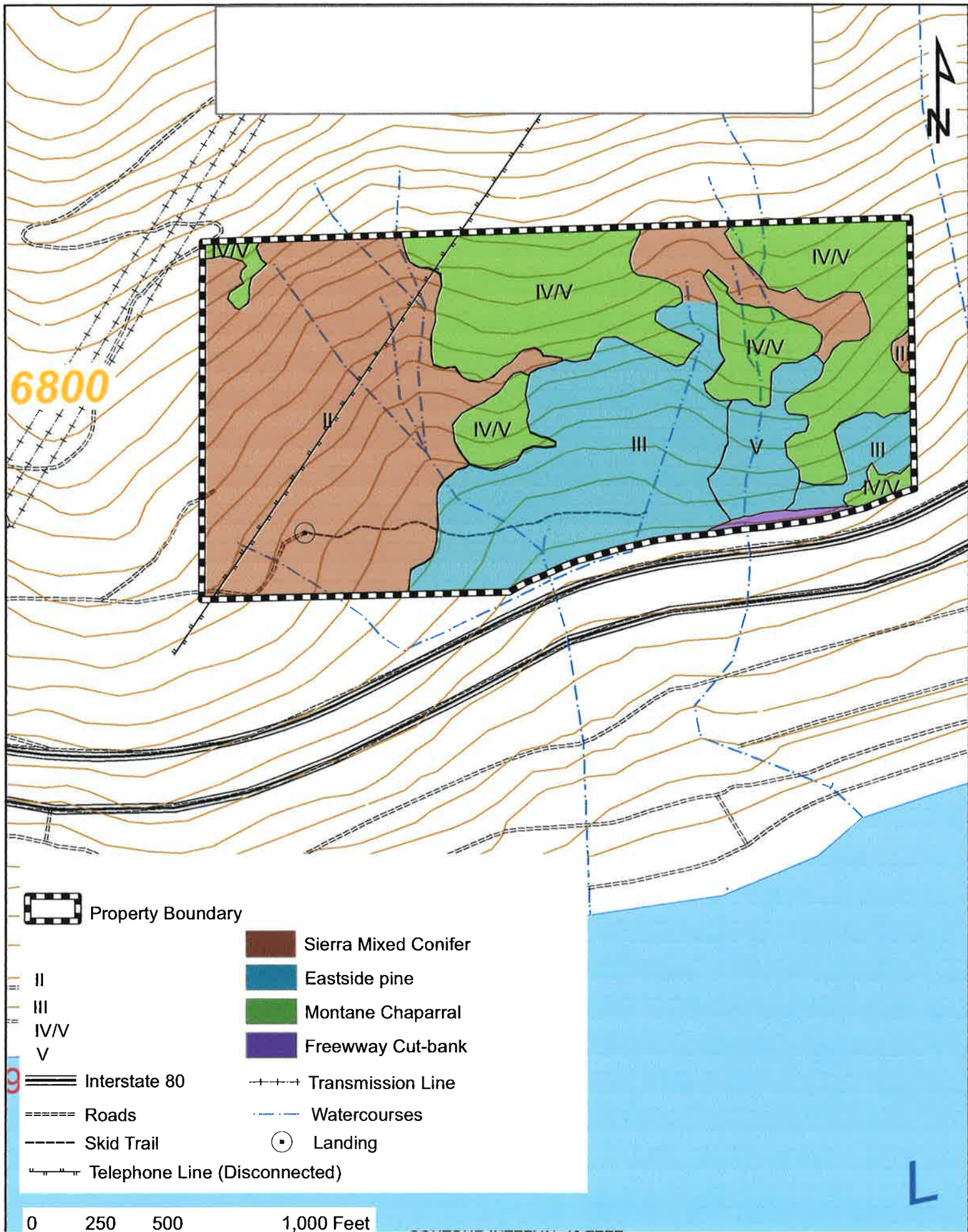
Map 2.1 – Harvest History Map

McDonagh (Donner) Property  
Portion of the S ½, SW ¼, Section 12, T17N., R15E., MDB&M.  
Nevada County, CA. APN 17-020-17  
USGS Quarangle Norden 1979



## Map 2.2 – Land Cover/Vegetation Cover Map





Property Boundary

II  
III  
IV/V  
V

- Sierra Mixed Conifer
- Eastside pine
- Montane Chaparral
- Freeway Cut-bank

- Interstate 80
- Roads
- Skid Trail
- Telephone Line (Disconnected)

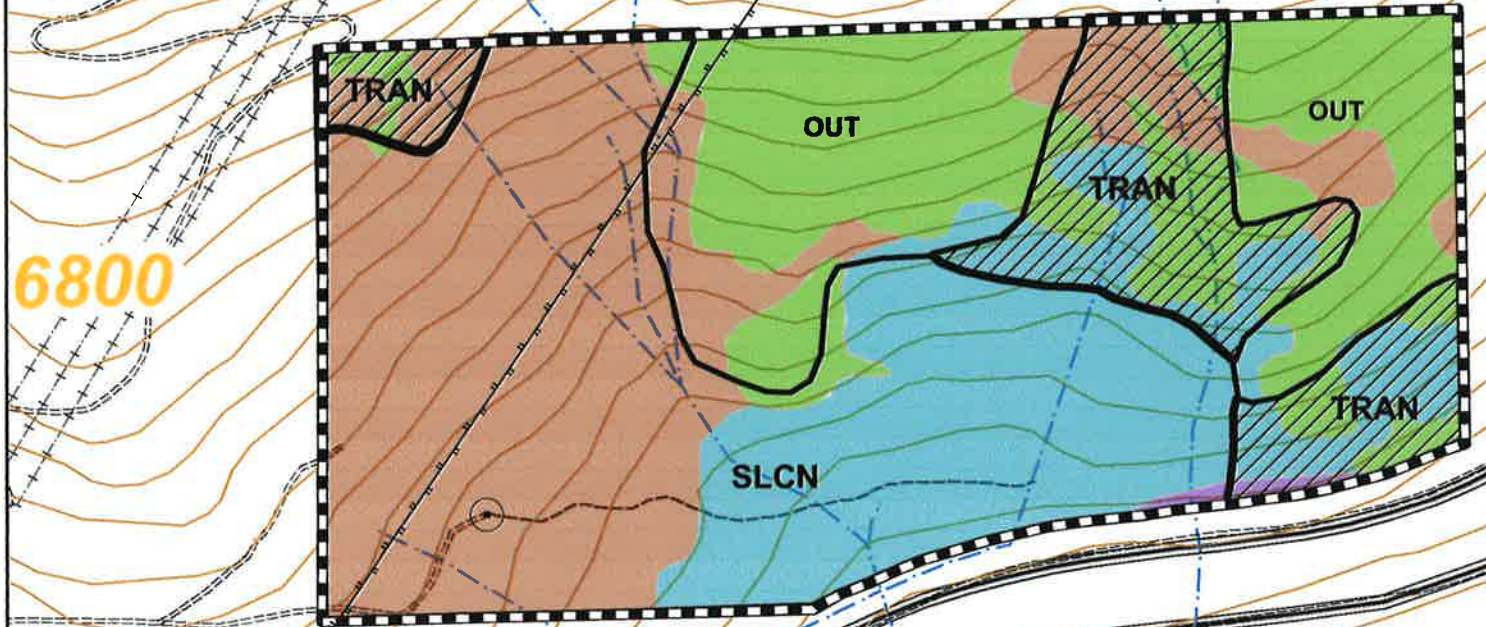
- Transmission Line
- Watercourses
- Landing

0 250 500 1,000 Feet

Map 2.3 – Land Cover/Vegetation Cover with Harvest History Map



**McDonagh (Donner) Property**  
**Portion of the S ½, SW ¼, Section 12, T17N., R15E., MDB&M.**  
**Nevada County, CA. APN 17-020-17**  
**USGS Quarangle Norden 1979**



**Legend**



Property Boundary

**Harvest History**

**Silviculture**



Selection



Transition



Interstate 80



Roads



Skid Trail



Telephone Line (Disconnected)

**Timber/Vegetation Habitat Types**



Sierra Mixed Conifer



Eastside pine



Montane Chaparral



Freeway Cut-bank



Transmission Line



Watercourses



Landing

0 250 500 1,000 Feet

## Map 2.4 - Soil Type Map



**McDonagh (Donner) Property**  
**Portion of the S ½, SW ¼, Section 12, T17N., R15E., MDB&M.**  
**Nevada County, CA. APN 17-020-17**  
**USGS Quarangle Norden 1979**



MIG3

6800

WDF

## Legend



Property Boundary

## Soils



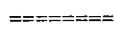
MIG3 - Meiss



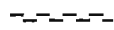
WDF - Waca



Interstate 80



Roads



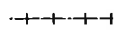
Skid Trail



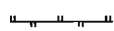
Landing



Watercourses



Transmission Line



Telephone Line (Disconnected)

0 250 500 1,000 Feet

CONTOUR INTERVAL 40 FEET

## Map 2.4.1 – Slope Map



**McDonagh (Donner) Property**  
**Portion of the S ½, SW ¼, Section 12, T17N., R15E., MDB&M.**  
**Nevada County, CA. APN 17-020-17**  
**USGS Quarangle Norden 1979**

6800



## Legend



Property Boundary

## Slope



0 - 20%



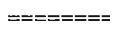
20 - 40%



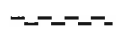
40%+



Interstate 80



Roads



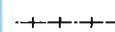
Skid Trail



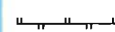
Landing



Watercourses



Transmission Line



Telephone Line (Disconnected)

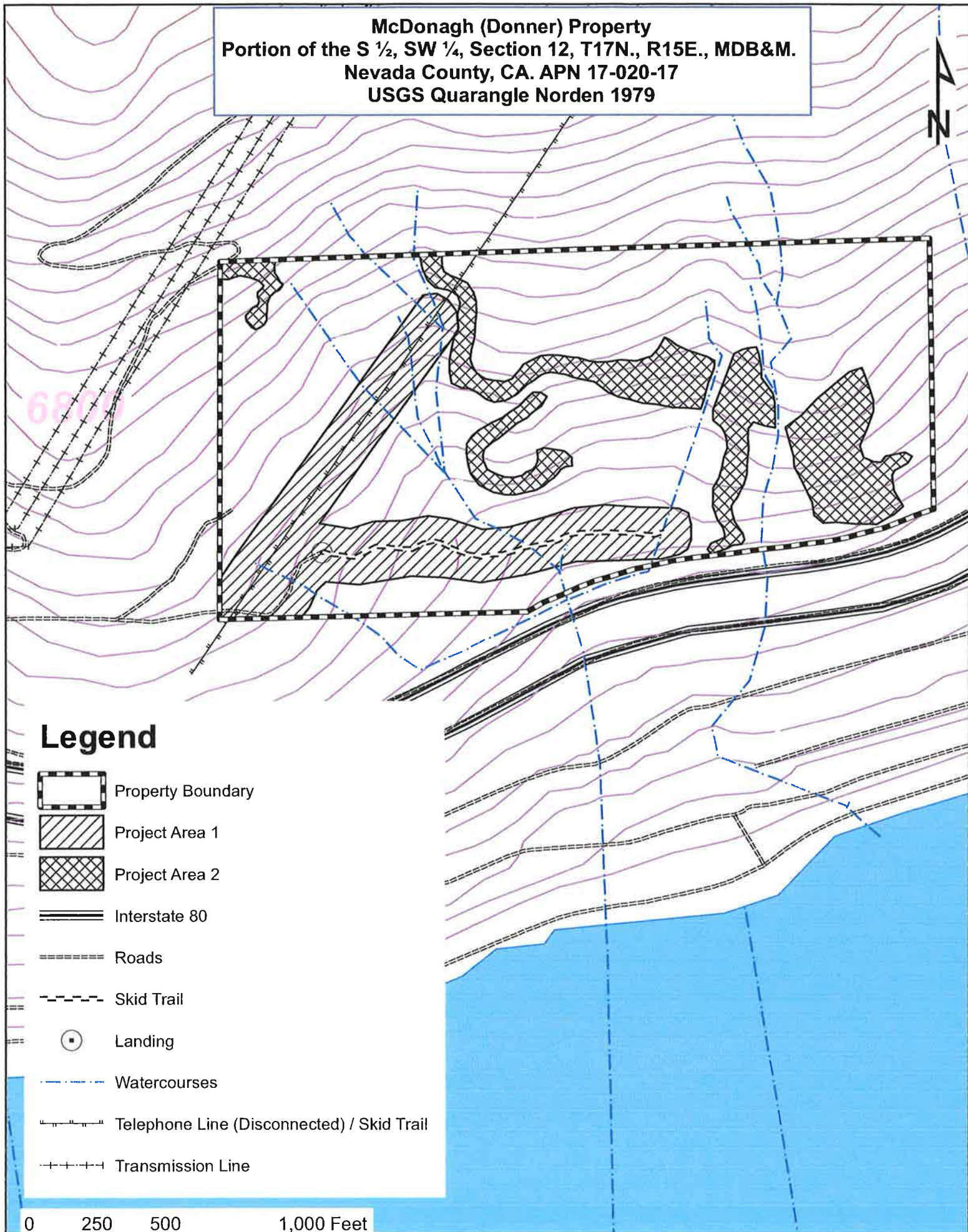
0 250 500 1,000 Feet

CONTOUR INTERVAL 40 FEET

## Map 3.1 - Future Projects Map



McDonagh (Donner) Property  
Portion of the S ½, SW ¼, Section 12, T17N., R15E., MDB&M.  
Nevada County, CA. APN 17-020-17  
USGS Quarangle Norden 1979



# Legend

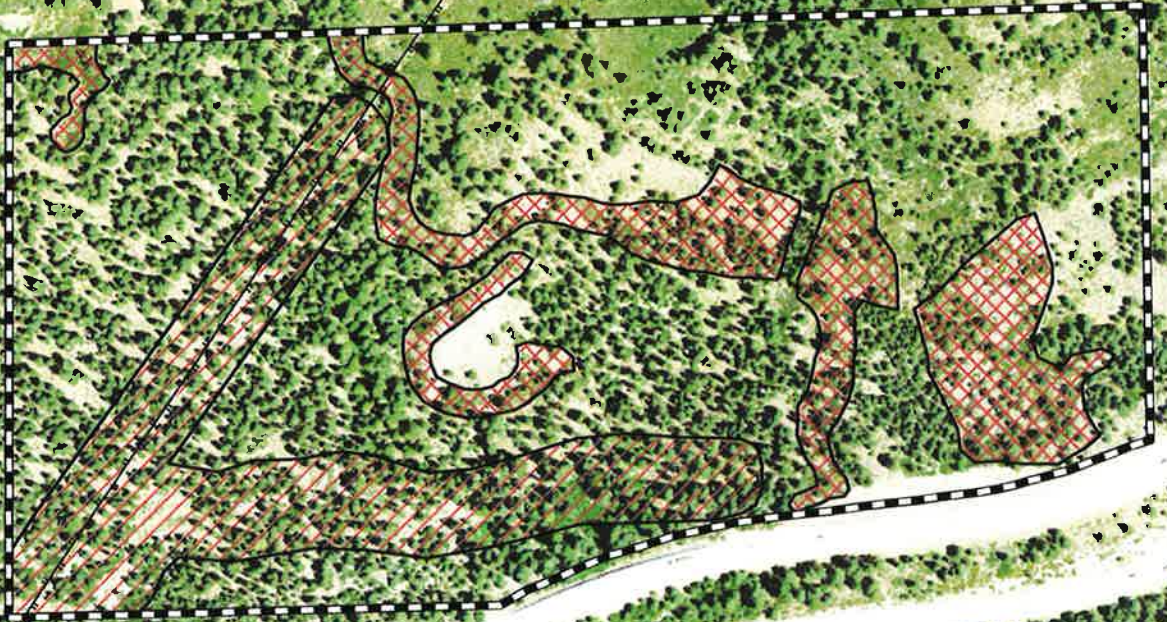
- Property Boundary
- Project Area 1
- Project Area 2
- Interstate 80
- Roads
- Skid Trail
- Landing
- Watercourses
- Telephone Line (Disconnected) / Skid Trail
- Transmission Line

0 250 500 1,000 Feet

Map 3.1.1 - Future Projects Map



**McDonagh (Donner) Property**  
**Portion of the S ½, SW ¼, Section 12, T17N., R15E., MDB&M.**  
**Nevada County, CA. APN 17-020-17**  
**USGS Quarangle Norden 1979**



## Legend



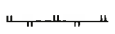
Property Boundary



Project Area 1



Project Area 2



Telephone Line (Disconnected) / Skid Trail

0 250 500 1,000 Feet



Map 4.1 - Aerial Photograph



**McDonagh (Donner) Property**  
**Portion of the S ½, SW ¼, Section 12, T17N., R15E., MDB&M.**  
**Nevada County, CA. APN 17-020-17**  
**USGS Quarangle Norden 1979**



## Legend



Property Boundary

0 250 500 1,000 Feet



## Appendix 2 – Biological

### Recommendations

(1) If present, rare plants may be adversely affected by the heat of large burn piles and mechanical disturbance. Surveys during the appropriate blooming period are recommended in openings, along roadways and former log decks. If plants are discovered, a Special Treatment Area should be flagged around the area and an alternate site for the burn pile should be designated.

(2) If herbicide treatments are used, the DF&W recommends a foliar or stump treatment to minimize spread to non-target, potentially rare species. Minimize drift hazards by using low-volatility herbicides. If broadcast and/or pre-emergent treatments are planned, survey as described in Recommendation 1 prior to application. Ensure that the pest control advisor is aware of the potential to impact to flora and fauna when developing his/her recommendations for herbicide use. Label requirements must be followed.

(3) Fish and Wildlife Code Section 3503.5 states that it is unlawful to take, possess, destroy any birds-of-prey, or to take, possess, or destroy the nest or eggs of any such bird. The measures outlined below are recommended to avoid take of listed and non-listed raptors.

a) If operations will commence during the critical period (identified above), conduct a walk-through survey of the project area no more than 3 weeks prior to commencing operations to look for signs of nest occupancy. This walk-through survey will include

examination of the canopy trees for stick nests, cavities, and/or the presence of whitewash or prey remains or any sighting / vocalization of a territorial raptor.

b) If an active raptor or owl nest and/or a raptor exhibiting territorial actions (calling, swooping, following the surveyor, or returning to the approximate area of discovery) is discovered prior to commencing operations the following measures should apply.

(1) If a **listed** species is discovered prior to or during operations, the operator will cease operations within one-quarter mile of the discovery and contact the RPF to coordinate with DF&W for consultation.

(2) If an active nest of a **non-listed** raptor is discovered during operations, a buffer will be established at a distance that minimizes disturbance (flushing from the nest, any agitation), protected from human disturbance and access should be restricted.

The DF&W strongly encourages reporting sightings of sensitive plant and animal species.

### CDFW's California Natural Diversity Database

The purpose of the Biological Resources Inventory is to identify potential vascular plant, invertebrate, fish, amphibian, reptile, bird, and mammal species and their habitat that potentially could exist on the property. Potentially occurring species considered in this inventory included federal and state-listed threatened, endangered and candidate species as well as species included in California Native Plant Society Lists 1-4.

The project area is within the range and has the potential suitable reproductive or foraging habitat for several listed, special status, and potentially sensitive species. The following list identifies those species. Sensitive plant and wildlife species with a potential to occur on the project site were identified through a search of (CNDDB, October 2016).

**Listing, Rank and Status definitions can be found at the end of the table.**

Scientific Name	Common Name	Federal Listing	State Listing	Global Rank	State Rank	CA Rare Plant Rank	CDFW Status
<i>Bruchia bolanderi</i>	Bolander's bruchia			G3G4	S3	4.2	
<i>Viola tomentosa</i>	felt-leaved violet			G3	S3	4.2	
<i>Meesia triquetra</i>	three-ranked hump moss			G5	S4	4.2	
<i>Epilobium howellii</i>	subalpine fireweed			G4	S4	4.3	
<i>Lewisia serrata</i>	saw-toothed lewisia			G2	S2	1B.1	
<i>Rorippa subumbellata</i>	Tahoe yellow cress		Endangered	G1	S1	1B.1	
<i>Eriogonum umbellatum</i> var. <i>torreyanum</i>	Donner Pass buckwheat			G5T2	S2	1B.2	
<i>Arabis rigidissima</i> var. <i>demota</i>	Galena Creek rockcress			G3T3Q	S1	1B.2	
<i>Ivesia sericoleuca</i>	Plumas ivesia			G2	S2	1B.2	
<i>Juncus luciensis</i>	Santa Lucia dwarf rush			G3	S3	1B.2	
<i>Phacelia stebbinsii</i>	Stebbins' phacelia			G3	S3	1B.2	
<i>Astragalus austinae</i>	Austin's astragalus			G2G3	S2S3	1B.3	
<i>Carex davyi</i>	Davy's sedge			G3	S3	1B.3	
<i>Lewisia longipetala</i>	long-petaled lewisia			G3	S3	1B.3	
<i>Erigeron miser</i>	starved daisy			G3	S3	1B.3	
<i>Rhamnus alnifolia</i>	alder buckthorn			G5	S3	2B.2	
<i>Meesia uliginosa</i>	broad-nerved hump moss			G5	S3	2B.2	
<i>Scutellaria galericulata</i>	marsh skullcap			G5	S2	2B.2	
<i>Botrychium minganense</i>	Mingan moonwort			G4G5	S3	2B.2	
<i>Carex limosa</i>	mud sedge			G5	S3	2B.2	
<i>Sphaeralcea munroana</i>	Munro's desert mallow			G4	S1	2B.2	
<i>Potamogeton epihydrus</i>	Nuttall's ribbon-leaved pondweed			G5	S2S3	2B.2	
<i>Packera indecora</i>	rayless mountain ragwort			G5	S2	2B.2	

Scientific Name	Common Name	Federal Listing	State Listing	Global Rank	State Rank	CA Rare Plant Rank	CDFW Status
<i>Mertensia oblongifolia</i> var. <i>oblongifolia</i>	sagebrush bluebells			G5T4	S2	2B.2	
<i>Botrychium crenulatum</i>	scalloped moonwort			G4	S3	2B.2	
<i>Glyceria grandis</i>	American manna grass			G5	S3	2B.3	
<i>Botrychium lunaria</i>	common moonwort			G5	S2	2B.3	
<i>Drosera anglica</i>	English sundew			G5	S2	2B.3	
<i>Claytonia megarhiza</i>	fell-fields claytonia			G5	S2	2B.3	
<i>Nardia hiroschii</i>	Hiroshi's flapwort			G5	S1	2B.3	
<i>Potamogeton robbinsii</i>	Robbins' pondweed			G5	S3	2B.3	
<i>Artemisia tripartita</i> ssp. <i>tripartita</i>	threetip sagebrush			G5T4T5	S2	2B.3	
<i>Botrychium ascendens</i>	upswept moonwort			G3G4	S2	2B.3	
<i>Potamogeton praelongus</i>	white-stemmed pondweed			G5	S2	2B.3	
<i>Taxidea taxus</i>	American badger			G5	S3		SSC
<i>Desmona bethula</i>	amphibious caddisfly			G2G3	S2S3		
<i>Haliaeetus leucocephalus</i>	bald eagle	Delisted	Endangered	G5	S3		FP
<i>Cypseloides niger</i>	black swift			G4	S2		SSC
<i>Picoides arcticus</i>	black-backed woodpecker			G5	S2		
<i>Gulo gulo</i>	California wolverine		Threatened	G4	S1		FP
<i>Lepidostoma ermanae</i>	Cold Spring caddisfly			G1G2	S1S2		
<i>Accipiter cooperii</i>	Cooper's hawk			G5	S4		WL
Fen	Fen			G2	S1.2		
<i>Pekania pennanti</i>	fisher - West Coast DPS	Proposed Threatened	Candidate Threatened	G5T2T3Q	S2S3		SSC
<i>Ochotona princeps schisticeps</i>	gray-headed pika			G5T2T4	S2S4		
<i>Grus canadensis tabida</i>	greater sandhill crane		Threatened	G5T4	S2		FP

Scientific Name	Common Name	Federal Listing	State Listing	Global Rank	State Rank	CA Rare Plant Rank	CDFW Status
<i>Histrionicus histrionicus</i>	harlequin duck			G4	S1		SSC
<i>Ecclisomyia bilera</i>	Kings Creek ecclisomyian caddisfly			G1G2	S1S2		
<i>Oncorhynchus clarkii henshawi</i>	Lahontan cutthroat trout	Threatened		G4T3	S2		
<i>Myotis volans</i>	long-legged myotis			G5	S3		
<i>Bombus morrisoni</i>	Morrison bumble bee			G4G5	S1S2		
<i>Accipiter gentilis</i>	northern goshawk			G5	S3		SSC
<i>Pandion haliaetus</i>	osprey			G5	S4		WL
<i>Goeracea oregona</i>	Sagehen Creek goeracean caddisfly			G3	S1S2		
<i>Martes caurina sierrae</i>	Sierra marten			G5T3	S3		
<i>Aplodontia rufa californica</i>	Sierra Nevada mountain beaver			G5T3T4	S2S3		SSC
<i>Vulpes vulpes necator</i>	Sierra Nevada red fox	Candidate	Threatened	G5T1T2	S1		
<i>Lepus americanus tahoensis</i>	Sierra Nevada snowshoe hare			G5T3T4Q	S2		SSC
<i>Rana sierrae</i>	Sierra Nevada yellow-legged frog	Endangered	Threatened	G1	S1		WL
<i>Lasionycteris noctivagans</i>	silver-haired bat			G5	S3S4		
<i>Ambystoma macrodactylum sigillatum</i>	southern long-toed salamander			G5T4	S3		SSC
<i>Bombus occidentalis</i>	western bumble bee			G2G3	S1		
<i>Margaritifera falcata</i>	western pearlshell			G4G5	S1S2		
<i>Empidonax traillii</i>	willow flycatcher		Endangered	G5	S1S2		
<i>Setophaga petechia</i>	yellow warbler			G5	S3S4		SSC

## GLOBAL RANKING

The *global rank* is a reflection of the overall status of an element throughout its global range. **Both Global and State ranks represent a letter + number score that reflects a combination of Rarity, Threat and Trend factors, with weighting being heavier on Rarity than the other two.**

## SPECIES OR NATURAL COMMUNITY LEVEL

**G1 = Critically Imperiled**—At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.

**G2 = Imperiled**—At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.

**G3 = Vulnerable**—At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.

**G4 = Apparently Secure**—Uncommon but not rare; some cause for long-term concern due to declines or other factors.

**G5 = Secure**—Common; widespread and abundant.

## SUBSPECIES LEVEL

Subspecies receive a **T-rank** attached to the G-rank. With the subspecies, the G-rank reflects the condition of the entire species, whereas the T-rank reflects the global situation of just the subspecies or variety. For example: *Chorizanthe robusta* var. *hartwegii* is ranked G2T1. The G-rank refers to the whole species range i.e., *Chorizanthe robusta*. The T-rank refers only to the global condition of var. *hartwegii*.

## STATE RANKING

The *state rank* (S-rank) is assigned much the same way as the global rank, but state ranks refer to the imperilment status only within California's state boundaries.

**S1 = Critically Imperiled**—Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.

**S2 = Imperiled**—Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state.

**S3 = Vulnerable**—Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state.

**S4 = Apparently Secure**—Uncommon but not rare in the state; some cause for long-term concern due to declines or other factors.

**S5 = Secure**—Common, widespread, and abundant in the state.

### Notes:

1. Other considerations used when ranking a species or natural community include the pattern of distribution of the element on the landscape, fragmentation of the population/stands, and historical extent as compared to its modern range. It is important to take a **bird's eye or aerial view** when ranking sensitive elements rather than simply counting element occurrences.

2. Uncertainty about the rank of an element is expressed in two major ways:

By expressing the ranks as a **range** of values: e.g., S2S3 means the rank is somewhere between S2 and S3.

By adding a ? to the rank: e.g., S2? This represents more certainty than S2S3, but less certainty than S2.



### 3. Other symbols:

GH All sites are **historical**; the element has not been seen for at least 20 years, but suitable habitat still exists (SH = All California sites are historical).

GX All sites are **extirpated**; this element is extinct in the wild (SX = All California sites are extirpated).

GXC Extinct in the wild; exists in cultivation.

G1Q The element is very rare, but there are **taxonomic questions** associated with it.

T Rank applies to a subspecies or variety.

### California Rare Plant Ranks

1A. Presumed extirpated in California and either rare or extinct elsewhere

1B. Rare or Endangered in California and elsewhere

2A. Presumed extirpated in California, but more common elsewhere

2B. Rare or Endangered in California, but more common elsewhere

3. Plants for which we need more information - Review list

4. Plants of limited distribution - Watch list

### Calif Dept. of Fish & Wildlife – Status

Fully Protected CDFW - FP

Species of Special Concern CDFW - SSC

Watch List CDFW - WL

## Appendix 3 –Archaeology

The purpose of the Cultural Resources section is the identification and, to the extent possible, preservation of archaeological and historical resources on the Property.

An archaeological records check **MUST BE** conducted by North Central Information Center prior to any on-site activities utilizing CFIP funding.

