

**SPECIAL-STATUS PLANTS**  
**STUDY REPORT**  
**DON PEDRO PROJECT**  
**FERC NO. 2299**



**Prepared for:**  
**Turlock Irrigation District – Turlock, California**  
**Modesto Irrigation District – Modesto, California**

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# Special-Status Plants Study Report

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## List of Acronyms

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ac .....	acres
ACEC .....	Area of Critical Environmental Concern
AF .....	acre-feet
ACOE .....	U.S. Army Corps of Engineers
ADA .....	Americans with Disabilities Act
ALJ .....	Administrative Law Judge
APE .....	Area of Potential Effect
ARMR .....	Archaeological Resource Management Report
BA .....	Biological Assessment
BDCP .....	Bay-Delta Conservation Plan
BLM .....	U.S. Department of the Interior, Bureau of Land Management
BLM-S .....	Bureau of Land Management – Sensitive Species
BMI .....	Benthic macroinvertebrates
BMP .....	Best Management Practices
BO .....	Biological Opinion
CalEPPC .....	California Exotic Pest Plant Council
CalSPA .....	California Sports Fisherman Association
CAS .....	California Academy of Sciences
CCC .....	Criterion Continuous Concentrations
CCIC .....	Central California Information Center
CCSF .....	City and County of San Francisco
CCVHJV .....	California Central Valley Habitat Joint Venture
CD .....	Compact Disc
CDBW .....	California Department of Boating and Waterways
CDEC .....	California Data Exchange Center
CDFA .....	California Department of Food and Agriculture
CDFG .....	California Department of Fish and Game (as of January 2013, Department of Fish and Wildlife [CDFW])
CDMG .....	California Division of Mines and Geology
CDOF .....	California Department of Finance
CDPH .....	California Department of Public Health



CDPR .....	California Department of Parks and Recreation
CDSOD .....	California Division of Safety of Dams
CDWR.....	California Department of Water Resources
CE .....	California Endangered Species
CEII.....	Critical Energy Infrastructure Information
CEQA.....	California Environmental Quality Act
CESA .....	California Endangered Species Act
CFR .....	Code of Federal Regulations
cfs .....	cubic feet per second
CGS .....	California Geological Survey
CMAP .....	California Monitoring and Assessment Program
CMC.....	Criterion Maximum Concentrations
CNDDB.....	California Natural Diversity Database
CNPS.....	California Native Plant Society
CORP .....	California Outdoor Recreation Plan
CPUE .....	Catch Per Unit Effort
CRAM.....	California Rapid Assessment Method
CRLF.....	California Red-Legged Frog
CRRF .....	California Rivers Restoration Fund
CSAS.....	Central Sierra Audubon Society
CSBP.....	California Stream Bioassessment Procedure
CT .....	California Threatened Species
CTR.....	California Toxics Rule
CTS .....	California Tiger Salamander
CVRWQCB .....	Central Valley Regional Water Quality Control Board
CWA .....	Clean Water Act
CWHR.....	California Wildlife Habitat Relationship
Districts .....	Turlock Irrigation District and Modesto Irrigation District
DLA .....	Draft License Application
DPRA.....	Don Pedro Recreation Agency
DPS .....	Distinct Population Segment
EA .....	Environmental Assessment
EC .....	Electrical Conductivity

EFH.....	Essential Fish Habitat
EIR .....	Environmental Impact Report
EIS.....	Environmental Impact Statement
EPA.....	U.S. Environmental Protection Agency
ESA.....	Federal Endangered Species Act
ESRCD.....	East Stanislaus Resource Conservation District
ESU .....	Evolutionary Significant Unit
EWUA.....	Effective Weighted Useable Area
FERC.....	Federal Energy Regulatory Commission
FFS .....	Foothills Fault System
FL.....	Fork length
FMU .....	Fire Management Unit
FOT .....	Friends of the Tuolumne
FPC .....	Federal Power Commission
ft/mi.....	feet per mile
FWCA.....	Fish and Wildlife Coordination Act
FYLF.....	Foothill Yellow-Legged Frog
g.....	grams
GIS .....	Geographic Information System
GLO .....	General Land Office
GPS .....	Global Positioning System
HCP.....	Habitat Conservation Plan
HHWP.....	Hetch Hetchy Water and Power
HORB .....	Head of Old River Barrier
HPMP.....	Historic Properties Management Plan
ILP.....	Integrated Licensing Process
ISR .....	Initial Study Report
ITA.....	Indian Trust Assets
kV.....	kilovolt
m .....	meters
M&I.....	Municipal and Industrial
MCL.....	Maximum Contaminant Level
mg/kg .....	milligrams/kilogram

mg/L	milligrams per liter
mgd	million gallons per day
mi	miles
mi <sup>2</sup>	square miles
MID	Modesto Irrigation District
MOU	Memorandum of Understanding
MSCS	Multi-Species Conservation Strategy
msl	mean sea level
MVA	Megavolt Ampere
MW	megawatt
MWh	megawatt hour
mya	million years ago
NAE	National Academy of Engineering
NAHC	Native American Heritage Commission
NAS	National Academy of Sciences
NAVD 88	North American Vertical Datum of 1988
NAWQA	National Water Quality Assessment
NCCP	Natural Community Conservation Plan
NEPA	National Environmental Policy Act
ng/g	nanograms per gram
NGOs	Non-Governmental Organizations
NHI	Natural Heritage Institute
NHPA	National Historic Preservation Act
NISC	National Invasive Species Council
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPS	U.S. Department of the Interior, National Park Service
NRCS	National Resource Conservation Service
NRHP	National Register of Historic Places
NRI	Nationwide Rivers Inventory
NTU	Nephelometric Turbidity Unit
NWI	National Wetland Inventory

NWIS .....	National Water Information System
NWR .....	National Wildlife Refuge
NGVD 29 .....	National Geodetic Vertical Datum of 1929
O&M .....	operation and maintenance
OEHHA .....	Office of Environmental Health Hazard Assessment
ORV .....	Outstanding Remarkable Value
PAD .....	Pre-Application Document
PDO .....	Pacific Decadal Oscillation
PEIR .....	Program Environmental Impact Report
PGA .....	Peak Ground Acceleration
PHG .....	Public Health Goal
PM&E .....	Protection, Mitigation and Enhancement
PMF .....	Probable Maximum Flood
POAOR .....	Public Opinions and Attitudes in Outdoor Recreation
ppb .....	parts per billion
ppm .....	parts per million
PSP .....	Proposed Study Plan
QA .....	Quality Assurance
QC .....	Quality Control
RA .....	Recreation Area
RBP .....	Rapid Bioassessment Protocol
Reclamation .....	U.S. Department of the Interior, Bureau of Reclamation
RM .....	River Mile
RMP .....	Resource Management Plan
RP .....	Relicensing Participant
RSP .....	Revised Study Plan
RST .....	Rotary Screw Trap
RWF .....	Resource-Specific Work Groups
RWG .....	Resource Work Group
RWQCB .....	Regional Water Quality Control Board
SC .....	State candidate for listing under CESA
SCD .....	State candidate for delisting under CESA
SCE .....	State candidate for listing as endangered under CESA

SCT .....	State candidate for listing as threatened under CESA
SD1 .....	Scoping Document 1
SD2 .....	Scoping Document 2
SE .....	State Endangered Species under the CESA
SFP .....	State Fully Protected Species under CESA
SFPUC .....	San Francisco Public Utilities Commission
SHPO .....	State Historic Preservation Office
SJRA .....	San Joaquin River Agreement
SJRG .....	San Joaquin River Group Authority
SJTA .....	San Joaquin River Tributaries Authority
SPD .....	Study Plan Determination
SRA .....	State Recreation Area
SRMA .....	Special Recreation Management Area or Sierra Resource Management Area (as per use)
SRMP .....	Sierra Resource Management Plan
SRP .....	Special Run Pools
SSC .....	State species of special concern
ST .....	California Threatened Species under the CESA
STORET .....	Storage and Retrieval
SWAMP .....	Surface Water Ambient Monitoring Program
SWE .....	Snow-Water Equivalent
SWRCB .....	State Water Resources Control Board
TAC .....	Technical Advisory Committee
TAF .....	thousand acre-feet
TCP .....	Traditional Cultural Properties
TDS .....	Total Dissolved Solids
TID .....	Turlock Irrigation District
TMDL .....	Total Maximum Daily Load
TOC .....	Total Organic Carbon
TRT .....	Tuolumne River Trust
TRTAC .....	Tuolumne River Technical Advisory Committee
UC .....	University of California
USDA .....	U.S. Department of Agriculture

USDOC .....	U.S. Department of Commerce
USDOI .....	U.S. Department of the Interior
USFS .....	U.S. Department of Agriculture, Forest Service
USFWS .....	U.S. Department of the Interior, Fish and Wildlife Service
USGS .....	U.S. Department of the Interior, Geological Survey
USR.....	Updated Study Report
UTM.....	Universal Transverse Mercator
VAMP .....	Vernalis Adaptive Management Plan
VELB .....	Valley Elderberry Longhorn Beetle
VRM .....	Visual Resource Management
WPT .....	Western Pond Turtle
WSA.....	Wilderness Study Area
WSIP .....	Water System Improvement Program
WWTP .....	Wastewater Treatment Plant
WY .....	water year
μS/cm.....	microSeimens per centimeter

## 1.0 INTRODUCTION

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### 1.1 Background

Turlock Irrigation District (TID) and Modesto Irrigation District (MID) (collectively, the Districts) are the co-licensees of the 168-megawatt (MW) Don Pedro Project (Project) located on the Tuolumne River in western Tuolumne County in the Central Valley region of California. The Don Pedro Dam is located at river mile (RM) 54.8 and the Don Pedro Reservoir has a normal maximum water surface elevation of 830 ft above mean sea level (msl; NGVD 29). At elevation 830 ft, the reservoir stores over 2,000,000 acre-feet (AF) of water and has a surface area slightly less than 13,000 acres (ac). The watershed above Don Pedro Dam is approximately 1,533 square miles (mi<sup>2</sup>). The Project is designated by the Federal Energy Regulatory Commission (FERC) as project no. 2299.

Both TID and MID are local public agencies authorized under the laws of the State of California to provide water supply for irrigation and municipal and industrial (M&I) uses and to provide retail electric service. The Project serves many purposes including providing water storage for the beneficial use of irrigation of over 200,000 ac of prime Central Valley farmland and for the use of M&I customers in the City of Modesto (population 210,000). Consistent with the requirements of the Raker Act passed by Congress in 1913 and agreements between the Districts and City and County of San Francisco (CCSF), the Project reservoir also includes a “water bank” of up to 570,000 AF of storage. CCSF may use the water bank to more efficiently manage the water supply from its Hetch Hetchy water system while meeting the senior water rights of the Districts. The “water bank” within Don Pedro Reservoir provides significant benefits for CCSF’s 2.6 million customers in the San Francisco Bay Area.

The Project also provides storage for flood management purposes in the Tuolumne and San Joaquin rivers in coordination with the U.S. Army Corps of Engineers (ACOE). Other important uses supported by the Project are recreation, protection of the anadromous fisheries in the lower Tuolumne River, and hydropower generation.

The Project Boundary extends from RM 53.2, which is one mile below the Don Pedro powerhouse, upstream to RM 80.8 at an elevation corresponding to the 845 ft contour (31 FPC 510 [1964]). The Project Boundary encompasses approximately 18,370 ac with 78 percent of the lands owned jointly by the Districts and the remaining 22 percent (approximately 4,000 ac) owned by the United States and managed as a part of the U.S. Bureau of Land Management (BLM) Sierra Resource Management Area.

The primary Project facilities include the 580-foot-high Don Pedro Dam and Reservoir completed in 1971; a four-unit powerhouse situated at the base of the dam; related facilities including the Project spillway, outlet works, and switchyard; four dikes (Gasburg Creek Dike and Dikes A, B, and C); and three developed recreational facilities (Fleming Meadows, Blue Oaks, and Moccasin Point Recreation Areas). The location of the Project and its primary facilities is shown in Figure 1.1-1.

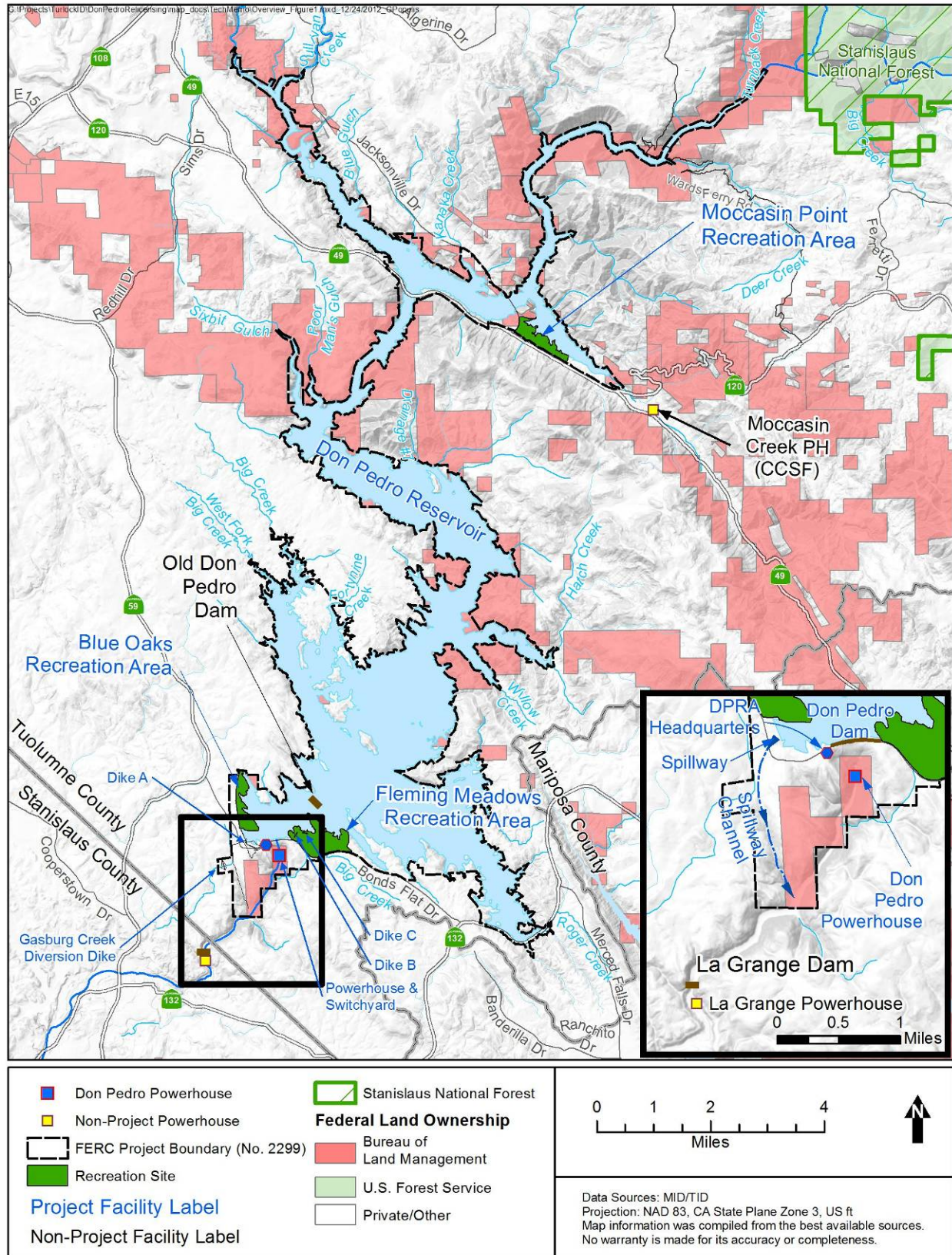


Figure 1.1-1. Don Pedro Project location.



## 1.2 Relicensing Process

The current FERC license for the Project expires on April 30, 2016, and the Districts will apply for a new license no later than April 30, 2014. The Districts began the relicensing process by filing a Notice of Intent and Pre-Application Document (PAD) with FERC on February 10, 2011, following the regulations governing the Integrated Licensing Process (ILP). The Districts' PAD included descriptions of the Project facilities, operations, license requirements, and Project lands as well as a summary of the extensive existing information available on Project area resources. The PAD also included ten draft study plans describing a subset of the Districts' proposed relicensing studies. The Districts then convened a series of Resource Work Group meetings, engaging agencies and other relicensing participants in a collaborative study plan development process culminating in the Districts' Proposed Study Plan (PSP) and Revised Study Plan (RSP) filings to FERC on July 25, 2011 and November 22, 2011, respectively.

On December 22, 2011, FERC issued its Study Plan Determination (SPD) for the Project, approving, or approving with modifications, 34 studies proposed in the RSP that addressed Cultural and Historical Resources, Recreational Resources, Terrestrial Resources, and Water and Aquatic Resources. In addition, as required by the SPD, the Districts filed three new study plans (W&AR-18, W&AR-19, and W&AR-20) on February 28, 2012 and one modified study plan (W&AR-12) on April 6, 2012. Prior to filing these plans with FERC, the Districts consulted with relicensing participants on drafts of the plans. FERC approved or approved with modifications these four studies on July 25, 2012.

Following the SPD, a total of seven studies (and associated study elements) that were either not adopted in the SPD, or were adopted with modifications, formed the basis of Study Dispute proceedings. In accordance with the ILP, FERC convened a Dispute Resolution Panel on April 17, 2012 and the Panel issued its findings on May 4, 2012. On May 24, 2012, the Director of FERC issued his Formal Study Dispute Determination, with additional clarifications related to the Formal Study Dispute Determination issued on August 17, 2012.

This study report describes the objectives, methods, and results of the Special-Status Plants Study (TR-01) as implemented by the Districts in accordance with FERC's SPD and subsequent study modifications and clarifications. On January 17, 2013, the Districts filed the Initial Study Report for the Don Pedro Project. During the January 31, 2013 Initial Study Report Meeting, CDFW requested that the Districts provide a log of the reference populations and herbarium specimens used to verify special-status plants on the special-status plant target list used for this study. In a letter to FERC dated March 11, 2013, the BLM requested that the Districts provide all of the raw data on special-status plants collected by the Districts during the Special-Status Plants Study. On October 18, 2013, the Districts provided the requested information to both agencies.

Documents relating to the Project relicensing are publicly available on the Districts' relicensing website at [www.donpedro-relicensing.com](http://www.donpedro-relicensing.com).

### 1.3 Study Plan

Operation and maintenance (O&M) of the Project and/or Project-related recreation activities may have the potential to affect special-status plants. These effects may be direct (i.e., result of ground disturbing activities such as mechanical or chemical clearing of vegetation or trampling of plants), indirect (i.e., due to activities such as soil compaction which limits plant growth), or cumulative (i.e., caused by a Project activity in association with a non-Project activity, such as loss of habitat due to the introduction of invasive plants from a non-Project vector).

FERC's SPD approved with modifications the Districts' Special-Status Plants study plan as provided in the Districts' RSP filing dated November 22, 2011. In its SPD, FERC ordered that the Districts include in their study area lands up to 300 feet outside the Project Boundary within high-use recreation areas or the BLM's Red Hills ACEC, and to document the full extent of each special-status plant occurrence, up to one quarter mile outside the Project Boundary.

The Districts carried out the Special-Status Plants study consistent with each of these directives.

For the purpose of this study, special-status plants were defined as plant species that are:

- Found on public land administered by the United States Department of Interior, Bureau of Land Management (BLM) and formally listed by the BLM as Sensitive Species (BLM-S).
- Listed under the federal Endangered Species Act (ESA) as Proposed or a Candidate for listing as endangered or threatened or proposed for delisting.
- Listed under the State of California Endangered Species Act (CESA) as proposed for listing.
- Found on the California Department of Fish and Game's (CDFG) list of California Rare (SR) species listed under the Native Species Plant Protection Act of 1977.
- Found on the California Native Plant Society (CNPS) Inventory of Rare Plants and formally listed as a CNPS 1, 2, or 3 plants (CNPS 1, CNPS 2, CNPS 3).

Plants listed under the federal ESA or the CESA – even if they are also considered BLM-S, CNPS 1, CNPS 2 or CNPS 3 – are considered separately, in Study Report TR-02, ESA- and CESA-listed Plants.

## **2.0                    STUDY GOALS AND OBJECTIVES**

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The goal of the study is to determine the presence and distribution of special-status plants within the Project study area (Section 3.0) and determine whether continued Project O&M or recreational use of Project facilities have a measurable, adverse effect on special-status plants.

The study focused on gathering the information necessary to perform this analysis and evaluate the Project's potential to adversely affect special-status plants.

### 3.0 STUDY AREA

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The study area consisted of lands within the Project Boundary that are subject to Project-related O&M or recreation activities, including high-use dispersed recreation areas. The study area is shown in Figure 3.0-1 and included the following specific areas:

- The Blue Oaks, Fleming Meadows, and Moccasin Point Recreation areas and related facilities, including the 3.5-mile Don Pedro Shoreline Trail;
- High-use dispersed recreation areas, as identified by Districts' staff;
- Lands within the Project Boundary designated as part of the BLM's Red Hills Area of Critical Environmental Concern (ACEC);
- Don Pedro Dam, Powerhouse, and Switchyard, including related maintenance and storage facilities and the powerhouse access road;
- The Don Pedro Spillway channel and related access roads;
- The Gasburg Creek diversion dike and related access roads;
- Employee housing near Don Pedro Dam;
- Don Pedro Recreation Agency headquarters and visitor center;
- Dikes A, B, and C in the vicinity of Don Pedro Dam; and
- The Ward's Ferry take-out.

The study area also included the following habitats adjacent to the lands specified above:

- Out to 300 feet (ft) or the Project Boundary, whichever is greater, within the high-use dispersed recreation areas and facilities;
- Out to 300 ft from the high water mark of the Project reservoir, or the Project Boundary, whichever is greater, within BLM lands in the Red Hills ACEC; and
- For special-status plant occurrences found within the study area, to the full extent of the occurrence, or to one quarter mile outside the Project Boundary, whichever was less.<sup>1</sup>

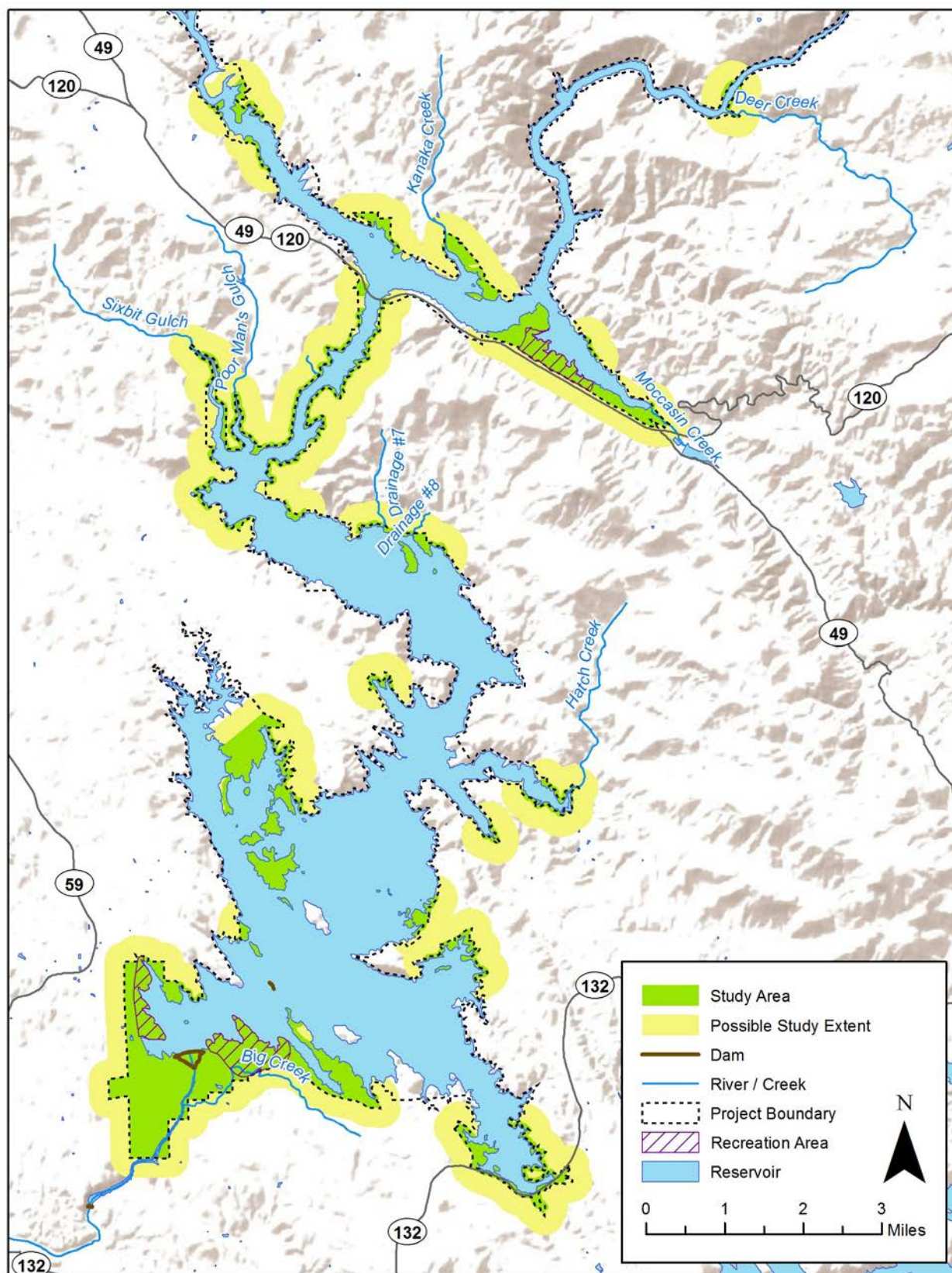
Per the study plan, areas with unsafe terrain, as identified in the field, were not surveyed.<sup>2</sup> These included dangerously steep slopes, areas of thick poison oak (*Toxicodendron diversilobum*) and other areas that were unsafe for field crews to enter. This included some of the steep slopes of below the dam; a steep slope, composed of thick chaparral, at Moccasin Point Recreation Area; a piece of the Willow Creek arm, due to impenetrable chamise (*Adenostoma fasciculatum*), steep slopes and poison oak; the very tip of the Shawmut Road area, due to steep slopes; the steepest sections of the Ward's Ferry area; steep slopes in the upper area of Woods Creek Arm and a section of steep slopes on the edge of the Ramos Creek area.

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<sup>1</sup> For the purpose of this study, this area is referred to as the possible study extent.

<sup>2</sup> A small percentage (5 percent) of the study area was inaccessible due to unsafe terrain (approximately 200 acres).

The Districts requested access to private lands within the possible study extent in a letter sent to 303 landowners on February 12, 2012. Of these, 83 granted and 220 denied access to their land; private lands for which access was denied, or for which no response was received, were not surveyed.



**Figure 3.0-1. Special-status plants study area.**

## 4.0 METHODOLOGY

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The study was conducted in five steps: (1) define the study area and gather data and information to prepare for the field effort, including known plant occurrences; (2) conduct the surveys for the study area; (3) compile and quality assure/quality control data (QA/QC); (4) consult with Districts' operations staff and recreation personnel to identify Project O&M and recreation, or other Project-related activities, that typically occur in the area of special-status plant occurrences and have the potential to affect these occurrences; and (5) prepare a report on the study.

### 4.1 Gather Data and Prepare for Field Effort

A literature review was conducted prior to field surveys to: (1) identify potential special-status plants in the study area, and (2) identify locations where special-status plants were previously observed. The Districts: (1) reviewed the California Native Plant Society (CNPS) database (CNPS 2012) within the nine United States Geological Survey (USGS) quadrangle (quad) maps around the FERC Project Boundary; and (2) queried the California Natural Diversity Database (CNDDDB) Rarefind 4 (CDFG 2012). Quadrangles containing the Project Boundary include Chinese Camp, La Grange, Moccasin, Penon Blanco Peak, Sonora, and Standard. Based on this information, as well as the Project's elevation range and habitats in this region of the Tuolumne River, the Districts' study plan identified 31 plant species that are considered special-status and may have a reasonable potential to be affected by Project O&M and/or recreation activities.

There were CNDDDB records for 28 special-status plant occurrences, comprising seven plant species, located within a one-mile buffer of the Project Boundary. There were nine occurrences of Red Hills onion (*Allium tuolumnense*), six occurrences of Red Hills soaproot (*Chlorogalum grandiflorum*), four occurrences each of Congdon's lomatium (*Lomatium congdonii*) and Red Hills ragwort (*Packera clevelandii*), two occurrences each of shaggyhair lupine (*Lupinus spectabilis*) and Mariposa cryptantha (*Cryptantha mariposae*), and one occurrence of Tuolumne button-celery (*Eryngium pinnatisectum*). Congdon's lomatium, shaggyhair lupine, Red Hills onion, Red Hills ragwort, Red Hills soaproot and Mariposa cryptantha are all BLM-S; Tuolumne button-celery is CNPS-1. The dates on the reports ranged from 1937 to 2007 (CDFG 2012).

A botanical survey of the Red Hills Management Area (now the Red Hills ACEC) was completed in 1984. The surveys located Red Hills onion, Congdon's lomatium, Red Hills soaproot, and Red Hills ragwort (BLM 1985).

Table 4.1-1 provides for each potentially-occurring special-status plant species: (1) status, (2) flowering period, (3) elevation range, (4) habitat requirements, and (5) recorded occurrences in the general Project area.



**Table 4.1-1. Special-status plant species potentially occurring in the Don Pedro FERC Project Boundary.**

Common Name / Scientific Name	Status <sup>1</sup>	Flowering Period	Elevation Range (feet)	Habitat Requirements	Occurrence in USGS Quads Surrounding Project <sup>2,3</sup>
Henderson's bent grass <i>Agrostis hendersonii</i>	CNPS 3	Apr-Jun	200-1,100	Valley and foothill grasslands, vernal pools	New Melones Dam
Jepson's onion <i>Allium jepsonii</i>	CNPS 1B BLM-S	Apr-Aug	950-4,500	Chaparral, cismontane woodland, lower montane coniferous forest	<b>Sonora</b> , Tuolumne
Three-bracted onion <i>Allium tribracteatum</i>	CNPS 1B	Apr-Aug	3,600-10,000	Chaparral, lower montane coniferous forest, upper montane coniferous forest, volcanic soils	Columbia SE, Twain Harte
Red Hills onion <i>Allium tuolumnense</i>	CNPS 1B, BLM-S	Mar-May	950-2,000	Cismontane woodland, serpentine	<b>Sonora, Chinese Camp, Moccasin</b>
Nissanan manzanita <i>Arctostaphylos nissenana</i>	CNPS 1B, BLM-S	Feb-Mar	1,400-3,650	Closed-cone coniferous forest, chaparral	<b>Sonora</b>
Big-scale balsamroot <i>Balsamorhiza macrolepis</i>	CNPS 1B, BLM-S	Mar-Jun	290-3,500	Chaparral, cismontane woodland valley and foothill grassland, sometimes serpentine	Hornitos
Hoover's calycadenia <i>Calycadenia hooveri</i>	CNPS 1B	Jul-Sep	200-1,000	Cismontane woodland, valley and foothill grassland	<b>La Grange</b> , Snelling, Merced Falls, Cooperstown, Keystone
Red Hills soaproot <i>Chlorogalum grandiflorum</i>	CNPS 1B, BLM-S	May-Jun	800-4,250	Chaparral, cismontane woodland, lower montane coniferous forest, serpentine, gabbroic and other soils	<b>Chinese Camp, Sonora</b> , New Melones Dam, Keystone
Small's southern clarkia <i>Clarkia australis</i>	CNPS 1B	May-Aug	2,600-6,900	Cismontane woodland, lower montane coniferous forest	Tuolumne, Twain Harte, Coulterville, Hornitos
Mariposa clarkia <i>Clarkia biloba</i> ssp. <i>australis</i>	CNPS 1B, BLM-S	May-Jul	1,000-3,500	Chaparral, cismontane woodland, serpentine	<b>Sonora</b> , Tuolumne, Twain Harte, Coulterville, Hornitos
Beaked clarkia <i>Clarkia rostrata</i>	CNPS 1B, BLM-S	Apr-May	190-1,700	Cismontane woodland, valley and foothill grassland	<b>Penon Blanco Peak, Moccasin</b> , New Melones Dam, Cooperstown, Snelling, Merced Falls, Coulterville, Hornitos
Hoover's cryptantha <i>Cryptantha hooveri</i>	CNPS 1A	Apr-May	0-500	Inland dunes, valley and foothill grassland	Cooperstown
Mariposa cryptantha <i>Cryptantha mariposae</i>	CNPS 1B, BLM-S	Apr-Jun	600-2,200	Chaparral, serpentine	<b>La Grange, Chinese Camp, Sonora</b> , Keystone, Coulterville, Hornitos
Dwarf downingia <i>Downingia pusilla</i>	CNPS 2	Mar-May	0-1,500	Valley and foothill grassland, vernal pools	<b>La Grange</b> , Cooperstown, Snelling, Merced Falls



Common Name / Scientific Name	Status <sup>1</sup>	Flowering Period	Elevation Range (feet)	Habitat Requirements	Occurrence in USGS Quads Surrounding Project <sup>2,3</sup>
Tuolumne button-celery <i>Eryngium pinnatisectum</i>	CNPS 1B	May-Aug	700-10,000	Cismontane woodland, lower montane coniferous forest, vernal pools, mesic	<b>Standard, Sonora, Chinese Camp, Moccasin</b> , New Melones Dam, Columbia
Spiny-sepaled button-celery <i>Eryngium spinosepalum</i>	CNPS 1B	Apr-May	250-900	Valley and foothill grassland, vernal pools	<b>La Grange</b> , New Melones Dam, Snelling, Merced Falls
Tuolumne fawn lily <i>Erythronium tuolumnense</i>	CNPS 1B, BLM-S	Mar-Jun	1,600-4,200	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest	<b>Standard</b> , Columbia, Columbia SE, Tuolumne, Twain Harte
Delicate bluecup <i>Githopsis tenella</i>	CNPS 1B	May-Jun	3,500-6,500	Chaparral, cismontane woodland	<b>Chinese Camp</b>
Bisbee Peak rush-rose <i>Helianthemum suffrutescens</i>	CNPS 3	Apr-Jun	100-2,800	Chaparral, often serpentine, gabbroic or Ione soils	<b>Sonora</b>
Parry's horkelia <i>Horkelia parryi</i>	CNPS 1B, BLM-S	Apr-Sep	250-3,500	Chaparral, cismontane woodland, Ione formation	Coulterville
Tuolumne iris <i>Iris hartwegii</i> ssp. <i>columbiana</i>	CNPS 1B	May-Jun	1,200-4,700	Cismontane woodland, lower montane coniferous forest	Columbia, Columbia SE
Knotted rush <i>Juncus nodosus</i>	CNPS 2	Jul-Sep	0-6,600	Meadows, seeps, marshes, swamps	<b>La Grange</b> , Cooperstown
Congdon's lomatium <i>Lomatium congdonii</i>	CNPS 1B, BLM-S	Mar-Jun	900-7,000	Chaparral, cismontane woodland, serpentine	<b>Sonora, Chinese Camp, Moccasin</b> , New Melones Dam, Keystone
Stebbins' lomatium <i>Lomatium stebbinsii</i>	CNPS 1B	Mar-May	4,000-6,500	Chaparral, lower montane coniferous forest, gravelly, volcanic clay	Twain Harte
Shaggyhair lupine <i>Lupinus spectabilis</i>	CNPS 1B, BLM-S	Apr-May	800-2,800	Chaparral, cismontane woodland, serpentine	<b>Sonora, Moccasin</b> , New Melones Dam, Groveland, Coulterville, Hornitos
Slender-stemmed monkeyflower <i>Mimulus filicaulis</i>	CNPS 1B, BLM-S	Apr-Aug	2,800-6,000	Cismontane woodland, lower montane coniferous forest, meadows and seeps, upper montane coniferous forest, vernal mesic	Groveland
Pansy-faced monkeyflower <i>Mimulus pulchellus</i>	CNPS 1B	Apr-Jul	1,900-6,700	Lower montane coniferous forest, meadows and seeps, vernal mesic, often disturbed areas	<b>Standard</b> , Angels Camp, Groveland, Twain Harte
Veiny monardella <i>Monardella venosa</i>	CNPS 1B	May-Jul	150-1,500	Cismontane woodland, valley and foothill grassland, heavy clay	New Melones Dam

Common Name / Scientific Name	Status <sup>1</sup>	Flowering Period	Elevation Range (feet)	Habitat Requirements	Occurrence in USGS Quads Surrounding Project <sup>2,3</sup>
Merced monardella <i>Monardella leucocephala</i>	CNPS 1A	May-Aug	100-500	Valley and foothill grassland	<b>La Grange</b> , Cooperstown
Red Hills ragwort <i>Packera clevelandii</i>	CNPS 1B, BLM-S	Jun-Jul	800-1,400	Cismontane woodland, serpentine seeps	<b>Chinese Camp</b> , Moccasin

<sup>1</sup> Special-status:

BLM-S = Bureau of Land Management Sensitive Plant Species

CNPS 1A = California Native Plant Society list presumed extinct in California

CNPS 1B = California Native Plant Society list endangered in California and elsewhere

CNPS 2 = California Native Plant Society list rare/threatened/endangered in California only

CNPS 3 = California Native Plant Society list plants requiring further information

<sup>2</sup> Occurrence in area surrounding Project was based on a nine-quad CNPS quadrangle search.

<sup>3</sup> Quads that are fully or partially included within the Project Boundary are indicated by bold font; quads surrounding, but not included within the Project Boundary are listed in regular font.

<sup>4</sup> According to the Jepson Online Interchange<sup>3</sup>, *Senecio clevelandii* var. *heterophyllus* has been combined with *S. c.* var. *clevelandii* and renamed *Packera clevelandii*

<sup>3</sup> [http://ucjeps.berkeley.edu/interchange/I\\_index\\_supplant.html](http://ucjeps.berkeley.edu/interchange/I_index_supplant.html)

## 4.2 Botanical Surveys

Botanical surveys were performed on approximately 3,870 ac (6.0 square mi) between March 5 and June 29, 2012. Special-status plant surveys were conducted in conjunction with other relicensing studies including ESA- and CESA-listed Plants (Study TR-02); Noxious Weeds (Study TR-04); and ESA-listed Wildlife – Valley Elderberry Longhorn Beetle (Study TR-05). Results of these surveys are discussed in Study Report TR-02, ESA- and CESA-listed Plants; Study Report TR-04, Noxious Weeds; and Study Report TR-05, ESA-Listed Wildlife - Valley Elderberry Longhorn Beetle (TID/MID 2013). Surveys were carried out by qualified botanists on foot and by boat and coincided with blooming periods. Resurveys were conducted at areas and features where potential special-status plant species or plant communities were not at the correct phenology for proper identification during the earlier bloom period, particularly in areas containing late blooming species.

Surveys were floristic in nature and generally followed CDFG's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFG 2009). Plants were identified using the *Jepson Manual of Higher Plants of California* (Baldwin *et al.* 2012), *A field guide to Pacific States wildflowers: Washington, Oregon, California, and adjacent areas* (Niehaus and Ripper 1976), *Trees and shrubs of California* (Stuart and Sawyer, 2001), *Wildflowers of the Sierra Nevada and the Central Valley* (Blackwell, 1999), *Field Guide to the Sedges of the Pacific Northwest* (Wilson *et al.* 2008) and *Selected Plants of Northern California and Adjacent Nevada* (Oswald 2002).

As detailed in the FERC-approved study plan, surveys were conducted using a random meander technique with additional focus in high quality habitat or other areas with a higher probability of supporting special-status plants.

At each special-status plant occurrence, the following information was recorded: digital photograph; estimated area covered by the population; estimated number of individuals; boundary or location of the approximate center of the population; dominant and subdominant vegetation in the area; topographic features; estimated distance to nearest Project facility, feature, or Project-related activity; activities observed in the vicinity of the population that have a potential to adversely affect the population; and estimated phenology and descriptions of reproductive state.

Special-status plant occurrence locations were recorded using a Trimble GeoXT Global Positioning System (GPS) receiver. A single, central point was recorded for each occurrence that was smaller than 0.1 ac. GPS was used to delineate a polygon for occurrences greater than 0.1 ac for most species. Many Mariposa clarkia and beaked clarkia occurrences were large. Due to the frequency and large size of these occurrences, populations were drawn onto aerial field maps, and locations were recorded for population boundary extent. The maps were digitized and populations converted into polygons.

All data were subjected to QA/QC procedures including, but not limited to: daily QA/QC of field data sheets, spot-checks of transcription during data compilation, and comparison of Geographic Information System (GIS) maps with field notes and field maps to verify locations. Data were

entered into a database and crosschecked by a second scientist to ensure data were properly recorded. Maps depicting the occurrences, Project facilities, and features were generated using GIS to display field-collected location information and used as a second method to verify that all special-status plant occurrence locations matched the information on the data sheets. Any data corrections were noted in the Project file.

### **4.3 Consultation with Project O&M Staff**

After all observed special-status plant occurrences were verified and mapped, Project operations staff was consulted to identify Project O&M and Project-related activities that typically occur in the area of the special-status plant occurrences that have a potential to adversely affect the occurrences.

## 5.0 RESULTS

The Districts' surveys identified over 700 vascular plant species and eight special-status plants. A complete list of all plant species found is included in Attachment A. Figures depicting the locations of each special-status plant occurrence are provided in Attachment B.

### 5.1 Special-Status Plants

The Districts recorded a total of 85 occurrences (i.e., either a single plant or a distinct geographic population of plants) of eight different special-status plants, all listed as BLM-S: 57 occurrences on public land administered by the BLM, and 28 occurrences on land owned by the Districts. Table 5.1-1 summarizes the 85 special-status plant occurrences by land ownership.

Seven special-status plant occurrences were found within previously recorded CNDDDB special-status plant populations of the same species, and three occurrences were found adjacent to or near a CNDDDB recorded area of the same species. These included four occurrences of Red Hills onion (occurrence numbers 644, 646, 658, 665<sup>4</sup>) within the area of CNDDDB 14336, two Red Hills soaproot (639, 663) within CNDDDB 13325, and one occurrence of Red Hills ragwort (645) within CNDDDB 3859. One occurrence of Red Hills onion (88) was found adjacent to CNDDDB 3974, and two Congdon's lomatium were found near CNDDDB 13982. Additionally, two previously-recorded CNDDDB occurrences documented in the study area were not located on the Project. These included a CNDDDB record of shaggyhair lupine (60739) from 1937, and a more recent record of Red Hills soaproot (50965).

The most abundant special-status plants were Mariposa clarkia (25 occurrences), Red Hills soaproot (20 occurrences), and Mariposa cryptantha (10 occurrences). A number of serpentine-adapted species were found in the Red Hills ACEC, included Red Hills onion (10 occurrences), Congdon's lomatium (seven occurrences), shaggy-haired lupine (seven occurrences), tripod buckwheat (four occurrences), and Red Hills ragwort (two occurrences).

Specific descriptions of the locations where special-status plants were found are summarized in Sections 5.1.1 through 5.1.8 and described in Attachments B and C.

**Table 5.1-1. Special-status plant species identified in the study area.**

Common Name/Scientific Name	Status <sup>1</sup>	Number of Occurrences by Land Owner	
		Public (BLM)	TID/MID
Red Hills onion <i>Allium tuolumnense</i>	BLM-S, CNPS 1B	10	--
Red Hills soaproot <i>Chlorogalum grandiflorum</i>	BLM-S, CNPS 1B	20	--
Mariposa clarkia <i>Clarkia biloba</i> ssp. <i>australis</i>	BLM-S, CNPS 1B	2	23
Mariposa cryptantha <i>Cryptantha mariposae</i>	BLM-S, CNPS 1B	9	1
Tripod buckwheat <i>Eriogonum tripodum</i>	BLM-S	4	--

<sup>4</sup> Occurrence numbers are not sequential; details on each are provided in Attachments B and C.

Common Name/Scientific Name	Status <sup>1</sup>	Number of Occurrences by Land Owner	
		Public (BLM)	TID/MID
Congdon's lomatium <i>Lomatium congdonii</i>	BLM-S, CNPS 1B	7	--
Shaggyhair lupine <i>Lupinus spectabilis</i>	BLM-S, CNPS 1B	4	3
Red Hills ragwort <i>Packera clevelandii</i>	BLM-S, CNPS 1B	1	1
<b>Total Occurrences</b>		<b>57</b>	<b>28</b>

<sup>1</sup> Special-status:

BLM-S = Bureau of Land Management Sensitive Plants

CNPS 1A = California Native Plant Society list presumed extinct in California

CNPS 1B = California Native Plant Society list endangered in California and elsewhere

CNPS 2 = California Native Plant Society list rare/threatened/endangered in California only

CNPS 3 = California Native Plant Society list plants requiring further information

### 5.1.1 Red Hills onion (BLM-S, CNPS 1B)



Red Hills onion is a perennial herb that grows only on serpentine soils within the Red Hills. One plant can have up to 60 white to pink flowers, which bloom between March and May (BLM 2010d).

The Districts located 10 occurrences of Red Hills onion within the study area, all on public land administered by BLM. Six occurrences were located on Sixbit Gulch, two on Kanaka Point, one near Moccasin Point Recreation Area and one on Poor Man's Gulch. Over 700 individuals were located

over a combined acreage of 0.30. The majority of the plants were in flower or fruit. Associated plant species included gray pine (*Pinus sabiniana*), buckbrush (*Ceanothus cuneatus*) and annual grasses. Potential disturbances around occurrences included noxious weeds and grazing; additionally, parts of some occurrences were below the reservoir high water mark. Other ESA-listed and special-status plants were located with Red Hills onion occurrences, including Layne's ragwort (*Packera layneae*), Congdon's lomatium, Red Hills soaproot, tripod buckwheat, shaggyhair lupine and Mariposa cryptantha. Attachment C lists occurrence information for Red Hills onion; Attachment B provides locations within the study area. Figures 1 and 2 in Attachment D are representative photos of the plant and its characteristic habitat in the study area.

### 5.1.2 Red Hills soaproot (BLM-S, CNPS 1B)

Red Hills soaproot is a perennial herb that grows on serpentine and gabbro in Tuolumne and El Dorado counties. This plant blooms between May and June and generally grows in chaparral (BLM 2010f).

The Districts located 20 occurrences of Red Hills soaproot within the study area, all on public land administered by BLM. Twelve occurrences were located on Sixbit Gulch and eight on Poor Man's Gulch. Over 1,600 individuals were located on a combined area of over 0.35 ac. Red

Hills soaproot occurred primarily in chamise and buckbrush chaparral and foothill gray pine woodland. Other associated species include California melicgrass (*Melica californica*), manyflowered brodiaea (*Dichelostemma multiflorum*), false brome (*Brachypodium distachyon*) and common lomatium (*Lomatium utriculatum*). The majority of the plants were in vegetative form, but approximately 20% were in bloom. Potential disturbances around occurrences included noxious weeds and grazing. Other ESA-listed and special-status plants were located with Red Hills soaproot occurrences, including Layne's ragwort, Red Hills onion, Congdon's lomatium, tripod buckwheat, shaggy-haired lupine and Mariposa cryptantha. Attachment C lists occurrence information for Red Hills soaproot; Attachment B provides locations within the study area. Figures 3 and 4 in Attachment D are representative photos of the plant and its characteristic habitat in the study area.

### 5.1.3 Mariposa clarkia (BLM-S, CNPS 1B)



Mariposa clarkia is an annual herb that grows in chaparral and foothill woodlands, sometimes associated with serpentine soils. This species is known only from Mariposa County and grows principally in the Merced River drainage, below 2,700 ft in elevation. Mariposa clarkia blooms from May to July and has bilobed petals that are bright pink to magenta in color (BLM 2010b).

The Districts located 25 occurrences of Mariposa clarkia; two on public land administered by BLM. Occurrences were located in the Moccasin Point Recreation Area, Rogers Creek Arm, near the Moccasin transmission line and on Shawmut Road. This plant had not been documented previously within a one-mile buffer of the FERC Project Boundary. Over 35,000 individual plants were found, and the estimated area of the combined occurrences is almost 0.07 ac. Associated plant species included blue oak, gray pine, buckbrush, poison oak, and annual grasses. The majority of individuals in the occurrences were in flower. Potential disturbances around occurrences included recreation, noxious weeds, grazing, trash dumping and road and transmission line maintenance. Additionally, parts of some occurrences were below the reservoir high water mark. Other special-status plants were located with Mariposa clarkia occurrences, including Red Hills onion. Attachment C lists occurrence information for Mariposa clarkia; Attachment B provides locations within the study area. Figures 5 and 6 in Attachment D are representative photos of the plant and its characteristic habitat in the study area.



#### 5.1.4 Mariposa cryptantha (BLM-S, CNPS 1B)



Mariposa cryptantha is an annual herb that grows in serpentine soils at elevations between 600 and 2,200 ft. This species blooms in April and June (BLM 2010c).

The Districts located 10 occurrences of Mariposa cryptantha on Kanaka Point, Moccasin Point Recreation Area, Railroad Canyon and Sixbit Gulch. Approximately 2,300 plants were found with an estimated area of 1.24 ac, with all occurrences on BLM lands and one extending onto TID/MID lands.

The Mariposa cryptantha occurrences were scattered on rocky, serpentine slopes amidst grassy openings of toyon (*Heteromeles arbutifolia*), chamise and gray pine. The majority of the plants were either in flower or fruit, with a small percentage still vegetative. The Mariposa cryptantha occurrence in Moccasin Point Recreation Area was growing in the middle of a storage area for old equipment and vehicles, sometimes growing around equipment. Potential disturbances around the other occurrences included noxious weeds and recreation. Attachment C lists occurrence information for Mariposa cryptantha; Attachment B provides the locations within the study area. Figures 7 and 8 in Attachment D are representative photos of the plant and its characteristic habitat in the study area.

#### 5.1.5 Tripod buckwheat (BLM-S)



Tripod buckwheat is a small shrub that grows in serpentine chaparral and cismontane woodlands in the Sierra Nevada foothills and Inner Coast ranges. This species blooms from May through July (University of California 2012).

The Districts located four occurrences of tripod buckwheat; all on public land administered by the BLM in Sixbit Gulch. This plant had not been documented previously within a one-mile buffer of the FERC Project Boundary. Approximately 277

individual plants were located on a total estimated 0.069 ac. Tripod buckwheat was located on rocky slopes in openings of gray pine and chaparral habitats, sometimes just above the high water mark. Nearly 100 percent of all plants were in flower. Potential disturbances near the occurrences included noxious Other ESA-listed and special-status plants were located with tripod buckwheat occurrences, including Layne's ragwort, Red Hills onion, Congdon's lomatium, shaggy-haired lupine and Red Hills soaproot. Attachment C lists occurrence information for tripod buckwheat; Attachment B provides locations within the study area. Figures 9 and 10 in Attachment D are representative photos of the plant and its characteristic habitat in the study area.



### 5.1.6 Congdon's lomatium (BLM-S, CNPS 1B)



Congdon's lomatium is a perennial herb with small flowers of pale yellow in peduncles. It is known to occur only on serpentine soils in Tuolumne County, primarily in the Red Hills. It grows in chaparral and foothill woodland and blooms from April through June (BLM 2010a).

The Districts located seven occurrences of Congdon's lomatium, all on public land administered by the BLM. Five occurrences were located on Sixbit Gulch, while the other two were on Poor Man's Gulch. An estimated 80 percent of the plants were in fruit, and the remaining plants were in flower. Visible disturbances around occurrences included inundation by high water, recreation and weeds. Other ESA-listed and special-status plants were located with Congdon's lomatium occurrences, including Layne's ragwort, Red Hills onion, Red

Hills soaproot, tripod buckwheat, shaggy-haired lupine and Mariposa cryptantha. Attachment C lists occurrence information for Congdon's lomatium; Attachment B provides the location within the study area. Figures 11 and 12 in Attachment D are representative photos of the plant and its characteristic habitat in the study area.

### 5.1.7 Shaggy-haired lupine (BLM-S, CNPS 1B.2)

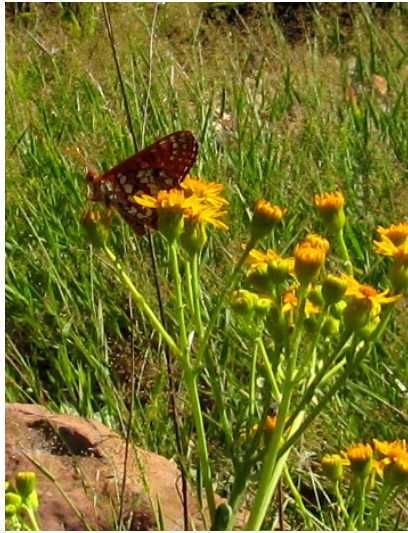


Shaggy-haired lupine is an annual herb, covered with dense, long-spreading hairs, that grows on exposed serpentine rock. This species has been found only in Mariposa and Tuolumne counties and grows below 2,800 ft. Shaggyhair lupine blooms in April and May (BLM 2010g).

The Districts located seven occurrences of shaggy-haired lupine, four on public land administered by BLM. Two were in Poor Man's Gulch, while the other five occurrences were surveyed in Railroad Canyon. Occurrences ranged from 1 to 2,000 plants, with a combined estimated area of 0.25 ac. Shaggyhair lupine were found in rocky, serpentine openings of gray pine and chaparral. Commonly associated plant species included toyon, chamise, floriferous monkeyflower (*Mimulus floribundus*) and annual grasses. Over 90 percent of the

individuals were in fruit, with the rest in flower. All occurrences, except 683, were located just above or partially below the high water mark of the reservoir. Other ESA-listed and special-status plants were located with shaggyhair lupine occurrences, including Layne's ragwort, Red Hills onion, Red Hills soaproot, tripod buckwheat, and Congdon's lomatium. Attachment C lists occurrence information for shaggy-haired lupine; Attachment B provides locations within the study area. Figures 13 and 14 in Attachment D are representative photos of the plant and its characteristic habitat in the study area.

### 5.1.8 Red Hills ragwort (BLM-S, CNPS 1B)



Red Hills ragwort is a perennial herb, which grows in wet serpentine areas. This species grows in an elevation range of 800 to 1,400 ft and blooms in June and July (BLM 2010e).

The Districts located two occurrences of Red Hills ragwort; one on BLM lands. Red Hills ragwort was found at Recreation Bay and Sixbit Gulch, in riparian areas with Pacific willow (*Salix lasiandra*), California buckthorn (*Frangula californica* ssp. *tomentella*), cobwebby hedgenettle (*Stachys albens*), seep monkeyflower (*Mimulus guttatus*) and needle spikerush (*Eleocharis acicularis*). The estimated area of the combined occurrences is 0.02 ac, containing approximately 268 individuals. An estimated 65 percent of the occurrences were in flower, and the remaining plants were vegetative. Potential disturbances near the occurrence in Recreation Bay included

recreation, weeds and grazing. Other special-status plants were located with Red Hills ragwort occurrences, including Red Hills soaproot, and shaggy-haired lupine. Attachment C lists occurrence information for Red Hills ragwort; Attachment B provides locations within the study area. Figures 15 and 16 in Attachment D are representative photos of the plant and its characteristic habitat in the study area.

## 5.2 Terrestrial Vegetation Types

The botanical communities within the study area included primarily upland vegetation alliances, with minimal areas of wetland, riparian, or littoral habitats. The Project study area was comprised of tree-dominated, shrub-dominated or grass-dominated communities. Vegetation types described below are based on CALVEG systems (USFS 2009), as identified in the PAD, and reflect the habitats observed during field surveys.

The study area was dominated by three vegetation alliances: Blue Oak, Chamise and Annual Grasses and Forbs. There were also large areas of Gray Pine, and smaller inclusions of Lower Montane Mixed Chaparral and Interior Live Oak.

The shoreline of Don Pedro Reservoir is predominantly Blue Oak and Annual Grasses and Forbs. Willow Creek Arm, Hatch Creek Arm, and Don Pedro Bar are dominated by Chamise. The Tuolumne Arm and Wood's Creek Arm support a mixture of alliances, including Lower Montane Mixed Chaparral, Chamise, Interior Live Oak, Gray Pine, Annual Grasses and Forbs and a few small areas of Riparian Mixed Hardwoods.

## 5.3 Project Operation and Maintenance and Recreation Activities

Consistent with the FERC-approved study plan, the Districts' operations staff was consulted with to identify specific Project O&M activities and recreation that typically occur in the area of, and have the potential to affect, special-status plant occurrences. In addition, observations of

disturbances in or near special-status plant occurrences were recorded in the field. Information gathered from consultation and from field observations is summarized in Table 5.3-1.

Certain special-status plant occurrences were specifically noted to be in areas affected by Project O&M, including:

- Below the reservoir maximum inundation line - Red Hills onion 644, 646; tripod buckwheat 643; Congdon's lomatium 642; shaggy-haired lupine 633, 668; Red Hills ragwort 645.
- Burn pile - Mariposa clarkia 84.
- Road maintenance - Red Hills onion 88; Mariposa clarkia 92, 369, 373, 378, 385-6.
- Within waste or storage area - Mariposa cryptantha 86.
- Within recreation areas or places of dispersed recreation: Red Hills onion 676, 678; Mariposa clarkia 83, 391; Mariposa cryptantha 72, 73.

Additional special-status plant occurrences were in areas potentially affected by non-Project uses, such as:

- Dumping - Mariposa clarkia 377.
- Transmission line maintenance - Mariposa clarkia 92, 385-6.
- Management and use of public roads: Mariposa clarkia 375, 376, 385, 392.

**Table 5.3-1. Project O&M, recreation, and non-Project activities in areas with special-status plant occurrences.**

Location Description	Species (common name)	Occurrence Number	Activities with Potential to Affect Special-status Plants		
			O&M	Recreation Use	Non-Project Use
Moccasin Point Recreation Area and surroundings	Mariposa clarkia	83, 84, 89	Campsites, structures and roadsides (up to 6-10 ft adjacent to roads and turnouts) are sprayed with herbicides annually (generally Roundup, Goaltender and Milestone) after first soaking rain in the fall.	Recreation is heaviest during high water years in the summer months. Campsites are full usually only on holidays and weekends. Walk-in use area is used heavily year-round to access the reservoir.	Hetch Hetchy facility and housing in area maintained by Hetch Hetchy.
	Mariposa cryptantha	87	Campgrounds and associated roads are also mechanically mowed/weed-eaten.	Grizzly Road area used heavily for day use off end of cul-de-sac.	
	Red Hills onion	88	Prescribed burns of vegetation directly in and around developed camping areas is a potential vegetation management tool, but is seldom used.		Grizzly Road maintained by county.
Railroad Canyon	Mariposa cryptantha	684, 686, 687, 689, 690	Some plants occur below reservoir maximum inundation line.	Heavy boat use year round but not much land use in area.	--
	Shaggyhair lupine	679, 680, 681, 682, 683			
Moccasin transmission line and Recreation Bay area	Red Hills ragwort	83	--	Shoreline house boating and sporadic day use off the reservoir.	Hetch Hetchy maintains the transmission line and access roads in the area.
	Mariposa clarkia	92			Grazing.
Shawmut Road	Mariposa clarkia	391, 392	--	This area is open for free day use. No camping. Fairly heavy use, particularly during summer months.	Road maintained by county.

Location Description	Species (common name)	Occurrence Number	Activities with Potential to Affect Special-status Plants		
			O&M	Recreation Use	Non-Project Use
Kanaka Point, Jacksonville Road, Harney Lane and surroundings	Red Hills onion	676, 678	Mow edge of access road to 6-10 feet off the side to limit fire hazard.	Popular, free area for day-use, particularly fishing. People hike in both directions from Kanaka Point parking area to access the reservoir.	Kanaka Point access road maintained by county on infrequent basis.
	Mariposa cryptantha	71, 72, 73	Area graded within Kanaka Point for one-time removal of debris left after flood; evidence of disturbance remains.		
Sixbit & Poor Man's Gulch	Congdon's lomatium	623, 642, 649, 651, 655, 673, 699	--	Light boating use, primarily fishing.	Grazing.
	Red Hills ragwort	645			
	Red Hills onion	620, 635, 644, 646, 658, 665, 670		Some recreation from upslope, particularly horse riding.	
	Red Hills soaproot	622, 627, 629, 637, 639, 650, 652, 653, 657, 660, 661, 663, 666, 669, 674, 692, 694, 695, 697, 698			
	Tripod buckwheat	643, 662, 664, 667	--	--	--
	Mariposa cryptantha	671			
	Shaggyhair lupine	633, 668			
Rogers Creek Arm	Mariposa clarkia	368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386	Occasional use of the old access road.	Heaviest day use area, particularly during the summer weekends and holidays. Walk-in access near the area of pullouts along the road.	Fencing and grazing throughout area.
					Dumping off the side of the road.

## 6.0 DISCUSSION AND FINDINGS

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Botanical surveys were performed on approximately 3,870 ac (6.0 square mi) between March 5 and June 29, 2012. Surveys were performed by several teams of botanists, working simultaneously throughout the study area. More than 700 plant species were found during floristic surveys and, of those, eight special-status species were observed and mapped in a total of 85 occurrences.

All eight species met the BLM-S definition of special-status plant. Fifty-seven occurrences of these species are located on public lands administered by the BLM and are considered special-status by the BLM. BLM-S plants on public lands administered by the BLM are actively managed by the BLM.

Two species of special-status plants, Mariposa clarkia and tripod buckwheat, had not been documented, prior to these surveys, within a one-mile radius of the FERC Project Boundary.

FERC's Scoping Document 2 identified the following issues potentially affecting special-status plant species:

- Potential effects of Project operation, including water level fluctuations, ground-disturbing activities, and maintenance on special-status plant species and botanical resources.
- Effects of maintenance and use of Project recreation facilities by recreationists on special-status wildlife species, special-status plant species and botanical resources, and shoreline vegetation.

Don Pedro Project O&M includes normal operations within the currently licensed elevation range (up to 830 feet), as well as operation of three formal recreation areas (Moccasin Point, Blue Oaks, and Fleming Meadows), vegetation management within these recreation areas and Project facilities, and ongoing reservoir debris removal and disposal near Deer Creek and Harney Lane. Recreation activities occur along portions of the shoreline and include dispersed camping, fishing and hiking. Additionally, the Districts have granted four grazing permits on a limited area within the Project Boundary, on a total of 559 acres.

Grazing and noxious weeds are the largest causes of potential stress for special-status plants in the study area. Lands with substantial grazing were observed to have some of the highest concentrations of noxious weed occurrences. Over half of the observed occurrences of special-status plants were colocated with noxious weed occurrences, many of these in areas with evidence of disturbance from grazing. However, none of these special-status plant occurrences are in or near lands associated with the Districts' four grazing permits. As a result, this study finds that the Districts' permitted grazing does not affect special-status plants within the study area.

Project operations and recreation may have the potential to affect special-status plant species located within the study area. Portions of seven special-status plant occurrences of five species are located near or below the reservoir maximum inundation line; these portions represent the

outside boundary of the occurrence. These plants are not adversely affected by current operations, but could be affected by substantial changes in the duration or timing of inundation. Project-related maintenance located within or around special-status plants included road maintenance, sewage pond and storage areas and a burn pile. Activities associated with this maintenance that extend into the special-status plant occurrences can stress or directly disturb individual special-status plants or the entire occurrence, as well as impact them indirectly by promoting noxious weeds and disturbing habitat. Additionally, numerous occurrences of special-status plants were located in areas where they could be directly impacted by recreation, primarily through trampling, soil disturbance and the spread of noxious weeds.

Non-Project uses of Project lands may also affect special-status plants, including frequently observed activities such as dumping, transmission line maintenance, and grazing. In addition, non-Project lands were frequently observed to support untreated source occurrences of noxious weeds that extend into the study area.

## **7.0                    STUDY VARIANCES AND MODIFICATIONS**

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This study was conducted in conformance to the FERC-approved Special-Status Plants Study Plan (Study TR-01); no variances occurred.



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**STUDY REPORT TR-01  
SPECIAL-STATUS PLANTS**

**ATTACHMENT A**

**COMPLETE PLANT LIST**

**Table 1. Complete plant list for Don Pedro Project special-status plant surveys.**

Family	Species	Common Name	New Family	New Species Name	Native Y/N
<b>Ferns and Fern Allies</b>					
Blechnaceae	<i>Woodwardia fimbriata</i>	giant chain fern	--	--	Y
Dryopteridaceae	<i>Athyrium filix-femina</i> var. <i>cyclosorum</i>	Western lady fern	Woodsiaceae	--	Y
Polypodiaceae	<i>Polypodium calirhiza</i>	acrid fern	--	--	N
Pteridaceae	<i>Adiantum jordanii</i>	California maidenhair fern	--	--	Y
Pteridaceae	<i>Aspidotis californica</i>	California lace fern	--	--	Y
Pteridaceae	<i>Aspidotis densa</i>	dense lace fern	--	--	Y
Pteridaceae	<i>Cheilanthes gracillima</i>	lace lip fern	--	--	Y
Pteridaceae	<i>Pellaea andromedifolia</i>	coffee fern	--	--	Y
Pteridaceae	<i>Pellaea mucronata</i> ssp. <i>californica</i>	California cliff brake	--	<i>Pellaea mucronata</i> var. <i>californica</i>	Y
Pteridaceae	<i>Pellaea mucronata</i> var. <i>mucronata</i>	bird's foot fern	--	--	Y
Pteridaceae	<i>Pentagramma pallida</i>	silver back fern	--	--	Y
Pteridaceae	<i>Pentagramma triangularis</i> ssp. <i>triangularis</i>	gold back fern	--	--	Y
<b>Gymnosperms</b>					
Cupressaceae	<i>Calocedrus decurrens</i>	Incense cedar	--	--	Y
Cupressaceae	<i>Cupressus macrocarpa</i>	Monterey cypress	--	<i>Hesperocyparis macrocarpa</i>	Y
Cupressaceae	<i>Juniperus communis</i>	dwarf juniper	--	--	Y
Cupressaceae	<i>Callitropsis stephensonii</i>	Cuymaca cypress	--	<i>Hesperocyparis stephensonii</i>	Y
Pinaceae	<i>Cedrus deodara</i>	deodar cedar	--	--	N
Pinaceae	<i>Pinus attenuata</i>	knobcone pine	--	--	Y
Pinaceae	<i>Pinus halepensis</i>	Aleppo pine	--	--	N
Pinaceae	<i>Pinus ponderosa</i>	Ponderosa pine	--	--	Y
Pinaceae	<i>Pinus sabiniana</i>	grey pine	--	--	Y
Taxodiaceae	<i>Sequoia sempervirens</i>	Coast redwood	Cupressaceae	--	Y
<b>Monocots</b>					
Alismataceae	<i>Alisma triviale</i>	Western waterplantain	--	--	Y
Cyperaceae	<i>Carex amplexens</i>	fragile-sheathed sedge	--	<i>Carex fracta</i>	Y
Cyperaceae	<i>Carex aquatilis</i> var. <i>aquatilis</i>	water sedge	--	--	Y
Cyperaceae	<i>Carex densa</i>	dense sedge	--	--	Y
Cyperaceae	<i>Carex feta</i>	green-sheathed sedge	--	--	Y
Cyperaceae	<i>Carex nudata</i>	naked sedge	--	--	Y

Family	Species	Common Name	New Family	New Species Name	Native Y/N
Cyperaceae	<i>Carex praegracilis</i>	clustered field sedge	--	--	Y
Cyperaceae	<i>Carex serratodens</i>	saw-toothed sedge	--	--	Y
Cyperaceae	<i>Carex tumulicola</i>	splitawn sedge	--	--	Y
Cyperaceae	<i>Cyperus eragrostis</i>	tall flatsedge	--	--	Y
Cyperaceae	<i>Cyperus niger</i>	nutsedge	--	--	Y
Cyperaceae	<i>Eleocharis acicularis</i> var. <i>acicularis</i>	needle spikerush	--	--	Y
Cyperaceae	<i>Eleocharis macrostachya</i>	common spikerush	--	--	Y
Cyperaceae	<i>Isolepis cernua</i>	low bulrush	--	--	Y
Cyperaceae	<i>Schoenoplectus acutus</i> var. <i>occidentalis</i>	common tule	--	--	Y
Cyperaceae	<i>Scirpus microcarpus</i>	panicled bullrush	--	--	Y
Iridaceae	<i>Iris germanica</i>	iris "firebug"	--	--	N
Iridaceae	<i>Sisyrinchium bellum</i>	Western blue-eyed grass	--	--	Y
Junaceae	<i>Juncus balticus</i>	baltic rush	--	--	Y
Junaceae	<i>Juncus bufonius</i> ssp. <i>bufonius</i>	toad rush	--	--	Y
Junaceae	<i>Juncus capitatus</i>	leafybract dwarf rush	--	--	N
Junaceae	<i>Juncus effusus</i> ssp. <i>pacificus</i>	Pacific rush	--	--	Y
Junaceae	<i>Juncus bufonius</i> var. <i>occidentalis</i>	Western toad rush	--	--	Y
Junaceae	<i>Juncus ensifolius</i>	swordleaved rush	--	--	Y
Junaceae	<i>Juncus mexicanus</i>	Mexican rush	--	--	Y
Junaceae	<i>Juncus oxymers</i>	pointed rush	--	--	Y
Junaceae	<i>Juncus tenuis</i>	poverty rush	--	--	Y
Junaceae	<i>Juncus xiphioides</i>	iris-leaved rush	--	--	Y
Junaceae	<i>Luzula comosa</i>	hairy woodrush	--	--	Y
Lemnaceae	<i>Lemna minor</i>	duckweed	Araceae	--	Y
Lemnaceae	<i>Lemna minuscula</i>	dinky duckweed	Araceae	<i>Lemna minuta</i>	Y
Lemnaceae	<i>Lemna turionifera</i>	duckweed	Araceae	--	Y
Lemnaceae	<i>Wolffiella oblonga</i>	mud-midget	Araceae	--	Y
Liliaceae	<i>Allium amplexans</i>	narrowleaf onion	Alliaceae	--	Y
Liliaceae	<i>Allium peninsulare</i>	Peninsular onion	Alliaceae	--	Y
Liliaceae	<i>Allium peninsulare</i> var. <i>peninsulare</i>	Peninsular onion	Alliaceae	--	Y
Liliaceae	<i>Allium tuolumnense</i>	Red Hills onion	Alliaceae	--	Y
Liliaceae	<i>Brodiaea californica</i> var. <i>californica</i>	California brodiaea	Themidaceae	<i>Brodiaea californica</i>	Y
Liliaceae	<i>Brodiaea coronaria</i> ssp. <i>coronaria</i>	crown brodiaea	Themidaceae	<i>Brodiaea coronaria</i>	Y
Liliaceae	<i>Brodiaea elegans</i>	elegant brodiaea	Themidaceae	--	Y
Liliaceae	<i>Brodiaea elegans</i> ssp. <i>elegans</i>	harvest brodiaea	Themidaceae	--	Y

Family	Species	Common Name	New Family	New Species Name	Native Y/N
Liliaceae	<i>Calochortus albus</i>	white fairy lantern	--	--	Y
Liliaceae	<i>Calochortus luteus</i>	gold nuggets	--	--	Y
Liliaceae	<i>Calochortus superbis</i>	yellow Mariposa	--	--	Y
Liliaceae	<i>Calochortus venustus</i>	butterfly Mariposa lily	--	--	Y
Liliaceae	<i>Chlorogalum angustifolium</i>	narrow-leaved soap plant	Agavaceae	--	Y
Liliaceae	<i>Chlorogalum grandiflorum</i>	Red hill's soaproot	Agavaceae	--	Y
Liliaceae	<i>Chlorogalum pomeridianum</i> var. <i>pomeridianum</i>	wavy-leaved soap plant	Agavaceae	--	Y
Liliaceae	<i>Dichelostemma capitatum</i> ssp. <i>capitatum</i>	blue dicks	Themidaceae	--	Y
Liliaceae	<i>Dichelostemma multiflorum</i>	manyflowered brodiaea	Themidaceae	--	Y
Liliaceae	<i>Dichelostemma volubile</i>	twining snakelily	Themidaceae	--	Y
Liliaceae	<i>Narcissus pseudonarcissus</i>	wild daffodil	Amoryllidaceae	--	N
Liliaceae	<i>Odontostomum hartwegii</i>	Hartweg's doll's lily	Tecophilaeaceae	--	Y
Liliaceae	<i>Triteleia bridgesii</i>	Bridge's triteleia	Themidaceae	--	Y
Liliaceae	<i>Triteleia hyacinthina</i>	white brodiaea	Themidaceae	--	Y
Liliaceae	<i>Triteleia ixiodes</i> ssp. <i>scabra</i>	Foothill triteleia	Themidaceae	--	Y
Liliaceae	<i>Triteleia laxa</i>	Ithuriel's spear	Themidaceae	--	Y
Liliaceae	<i>Zigadenus fremontii</i>	death camas	Melanthiaceae	<i>Toxicoscordion fremontii</i>	Y
Orchidaceae	<i>Epipactis gigantea</i>	stream orchid	--	--	Y
Orchidaceae	<i>Piperia michaelii</i>	Michael's rain orchid	--	--	Y
Orchidaceae	<i>Spiranthes porrifolia</i>	Western ladies' tresses	--	--	Y
Poaceae	<i>Agrostis avenacea</i>	Pacific bentgrass	Poaceae	--	N
Poaceae	<i>Agrostis exarata</i>	spike bentgrass	Poaceae	--	Y
Poaceae	<i>Agrostis microphylla</i>	small-leaf bentgrass	Poaceae	--	Y
Poaceae	<i>Aira caryophylla</i>	Eauropean hairgrass	Poaceae	--	N
Poaceae	<i>Aira elegans</i>	elegant hairgrass	Poaceae	--	N
Poaceae	<i>Alopecurus carolinianus</i>	foxtail	Poaceae	--	Y
Poaceae	<i>Andropogon virginicus</i> var. <i>virginicus</i>	broomsedge bluestem	Poaceae	--	N
Poaceae	<i>Arrhenatherum elatius</i>	tall oatgrass	Poaceae	--	N
Poaceae	<i>Avena barbata</i>	wild oats	Poaceae	--	N
Poaceae	<i>Avena fatua</i>	common wild oats	Poaceae	--	N
Poaceae	<i>Brachypodium distachyon</i>	false broom	Poaceae	--	N
Poaceae	<i>Briza maxima</i>	quaking grass	Poaceae	--	N
Poaceae	<i>Briza minor</i>	little quaking grass	Poaceae	--	N
Poaceae	<i>Bromus arenarius</i>	Australian brome	Poaceae	--	N

Family	Species	Common Name	New Family	New Species Name	Native Y/N
Poaceae	<i>Bromus berterioanus</i>	Chilean chess	Poaceae	--	N
Poaceae	<i>Bromus diandrus</i>	rip-gut brome	Poaceae	--	N
Poaceae	<i>Bromus hordeaceus</i>	soft chess	Poaceae	--	N
Poaceae	<i>Bromus japonicus</i>	Japanese brome	Poaceae	--	N
Poaceae	<i>Bromus laevipes</i>	woodland brome	Poaceae	--	Y
Poaceae	<i>Bromus madritensis</i> ssp. <i>madritensis</i>	foxtail cheatgrass	Poaceae	--	N
Poaceae	<i>Bromus madritensis</i> ssp. <i>rubens</i>	red brome	Poaceae	--	N
Poaceae	<i>Bromus sterilis</i>	poverty cheat grass	Poaceae	--	N
Poaceae	<i>Bromus tectorum</i>	cheat grass	Poaceae	--	N
Poaceae	<i>Bromus trinii</i>	Chilean chess	Poaceae	<i>Bromus berterioanus</i>	Y
Poaceae	<i>Cynodon dactylon</i>	Bermuda grass	Poaceae	--	N
Poaceae	<i>Cynosurus echinatus</i>	hedgehog dogtail	Poaceae	--	N
Poaceae	<i>Dactylis glomerata</i>	orchardgrass	Poaceae	--	N
Poaceae	<i>Deschampsia danthonioides</i>	annual hairgrass	Poaceae	--	Y
Poaceae	<i>Deschampsia elongata</i>	slender hairgrass	Poaceae	--	Y
Poaceae	<i>Digitaria sanguinalis</i>	large crabgrass	Poaceae	--	N
Poaceae	<i>Elymus elymoides</i> ssp. <i>californicus</i>	elymus	Poaceae	--	Y
Poaceae	<i>Elymus multisetus</i>	big squirrel-tail grass	Poaceae	--	Y
Poaceae	<i>Elymus stebbinsii</i>	Stebbins' wheat grass	Poaceae	--	Y
Poaceae	<i>Elytrigia intermedia</i>	squirrel-tail grass	Poaceae	<i>Elymus hispidus</i>	N
Poaceae	<i>Festuca arundinacea</i>	tall fescue	Poaceae	--	N
Poaceae	<i>Gastridium phleoides</i>	nit grass	Poaceae	--	N
Poaceae	<i>Glyceria declinata</i>	low manna grass	Poaceae	--	N
Poaceae	<i>Holcus lanatus</i>	velvet grass	Poaceae	--	N
Poaceae	<i>Hordeum brachyantherum</i> ssp. <i>brachyantherum</i>	Northern barley	Poaceae	--	Y
Poaceae	<i>Hordeum brachyantherum</i> ssp. <i>californicum</i>	meadow barley	Poaceae	--	Y
Poaceae	<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Mediterranean barley	Poaceae	--	Y
Poaceae	<i>Hordeum murinum</i> ssp. <i>leporinum</i>	mouse barley	Poaceae	--	N
Poaceae	<i>Koeleria macrantha</i>	prarie june grass	Poaceae	--	Y
Poaceae	<i>Lamium amplexicaule</i>	clasping henbit	Poaceae	--	N
Poaceae	<i>Lolium multiflorum</i>	perennial ryegrass	Poaceae	<i>Festuca perennis</i>	N
Poaceae	<i>Melica bulbosa</i>	honey grass	Poaceae	--	Y
Poaceae	<i>Melica californica</i>	California melicgrass	Poaceae	--	Y



Family	Species	Common Name	New Family	New Species Name	Native Y/N
Poaceae	<i>Melica imperfecta</i>	small-flowered melicgrass	Poaceae	--	Y
Poaceae	<i>Melica torreyana</i>	Torrey melica	Poaceae	--	Y
Poaceae	<i>Muhlenbergia rigens</i>	deergrass	Poaceae	--	Y
Poaceae	<i>Nassella pulchra</i>	purple needlegrass	Poaceae	<i>Stipa pulchra</i>	Y
Poaceae	<i>Panicum acuminatum</i> var. <i>fasciculatum</i>	Pacific panic grass	Poaceae	--	Y
Poaceae	<i>Panicum capillare</i>	Western witchgrass	Poaceae	--	Y
Poaceae	<i>Paspalum dilatatum</i>	Dallis grass	Poaceae	--	N
Poaceae	<i>Phalaris aquatica</i>	Harding grass	Poaceae	--	N
Poaceae	<i>Phalaris paradoxa</i>	hood canarygrass	--	--	N
Poaceae	<i>Phleum pratense</i>	cultivated timothy	Poaceae	--	N
Poaceae	<i>Piptatherum miliaceum</i>	millet mountain rice	Poaceae	<i>Stipa miliacea</i>	Y
Poaceae	<i>Poa annua</i>	annual bluegrass	Poaceae	--	N
Poaceae	<i>Poa bulbosa</i>	bulbous bluegrass	Poaceae	--	N
Poaceae	<i>Poa pratensis</i>	Kentucky bluegrass	Poaceae	--	N
Poaceae	<i>Poa secunda</i> ssp. <i>secunda</i>	Sandburg's bluegrass	Poaceae	--	Y
Poaceae	<i>Polypogon australis</i>	Chilean rabbitfoot grass	Poaceae	--	N
Poaceae	<i>Polypogon interruptus</i>	ditch polypogon	Poaceae	--	N
Poaceae	<i>Polypogon maritimus</i>	Mediterranean beard grass	Poaceae	--	N
Poaceae	<i>Sherardia arvensis</i>	fieldmadder	Poaceae	--	Y
Poaceae	<i>Sorghum halepense</i>	Johnson grass	Poaceae	--	N
Poaceae	<i>Sporobolus indicus</i>	smut grass	Poaceae	--	N
Poaceae	<i>Taeniatherum caput-medusae</i>	medusahead grass	Poaceae	<i>Elymus caput-medusae</i>	N
Poaceae	<i>Triticum aestivum</i>	goat grass	Poaceae	--	N
Poaceae	<i>Vulpia bromoides</i>	brome fescue	Poaceae	<i>Festuca bromoides</i>	N
Poaceae	<i>Vulpia microstachys</i> ssp. <i>microstachys</i>	Fescue/rye grass	Poaceae	<i>Festuca microstachys</i>	Y
Poaceae	<i>Vulpia myuros</i>	rat-tailed fescue	Poaceae	<i>Festuca myuros</i>	N
Typhaceae	<i>Typha angustifolia</i>	narrow-leaved cattail	Typhaceae	--	Y
Typhaceae	<i>Typha latifolia</i>	broadleaved cattail	Typhaceae	--	Y
<b>Dicots</b>					
Amaranthaceae	<i>Amaranthus albus</i>	tumbleweed	--	--	N
Anacardiaceae	<i>Schinus molle</i>	pepper tree	--	--	N
Anacardiaceae	<i>Toxicodendron diversilobum</i>	poison oak	--	--	Y
Apiaceae	<i>Anthriscus caucalis</i>	bur-chervil	--	--	N
Apiaceae	<i>Apiastrum angustifolium</i>	wild celery	--	--	Y
Apiaceae	<i>Ciclospermum leptophyllum</i>	marsh parsley	--	<i>Cyclospermum</i>	N

Family	Species	Common Name	New Family	New Species Name	Native Y/N
				<i>leptophyllum</i>	
Apiaceae	<i>Conium maculatum</i>	poison hemlock	--	--	N
Apiaceae	<i>Daucus carota</i>	Queen Anne's lace	--	--	Y
Apiaceae	<i>Daucus pusillus</i>	American wild carrot	--	--	Y
Apiaceae	<i>Eryngium castrense</i>	Great Valley button-celery	--	--	Y
Apiaceae	<i>Foeniculum vulgare</i>	Fennel	--	--	N
Apiaceae	<i>Lomatium caruifolium</i> var. <i>caruifolium</i>	alkali desertparsley	--	--	Y
Apiaceae	<i>Lomatium congdonii</i>	Congdon's lomatium	--	--	Y
Apiaceae	<i>Lomatium dasycarpum</i> ssp. <i>dasycarpum</i>	lace parsnip	--	--	Y
Apiaceae	<i>Lomatium dasycarpum</i> ssp. <i>tomentosum</i>	woolly fruited lomatium	--	--	Y
Apiaceae	<i>Lomatium macrocarpum</i>	bigseed biscuitroot	--	--	Y
Apiaceae	<i>Lomatium marginatum</i> ssp. <i>marginatum</i>	hartweg's lomatium	--	--	Y
Apiaceae	<i>Lomatium utriculatum</i>	common lomatium	--	--	Y
Apiaceae	<i>Osmorhiza brachypoda</i>	California sweet-cicely	--	--	Y
Apiaceae	<i>Perideridia californica</i>	California yampah	--	--	Y
Apiaceae	<i>Perideridia kelloggii</i>	Kellogg's yampah	--	--	Y
Apiaceae	<i>Sanicula bipinnata</i>	poison sanicle	--	--	Y
Apiaceae	<i>Sanicula bipinnatifida</i>	purple sanicle	--	--	Y
Apiaceae	<i>Sanicula crassicaulis</i>	gamble weed	--	--	Y
Apiaceae	<i>Sanicula tuberosa</i>	tuberosa sanicle	--	--	Y
Apiaceae	<i>Scandix pecten-veneris</i>	shepherd's needle	--	--	N
Apiaceae	<i>Tauschia hartwegii</i>	Hartweg's tauschia	--	--	Y
Apiaceae	<i>Torilis arvensis</i>	hedge parsley	--	--	N
Apiaceae	<i>Torilis nodosa</i>	knotted hedge-parsley	--	--	N
Apiaceae	<i>Yabea microcarpa</i>	false carrot	--	--	Y
Asclepiadaceae	<i>Asclepias cordifolia</i>	purple milkweed	Apocynaceae	--	Y
Asclepiadaceae	<i>Asclepias fascicularis</i>	narrow-leaf milkweed	Apocynaceae	--	Y
Apocynaceae	<i>Nerium oleander</i>	common oleander	Apocynaceae	--	N
Apocynaceae	<i>Vinca major</i>	periwinkle	Apocynaceae	--	N
Araliaceae	<i>Hedera helix</i>	English ivy	--	--	N
Asteraceae	<i>Achillea millefolium</i>	Queen Anne's lace	--	--	Y
Asteraceae	<i>Achyrrachaena mollis</i>	blow wives	--	--	Y
Asteraceae	<i>Agoseris grandiflora</i>	grassland agoseris	--	--	Y

Family	Species	Common Name	New Family	New Species Name	Native Y/N
Asteraceae	<i>Agoseris heterophylla</i> var. <i>heterophylla</i>	annual agoseris	--	--	Y
Asteraceae	<i>Agoseris retrorsa</i>	spearleaf agoseris	--	--	Y
Asteraceae	<i>Anaphalis margaritacea</i>	pearly everlasting	--	--	Y
Asteraceae	<i>Ancistrocarphus filagineus</i>	woolly fishhooks	--	--	Y
Asteraceae	<i>Anthemis</i> sp.	corn chamomile	--	--	N
Asteraceae	<i>Artemisia douglasiana</i>	California mugwort	--	--	Y
Asteraceae	<i>Baccharis pilularis</i>	coyote brush	--	--	Y
Asteraceae	<i>Baccharis salicifolia</i>	mule-fat	--	--	Y
Asteraceae	<i>Balsamorhiza sagittata</i>	arrowleaf balsamroot	--	--	Y
Asteraceae	<i>Brickellia californica</i>	California bricklebrush	--	--	Y
Asteraceae	<i>Calycadenia multiglandulosa</i>	sticky calycadenia	--	--	Y
Asteraceae	<i>Calycadenia spicata</i>	spicate calycadenia	--	--	Y
Asteraceae	<i>Carduus pycnocephalus</i>	Italian thistle	--	--	N
Asteraceae	<i>Carduus tenuiflorus</i>	Italian thistle	--	--	N
Asteraceae	<i>Carthamus baeticus</i>	smooth distaff thistle	--	<i>Carthamus creticus</i>	N
Asteraceae	<i>Centaurea melitensis</i>	totalote	--	--	N
Asteraceae	<i>Centaurea solstitialis</i>	yellow starthistle	--	--	N
Asteraceae	<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>	yellow pincushion	--	--	Y
Asteraceae	<i>Chaenactis glabriuscula</i> var. <i>megacephala</i>	yellow pincushion	--	--	Y
Asteraceae	<i>Chamomilla suaveolens</i>	pineapple weed	--	<i>Matricaria discoidea</i>	N
Asteraceae	<i>Chrysothamnus nauseosus</i> ssp. <i>albicaulis</i>	rubber rabbitbrush	--	<i>Ericameria nauseosa</i> var. <i>speciosa</i>	Y
Asteraceae	<i>Cirsium occidentale</i> var. <i>californicum</i>	California cobweb thistle	--	--	Y
Asteraceae	<i>Cirsium occidentale</i> var. <i>venustum</i>	Venus thistle	--	--	Y
Asteraceae	<i>Cirsium vulgare</i>	bull thistle	--	--	N
Asteraceae	<i>Conyza bonariensis</i>	Flax-leaved horseweed	--	<i>Erigeron bonariensis</i>	N
Asteraceae	<i>Conyza canadensis</i>	horseweed	--	<i>Erigeron canadensis</i>	Y
Asteraceae	<i>Conyza coulteri</i>	Coulter's horseweed	--	<i>Laennecia coulteri</i>	Y
Asteraceae	<i>Conyza floribunda</i>	hairy horseweed	--	<i>Erigeron sumatrensis</i>	N
Asteraceae	<i>Coreopsis</i> sp.	coreopsis "cultivar"	--	--	N
Asteraceae	<i>Cotula australis</i>	Australian cotula	--	--	N
Asteraceae	<i>Erigeron foliosus</i> var. <i>foliosus</i>	leafy fleabane	--	--	Y
Asteraceae	<i>Erigeron foliosus</i> var. <i>hartwegii</i>	leafy fleabane	--	--	Y

Family	Species	Common Name	New Family	New Species Name	Native Y/N
Asteraceae	<i>Erigeron philadelphicus</i>	Philadelphia daisy	--	--	Y
Asteraceae	<i>Eriophyllum confertiflorum</i> ssp. <i>confertiflorum</i>	golden yarrow	--	--	Y
Asteraceae	<i>Eriophyllum confertiflorum</i> var. <i>tanacetiflorum</i>	tansy-flowered woolly sunflower	--	--	Y
Asteraceae	<i>Eriophyllum lanatum</i> var. <i>achillaeoides</i>	common woolly sunflower	--	<i>Eriophyllum lanatum</i> var. <i>achillioides</i>	Y
Asteraceae	<i>Eriophyllum lanatum</i> var. <i>grandiflorum</i>	common woolly sunflower	--	--	Y
Asteraceae	<i>Eriophyllum lanatum</i> var. <i>achilleoides</i>	common woolly sunflower	--	--	Y
Asteraceae	<i>Eriophyllum lanatum</i> var. <i>arachnoideum</i>	spiderweb sunflower	--	--	Y
Asteraceae	<i>Euryops pentinatus</i>	yellow bush daisy	--	--	N
Asteraceae	<i>Euthamia occidentalis</i>	western flat-topped goldenrod	--	--	Y
Asteraceae	<i>Filago gallica</i>	narrow leaved filago	--	<i>Logfia gallica</i>	N
Asteraceae	<i>Gnaphalium californicum</i>	California cudweed	--	<i>Pseudognaphalium californicum</i>	Y
Asteraceae	<i>Gnaphalium canescens</i> ssp. <i>microcephalum</i>	everlasting	--	<i>Pseudognaphalium microcephalum</i>	Y
Asteraceae	<i>Gnaphalium luteoalbum</i>	Jersey cudweed	--	<i>Pseudognaphalium luteoalbum</i>	N
Asteraceae	<i>Gnaphalium palustre</i>	western marsh cudweed	--	--	Y
Asteraceae	<i>Gnaphalium stramineum</i>	cottan-batting plant	--	<i>Pseudognaphalium stramineum</i>	Y
Asteraceae	<i>Grindelia camporum</i> var. <i>camporum</i>	Great Valley gumweed	--	<i>Grindelia camporum</i>	Y
Asteraceae	<i>Grindelia hirsutula</i>	gumplant	--	--	Y
Asteraceae	<i>Hedypnois cretica</i>	crete weed	--	--	N
Asteraceae	<i>Helenium puberulum</i>	sneezeweed	--	--	Y
Asteraceae	<i>Helianthella californica</i> var. <i>nevadensis</i>	California helianthella	--	--	Y
Asteraceae	<i>Helianthus annuus</i>	common sunflower	--	--	Y
Asteraceae	<i>Hemizonia fitchii</i>	Fitch's tarweed	--	<i>Centromadia fitchii</i>	Y
Asteraceae	<i>Hesperervax acaulis</i> var. <i>robustior</i>	dward evax	--	--	Y
Asteraceae	<i>Heterotherca grandiflora</i>	telegraph week	--	--	N
Asteraceae	<i>Holocarpha virgata</i> ssp. <i>virgata</i>	pitgland tarweed	--	--	Y
Asteraceae	<i>Hypochaeris glabra</i>	smooth catsear	--	--	N

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Asteraceae	<i>Hypochaeris radicata</i>	rough catsear	--	--	N
Asteraceae	<i>Lactuca saligna</i>	willowleaf lettuce	--	--	N
Asteraceae	<i>Lactuca serriola</i>	prickly lettuce	--	--	N
Asteraceae	<i>Lagophylla glandulosa</i>	glandular hareleaf	--	--	Y
Asteraceae	<i>Lagophylla ramosissima</i>	common hareleaf	--	--	Y
Asteraceae	<i>Lasthenia californica</i>	California goldfields	--	--	Y
Asteraceae	<i>Lasthenia fremontii</i>	Fremont's goldfield	--	--	Y
Asteraceae	<i>Lasthenia gracilis</i>	common goldfields	--	--	Y
Asteraceae	<i>Layia pentachaeta</i> ssp. <i>pentachaeta</i>	Sierra tidytips	--	--	Y
Asteraceae	<i>Leontodon taraxcoides</i> ssp. <i>longirostris</i>	lesser hawkbit	--	<i>Leontodon saxatilis</i> ssp. <i>longirostris</i>	N
Asteraceae	<i>Leptochloa fusca</i> ssp. <i>uninervia</i>	Sprangletop	--	<i>Leptochloa uninervia</i>	Y
Asteraceae	<i>Lessingia leptoclada</i>	Sierra vinegarweed	--	--	Y
Asteraceae	<i>Madia elegans</i>	common madia	--	--	Y
Asteraceae	<i>Madia exigua</i>	least tarplant	--	--	Y
Asteraceae	<i>Madia gracilis</i>	slender tarweed	--	--	Y
Asteraceae	<i>Madia rammii</i>	Ramm's madia	--	<i>Jensia rammii</i>	Y
Asteraceae	<i>Madia subspicata</i>	spiked tarweed	--	--	Y
Asteraceae	<i>Malacothrix floccifera</i>	wooly desertdandelion	--	--	Y
Asteraceae	<i>Micropus californicus</i> var. <i>californicus</i>	slender cottonweed	--	--	Y
Asteraceae	<i>Microseris acuminata</i>	Sierra Foothill silverpuffs	--	--	Y
Asteraceae	<i>Pseudobahia heermannii</i>	Heerman's golden sunburst	--	--	Y
Asteraceae	<i>Pseudobahia peirsonii</i>	San Joaquin adobe sunburst	--	--	Y
Asteraceae	<i>Pseudognaphalium thermale</i>	everlasting	--	--	Y
Asteraceae	<i>Psilocarphus tenellus</i>	slender wooly marbles	--	--	Y
Asteraceae	<i>Rafinesquia californica</i>	California plumseed	--	--	Y
Asteraceae	<i>Rigiopappus leptocladus</i>	wireweed	--	--	Y
Asteraceae	<i>Rudbeckia californica</i>	California coneflower	--	--	Y
Asteraceae	<i>Senecio clevelandii</i>	Red hills ragwort	--	<i>Packera clevelandii</i>	Y
Asteraceae	<i>Senecio flaccidus</i> var. <i>douglasii</i>	butterweed	--	--	Y
Asteraceae	<i>Senecio layneae</i>	Layne's ragwort	--	<i>Packera layneae</i>	Y
Asteraceae	<i>Senecio sylvaticus</i>	woodland ragwort	--	--	N
Asteraceae	<i>Senecio vulgaris</i>	common groundsel	--	--	N
Asteraceae	<i>Silybum marianum</i>	milk thistle	--	--	N
Asteraceae	<i>Solidago californica</i>	California goldenrod	--	<i>Solidago velutina</i> ssp. <i>californica</i>	Y

Family	Species	Common Name	New Family	New Species Name	Native Y/N
Asteraceae	<i>Soliva sessilis</i>	South America soliva	--	--	N
Asteraceae	<i>Sonchus asper</i> ssp. <i>asper</i>	prickly cow's thistle	--	--	N
Asteraceae	<i>Sonchus oleraceus</i>	common sowthistle	--	--	N
Asteraceae	<i>Stephanomeria paniculata</i>	stiff branched stephanomeria	--	--	Y
Asteraceae	<i>Stephanomeria virgata</i> ssp. <i>pleurocarpa</i>	tall stephanomeria	--	--	Y
Asteraceae	<i>Stylocline gnaphaloides</i>	everlasting nest straw	--	--	Y
Asteraceae	<i>Taraxacum officinale</i>	common dandelion	--	--	N
Asteraceae	<i>Tragodogon dubius</i>	yellow salsify	--	--	N
Asteraceae	<i>Uropappus lindleyi</i>	Lindley's silverpuffs	--	--	Y
Asteraceae	<i>Wyethia angustifolia</i>	narrow-leaved mule's ears	--	--	Y
Asteraceae	<i>Wyethia helenioides</i>	mules ears	--	--	Y
Asteraceae	<i>Xanthium strumarium</i>	cocklebur	--	--	Y
Betulaceae	<i>Alnus rhombifolia</i>	white alder	--	--	Y
Boraginaceae	<i>Amsinckia eastwoodiae</i>	Eastwood's fiddleneck	--	--	Y
Boraginaceae	<i>Amsinckia intermedia</i>	common fiddleneck	--	--	Y
Boraginaceae	<i>Amsinckia menziesii</i>	common fiddleneck	--	--	Y
Boraginaceae	<i>Cryptantha flaccida</i>	weak-stemmed cryptantha	--	--	Y
Boraginaceae	<i>Cryptantha intermedia</i>	clearwater cryptantha	--	--	Y
Boraginaceae	<i>Cryptantha mariposae</i>	Mariposa cryptantha	--	--	Y
Boraginaceae	<i>Cryptantha torreyana</i>	Cryptantha	--	--	Y
Boraginaceae	<i>Cryptantha torreyana</i> var. <i>torreyana</i>	Torrey's cryptantha	--	--	Y
Boraginaceae	<i>Cynoglossum grande</i>	Pacific hound's tongue	--	--	Y
Boraginaceae	<i>Pectocarya pusilla</i>	combseed	--	--	Y
Boraginaceae	<i>Phacelia cicutaria</i> var. <i>cicutaria</i>	caterpillar phacelia	--	--	Y
Boraginaceae	<i>Phacelia egea</i>	Kaweah River scorpionweed	--	--	Y
Boraginaceae	<i>Phacelia heterophylla</i> ssp. <i>virgata</i>	varileaf phacelia	--	--	Y
Boraginaceae	<i>Phacelia imbricata</i>	imbricate phaceila	--	--	Y
Boraginaceae	<i>Phacelia imbricata</i> ssp. <i>imbricata</i>	imbricate phaceila	--	--	Y
Boraginaceae	<i>Phacelia tanacetifolia</i>	lacy Phacelia	--	--	Y
Boraginaceae	<i>Plagiobothrys austiniae</i>	Austin's popcornflower	--	--	Y
Boraginaceae	<i>Plagiobothrys bracteaus</i>	bracted popcornflower	--	--	Y
Boraginaceae	<i>Plagiobothrys canescens</i>	grey popcornflower	--	--	Y
Boraginaceae	<i>Plagiobothrys fulvus</i>	fulvous popcornflower	--	--	Y
Boraginaceae	<i>Plagiobothrys greenei</i>	Greene's popcornflower	--	--	Y
Boraginaceae	<i>Plagiobothrys humistratus</i>	dwarf popcornflower	--	--	Y

Family	Species	Common Name	New Family	New Species Name	Native Y/N
Boraginaceae	<i>Plagiobothrys nothofulvus</i>	rusty popcornflower	--	--	Y
Boraginaceae	<i>Plagiobothrys stipitatus</i> var. <i>micranthus</i>	stalked popcornflower	--	--	Y
Brassicaceae	<i>Athysanus pusillus</i>	common sandweed	--	--	Y
Brassicaceae	<i>Barbarea orthoceras</i>	American yellowrocket	--	--	Y
Brassicaceae	<i>Barbarea verna</i>	American wintercress	--	--	N
Brassicaceae	<i>Boechera arcuata</i>	arching rockcress	--	--	Y
Brassicaceae	<i>Brassica nigra</i>	mustard	--	--	N
Brassicaceae	<i>Brassica rapa</i>	field mustard	--	--	N
Brassicaceae	<i>Capsella bursa-pastoris</i>	shepherd's purse	--	--	N
Brassicaceae	<i>Cardamine oligosperma</i>	Idaho bittercress	--	--	Y
Brassicaceae	<i>Descurainia sophia</i>	tansy mustard	--	--	N
Brassicaceae	<i>Draba verna</i>	vernal draba	--	--	Y
Brassicaceae	<i>Erysimum capitatum</i>	western wallflower	--	--	Y
Brassicaceae	<i>Erysimum capitatum</i> var. <i>capitatum</i>	western wallflower	--	--	Y
Brassicaceae	<i>Guillenia lasiophylla</i>	California mustard	--	<i>Caulanthus lasiophyllus</i>	Y
Brassicaceae	<i>Hirschfeldia incana</i>	shortpod mustard	--	--	N
Brassicaceae	<i>Lepidium didymum</i>	lesser swine cress	--	--	N
Brassicaceae	<i>Lepidium nitidum</i> var. <i>nitidum</i>	shining peppergrass	--	<i>Lepidium nitidum</i>	Y
Brassicaceae	<i>Lepidium strictum</i>	upright pepperweed	--	--	Y
Brassicaceae	<i>Planodes virginicum</i>	virginia winged rockcress	--	--	Y
Brassicaceae	<i>Raphanus raphanistrum</i>	wild radish	--	--	N
Brassicaceae	<i>Raphanus sativus</i>	wild radish	--	--	N
Brassicaceae	<i>Rorippa curvisiliqua</i> var. <i>occidentalis</i>	western yellowcress	--	<i>Rorippa curvisiliqua</i>	Y
Brassicaceae	<i>Rorippa nasturtium-aquaticum</i>	watercress	--	<i>Nasturtium officinale</i>	Y
Brassicaceae	<i>Rorippa palustris</i> ssp. <i>palustris</i>	yellowcress	--	--	Y
Brassicaceae	<i>Sisymbrium officinale</i>	hedge mustard	--	--	N
Brassicaceae	<i>Sisymbrium orientale</i>	oriental mustard	--	--	N
Brassicaceae	<i>Streptanthus polygaloides</i>	milkwort jewelflower	--	--	Y
Brassicaceae	<i>Streptanthus tortuosus</i> var. <i>suffrutescens</i>	mountain jewlflower	--	<i>Streptanthus tortuosus</i>	Y
Brassicaceae	<i>Thysanocarpus curvipes</i>	lace pod	--	--	Y
Brassicaceae	<i>Tropidocarpum gracile</i>	dobiepod	--	--	Y
Cactaceae	<i>Opuntia ficus-indica</i>	Mission prickly-pear	--	--	N
Callitrichaceae	<i>Callitriche heterophylla</i>	water starwort	Plantaginaceae	--	Y
Callitrichaceae	<i>Callitriche heterophylla</i> var.	varied leaf water starwort	Plantaginaceae	--	Y

Family	Species	Common Name	New Family	New Species Name	Native Y/N
	<i>heterophylla</i>				
Callitrichaceae	<i>Callitriche marginata</i>	winged water starwort	Plantaginaceae	--	Y
Calycanthaceae	<i>Calycanthus occidentalis</i>	spicebush	--	--	Y
Campanulaceae	<i>Githopsis pulchella</i> ssp. <i>campestris</i>	Sierra bluecup	--	--	Y
Campanulaceae	<i>Githopsis pulchella</i> ssp. <i>pulchella</i>	Sierra bluecup	--	--	Y
Campanulaceae	<i>Githopsis pulchella</i> ssp. <i>serpentinicola</i>	serpentine bluecup	--	--	Y
Campanulaceae	<i>Githopsis pulchella</i> var. <i>glabra</i>	largeflower bluecup	--	--	Y
Campanulaceae	<i>Githopsis pulchella</i> var. <i>pulchella</i>	Sierra bluecup	--	--	Y
Campanulaceae	<i>Heterocodon rariflorum</i>	rareflower heterocodon	--	--	Y
Campanulaceae	<i>Nemacladus interior</i>	Sierra threadstem	--	--	Y
Caprifoliaceae	<i>Lonicera hispidula</i>	pink honeysuckle	--	--	Y
Caprifoliaceae	<i>Lonicera interrupta</i>	chaparral honeysuckle	--	--	Y
Caprifoliaceae	<i>Sambucus mexicana</i>	Mexican elderberry	Adoxaceae	<i>Sambucus nigra</i> ssp. <i>caerulea</i>	Y
Caprifoliaceae	<i>Symphoricarpos albus</i> var. <i>laevigatus</i>	common snowberry	--	--	Y
Caryophyllaceae	<i>Arenaria serpyllifolia</i>	thyme-leaved sandwort	--	--	N
Caryophyllaceae	<i>Cerastium arvense</i>	field chickweed	--	--	Y
Caryophyllaceae	<i>Cerastium fontanum</i> ssp. <i>vulgare</i>	big chickweed	--	--	N
Caryophyllaceae	<i>Cerastium glomeratum</i>	mouse-eared chickweed	--	--	N
Caryophyllaceae	<i>Herniaria hirsuta</i> var. <i>hirsuta</i>	hairy rupturewort	--	--	N
Caryophyllaceae	<i>Holosteum umbellatum</i> ssp. <i>umbellatum</i>	jagged chickweed	--	--	N
Caryophyllaceae	<i>Minuartia californica</i>	California sandwort	--	--	Y
Caryophyllaceae	<i>Petrorhagia dubia</i>	wild carnation	--	--	N
Caryophyllaceae	<i>Polycarpon tetraphyllum</i>	four-leaved allseed	--	<i>Polycarpon tetraphyllum</i> var. <i>tetraphyllum</i>	N
Caryophyllaceae	<i>Sagina apetela</i>	sticky pearlwort	--	--	N
Caryophyllaceae	<i>Sagina decumbens</i> ssp. <i>occidentalis</i>	western pearlwort	--	--	Y
Caryophyllaceae	<i>Scleranthus annuus</i> ssp. <i>annuus</i>	annual scleranthus	--	--	N
Caryophyllaceae	<i>Silene antirrhina</i>	sleepy catchfly	--	--	Y
Caryophyllaceae	<i>Silene gallica</i>	common catchfly	--	--	N
Caryophyllaceae	<i>Spergula arvensis</i> ssp. <i>arvensis</i>	spurry	--	<i>Spergula arvensis</i>	N
Caryophyllaceae	<i>Spergularia rubra</i>	red sandspurry	--	--	N
Caryophyllaceae	<i>Stellaria media</i>	common chickweed	--	--	N
Caryophyllaceae	<i>Velezia rigida</i>	velezia	--	--	N



Family	Species	Common Name	New Family	New Species Name	Native Y/N
Chenopodiaceae	<i>Chenopodium album</i>	common lambsquarters	--	--	N
Chenopodiaceae	<i>Chenopodium pumilio</i>	clammy goosefoot	--	<i>Dysphania pumilio</i>	N
Chenopodiaceae	<i>Salsola tragus</i>	Russian thistle	--	--	N
Cistaceae	<i>Tuberaria guttata</i>	European frostweed	--	--	N
Convolvulaceae	<i>Calystegia occidentalis</i> ssp. <i>fulcrata</i>	chaparral false bindweed	--	--	Y
Convolvulaceae	<i>Calystegia occidentalis</i> ssp. <i>occidentalis</i>	western morning glory	--	--	N
Convolvulaceae	<i>Convolvulus arvensis</i>	field bindweed	--	--	N
Convolvulaceae	<i>Cuscuta indecora</i>	bigseed alfalfa dodder	--	--	Y
Convolvulaceae	<i>Dichondra donelliana</i>	pony's foot	--	--	Y
Crassulaceae	<i>Crassula aquatica</i>	common pygmyweed	--	--	Y
Crassulaceae	<i>Crassula connata</i>	sand pygmyweed	--	--	Y
Crassulaceae	<i>Crassula tillaea</i>	moss pygmyweed	--	--	N
Crassulaceae	<i>Dudleya cymosa</i>	canyon liveforever	--	--	Y
Crassulaceae	<i>Dudleya cymosa</i> ssp. <i>cymosa</i>	liveforever	--	--	Y
Crassulaceae	<i>Sedum spathulifolium</i>	broadleaf stonecrop	--	--	Y
Cucurbitaceae	<i>Marah fabaceus</i> var. <i>agrestis</i>	California manroot	--	<i>Marah fabacea</i>	Y
Ericaceae	<i>Arctostaphylos manzanita</i> ssp. <i>manzanita</i>	manzanita	--	--	Y
Ericaceae	<i>Arctostaphylos viscida</i> ssp. <i>viscida</i>	whiteleaf manzanita	--	--	Y
Euphorbiaceae	<i>Chamaesyce maculata</i>	large spurge	--	--	N
Euphorbiaceae	<i>Eremocarpus setigerus</i>	turkey mullen	--	<i>Croton setiger</i>	Y
Euphorbiaceae	<i>Euphorbia crenulata</i>	crenulate spurge	--	--	Y
Euphorbiaceae	<i>Euphorbia peplus</i>	petty spurge	--	--	N
Euphorbiaceae	<i>Euphorbia spathulata</i>	spurge	--	--	Y
Fabaceae	<i>Albizia julibrissin</i>	Persian silk tree	--	--	N
Fabaceae	<i>Astragalus gambelianus</i>	Gambel's milkvetch	--	--	Y
Fabaceae	<i>Cercis occidentalis</i>	Western redbud	--	--	Y
Fabaceae	<i>Hoita macrostachya</i>	leather root	--	--	Y
Fabaceae	<i>Lathyrus sulphureus</i>	sulphur pea	--	--	Y
Fabaceae	<i>Lotus corniculatus</i>	bird's-foot trefoil	--	--	N
Fabaceae	<i>Lotus humistratus</i>	hill lotus	--	<i>Acmispon brachycarpus</i>	Y
Fabaceae	<i>Lotus micranthus</i>	deervetch	--	<i>Acmispon parviflorus</i>	Y
Fabaceae	<i>Lotus purshianus</i> var. <i>purshianus</i>	Spanish clover	--	<i>Acmispon americanus</i>	Y
Fabaceae	<i>Lotus scoparius</i>	California broom	--	<i>Acmispon glaber</i>	Y
Fabaceae	<i>Lotus strigosus</i>	Bishop lotus	--	<i>Acmispon strigosus</i>	Y
Fabaceae	<i>Lotus wrangelianus</i>	deerweed	--	<i>Acmispon wrangelianus</i>	Y

Family	Species	Common Name	New Family	New Species Name	Native Y/N
Fabaceae	<i>Lupinus albicaulis</i>	sickle-keeled lupine	--	--	Y
Fabaceae	<i>Lupinus albifrons</i>	silver bush lupine	--	--	Y
Fabaceae	<i>Lupinus benthamii</i>	spider lupine	--	--	Y
Fabaceae	<i>Lupinus bicolor</i>	miniature lupine	--	--	Y
Fabaceae	<i>Lupinus grayi</i>	Gray's lupine	--	--	Y
Fabaceae	<i>Lupinus microcarpus</i> var. <i>densiflorus</i>	chick lupine	--	--	Y
Fabaceae	<i>Lupinus nanus</i>	sky lupine	--	--	Y
Fabaceae	<i>Lupinus spectabilis</i>	shaggy haired lupine	--	--	Y
Fabaceae	<i>Lupinus stiversii</i>	harlequin lupine	--	--	Y
Fabaceae	<i>Medicago arabica</i>	spotted burclover	--	--	N
Fabaceae	<i>Medicago lupulina</i>	black medic	--	--	N
Fabaceae	<i>Medicago polymorpha</i>	common burclover	--	--	N
Fabaceae	<i>Melilotus albus</i>	white sweetclover	--	--	N
Fabaceae	<i>Melilotus indicus</i>	sourclover	--	--	N
Fabaceae	<i>Melilotus officinalis</i>	yellow sweetclover	--	--	N
Fabaceae	<i>Robinia pseudoacacia</i>	black locust	--	--	N
Fabaceae	<i>Spartium junceum</i>	Spanish broom	--	--	N
Fabaceae	<i>Trifolium albopurpureum</i> var. <i>albopurpureum</i>	Indian clover	--	<i>Trifolium</i> <i>albopurpureum</i>	Y
Fabaceae	<i>Trifolium barbigerum</i>	lilac clover	--	--	Y
Fabaceae	<i>Trifolium bifidum</i> var. <i>bifidum</i>	bifid clover	--	--	Y
Fabaceae	<i>Trifolium bifidum</i> var. <i>decipiens</i>	Pinole clover	--	--	Y
Fabaceae	<i>Trifolium campestre</i>	hop clover	--	--	N
Fabaceae	<i>Trifolium cernuum</i>	nodding clover	--	--	N
Fabaceae	<i>Trifolium ciliolatum</i>	foothill clover	--	--	Y
Fabaceae	<i>Trifolium depauperatum</i> ssp. <i>amplectens</i>	balloon sack clover	--	--	Y
Fabaceae	<i>Trifolium depauperatum</i> ssp. <i>depauperatum</i>	cowbag clover	--	--	Y
Fabaceae	<i>Trifolium dubium</i>	little hop clover	--	--	N
Fabaceae	<i>Trifolium glomeratum</i>	clustered clover	--	--	N
Fabaceae	<i>Trifolium hirtum</i>	rose clover	--	--	N
Fabaceae	<i>Trifolium microcephalum</i>	littlehead clover	--	--	Y
Fabaceae	<i>Trifolium obtusiflorum</i>	clammy clover	--	--	Y
Fabaceae	<i>Trifolium oliganthum</i>	few-flowered clover	--	--	N
Fabaceae	<i>Trifolium repens</i>	white clover	--	--	Y

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Fabaceae	<i>Trifolium subterraneum</i>	subterranean clover	--	--	N
Fabaceae	<i>Trifolium variegatum</i> var. <i>variegatum</i>	whitetip clover	--	--	Y
Fabaceae	<i>Trifolium willdenovii</i>	tomcat clover	--	--	Y
Fabaceae	<i>Vicia benghalensis</i>	reddish tufted vetch	--	--	N
Fabaceae	<i>Vicia hirsuta</i>	hairy vetch	--	--	N
Fabaceae	<i>Vicia sativa</i> ssp. <i>nigra</i>	spring vetch	--	--	N
Fabaceae	<i>Vicia sativa</i> ssp. <i>sativa</i>	spring vetch	--	--	N
Fabaceae	<i>Vicia villosa</i> ssp. <i>varia</i>	winter vetch	--	--	N
Fabaceae	<i>Vicia villosa</i> ssp. <i>villosa</i>	winter vetch	--	--	N
Fagaceae	<i>Quercus agrifolia</i>	coast live oak	--	--	Y
Fagaceae	<i>Quercus douglasii</i>	California blue oak	--	--	Y
Fagaceae	<i>Quercus lobata</i>	Valley oak	--	--	Y
Fagaceae	<i>Quercus wislizeni</i>	interior live oak	--	--	Y
Gentianaceae	<i>Centaurium muehlenbergii</i>	Muhlenberg's Centaury	--	<i>Zeltnera muehlenbergii</i>	Y
Gentianaceae	<i>Cicendia quadrangularis</i>	Oregon timwort	--	--	Y
Geraniaceae	<i>Erodium botrys</i>	long-beaked stork's-bill	--	--	N
Geraniaceae	<i>Erodium bracycarpum</i>	shortfruit stork's-bill	--	--	N
Geraniaceae	<i>Erodium cicutarium</i>	redstem filaree	--	--	N
Geraniaceae	<i>Erodium moschatum</i>	whitestem filaree	--	--	N
Geraniaceae	<i>Geranium dissectum</i>	dissected geranium	--	--	N
Geraniaceae	<i>Geranium molle</i>	dovesfoot geranium	--	--	N
Grossulariaceae	<i>Ribes quercetorum</i>	oak gooseberry	--	--	Y
Hippocastanaceae	<i>Aesculus californica</i>	California buckeye	Sapindaceae	--	Y
Hydrophyllaceae	<i>Eriodictyon californicum</i>	yerba santa	Boraginaceae	--	Y
Hydrophyllaceae	<i>Nemophila heterophylla</i>	white nemophila	Boraginaceae	--	Y
Hydrophyllaceae	<i>Nemophila menziesii</i>	baby blue eyes	Boraginaceae	--	Y
Hydrophyllaceae	<i>Nemophila pedunculata</i>	littlefoot nemophila	Boraginaceae	--	Y
Hydrophyllaceae	<i>Nemophila pulchella</i> var. <i>fremontii</i>	Fremont's nemophila	Boraginaceae	--	N
Hydrophyllaceae	<i>Pholistoma auritum</i>	fiestaflower	Boraginaceae	--	Y
Hydrophyllaceae	<i>Pholistoma auritum</i> var. <i>auritum</i>	fiestaflower	Boraginaceae	--	Y
Hypericaceae	<i>Hypericum anagalloides</i>	tinker's penny	--	--	Y
Hypericaceae	<i>Hypericum perforatum</i>	Klamathweed	--	--	N
Juglandaceae	<i>Juglans californica</i> var. <i>hindsii</i>	Northern California walnut	--	<i>Juglans hindsii</i>	Y
Juglandaceae	<i>Juglans regia</i>	English walnut	--	--	N
Lamiaceae	<i>Lamarcia aurea</i>	Goldentop	--	--	N
Lamiaceae	<i>Lepechinia calycina</i>	pitcher sage	--	--	Y
Lamiaceae	<i>Marrubium vulgare</i>	common horehound	--	--	Y

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Lamiaceae	<i>Mentha arvensis</i>	field mint	--	--	N
Lamiaceae	<i>Mentha pulegium</i>	pennyroyale	--	--	N
Lamiaceae	<i>Mentha spicata</i> var. <i>spicata</i>	Spearmint	--	<i>Mentha spicata</i>	N
Lamiaceae	<i>Monardella sheltonii</i>	Shelton's coyote mint	--	--	Y
Lamiaceae	<i>Monardella villosa</i> ssp. <i>villosa</i>	coyote mint	--	--	Y
Lamiaceae	<i>Pogogyne serpylloides</i>	thymeleaf mesa mint	--	--	Y
Lamiaceae	<i>Rosemarinus officinalis</i>	Rosemary	--	--	N
Lamiaceae	<i>Salvia columbariae</i>	Chia	--	--	Y
Lamiaceae	<i>Scutellaria siphocampyloides</i>	narrow-leaved skullcap	--	--	Y
Lamiaceae	<i>Scutellaria tuberosa</i>	blue-skullcap	--	--	Y
Lamiaceae	<i>Stachys ajugoides</i> ssp. <i>rigida</i>	rigid hedgenettle	--	<i>Stachys rigida</i> var. <i>rigida</i>	Y
Lamiaceae	<i>Stachys albens</i>	cobwebby hedgenettle	--	--	Y
Lamiaceae	<i>Trichostema lanceolatum</i>	vinegarweed	--	--	Y
Lamiaceae	<i>Trichostema laxum</i>	turpentine weed	--	--	Y
Lamiaceae	<i>Trichostema rubisepalum</i>	Hernandez bluecurls	--	--	Y
Limnanthaceae	<i>Limnanthes douglasii</i> ssp. <i>striata</i>	meadowfoam	--	--	Y
Limnanthaceae	<i>Limnanthes montana</i>	mountain meadowfoam	--	--	Y
Linaceae	<i>Hesperolinon micranthum</i>	small-flowered dwarf flax	--	--	Y
Loasaceae	<i>Mentzelia crocea</i>	Sierra blazingstar	--	--	Y
Loasaceae	<i>Mentzelia laevicaulis</i>	giant blazingstar	--	--	Y
Lythraceae	<i>Lythrum californicum</i>	California loosestrife	--	--	Y
Lythraceae	<i>Lythrum hyssopifolia</i>	hyssop loosestrife	--	--	N
Malvaceae	<i>Malva neglecta</i>	common mallow	--	--	N
Malvaceae	<i>Malva parviflora</i>	cheeseweed	--	--	Y
Malvalceae	<i>Sidalcea calycosa</i>	vernal pool checkerbloom	--	--	Y
Malvalceae	<i>Sidalcea hartwegii</i>	Hartweg checker mallow	--	--	Y
Malvalceae	<i>Sidalcea malviflora</i> ssp. <i>asprella</i>	harsh checkerbloom	--	<i>Sidalcea asprella</i> ssp. <i>asprella</i>	Y
Molluginaceae	<i>Mollugo verticillata</i>	carpet weed	--	--	N
Moraceae	<i>Ficus carica</i>	edible fig	--	--	N
Moraceae	<i>Morus alba</i>	white mulberry	--	--	N
Myrtaceae	<i>Callistemon</i> sp.	bottlebrush plant	--	<i>Melaleuca</i> sp.	N
Myrtaceae	<i>Eucalyptus camaldulensis</i>	red gum	--	--	N
Myrtaceae	<i>Eucalyptus sideroxylon</i>	red iron bark	--	--	N
Oleaceae	<i>Fraxinus dipetala</i>	California ash	--	--	Y
Oleaceae	<i>Fraxinus latifolia</i>	Oregon ash	--	--	Y
Oleaceae	<i>Olea europaea</i>	Olive	--	--	N

Family	Species	Common Name	New Family	New Species Name	Native Y/N
Oleaceae	<i>Syringia vulgaris</i>	common lilac	--	--	N
Onagraceae	<i>Clarkia biloba</i> ssp. <i>australis</i>	Mariposa clarkia	--	--	Y
Onagraceae	<i>Clarkia biloba</i> ssp. <i>biloba</i>	two lobed clarkia	--	--	Y
Onagraceae	<i>Clarkia dudleyana</i>	Dudley's fairyfan	--	--	Y
Onagraceae	<i>Clarkia gracilis</i>	graceful clarkia	--	--	Y
Onagraceae	<i>Clarkia gracilis</i> ssp. <i>gracilis</i>	graceful clarkia	--	--	Y
Onagraceae	<i>Clarkia purpurea</i> ssp. <i>quadrivulnera</i>	four-spotted clarkia	--	--	Y
Onagraceae	<i>Clarkia purpurea</i> ssp. <i>viminea</i>	winecup fairyfan	--	--	Y
Onagraceae	<i>Clarkia unguiculata</i>	woodland clarkia	--	--	Y
Onagraceae	<i>Epilobium brachycarpum</i>	annual fireweed	--	--	Y
Onagraceae	<i>Epilobium canum</i> ssp. <i>latifolium</i>	California fushia	--	--	Y
Onagraceae	<i>Epilobium cilatum</i> ssp. <i>cilatum</i>	fringed willowherb	--	--	Y
Onagraceae	<i>Epilobium minutum</i>	little willowherb	--	--	Y
Onagraceae	<i>Epilobium torreyi</i>	Boisduvalia	--	--	Y
Onagraceae	<i>Ludwigia peploides</i> ssp. <i>peploides</i>	water primrose	--	--	N
Onagraceae	<i>Oenothera laciniata</i>	cut-leaved evening primrose	--	--	N
Orobanchaceae	<i>Orobanche fasciculata</i>	clustered broomrape	--	--	Y
Orobanchaceae	<i>Orobanche uniflora</i>	naked broomrape	--	--	Y
Orobanchaceae	<i>Orobanche uniflora</i> var. <i>uniflora</i>	one flowered broomrape	--	--	Y
Oxalidaceae	<i>Oxalis corniculata</i>	creeping woodsorrel	--	--	N
Oxalidaceae	<i>Oxalis micrantha</i>	dwarf wood sorrel	--	--	N
Oxalidaceae	<i>Oxalis pes-caprae</i>	Bermuda buttercup	--	--	N
Papaveraceae	<i>Eschscholzia caespitosa</i>	foothill poppy	--	--	Y
Papaveraceae	<i>Eschscholzia californica</i>	Californica poppy	--	--	Y
Papaveraceae	<i>Eschscholzia lobbii</i>	frying pans	--	--	Y
Papaveraceae	<i>Meconella californica</i>	California fairy poppy	--	--	Y
Philadelphaceae	<i>Philadelphus lewisii</i>	Lewis' mockorange	--	--	Y
Plantaginaceae	<i>Plantago coronopus</i>	Plantain	--	--	Y
Plantaginaceae	<i>Plantago elongata</i>	Plantain	--	--	N
Plantaginaceae	<i>Plantago erecta</i>	California plantain	--	--	Y
Plantaginaceae	<i>Plantago lanceolata</i>	English plantain	--	--	N
Plantaginaceae	<i>Plantago major</i>	common plantain	--	--	N
Plantanaceae	<i>Plantanus racemosa</i>	Western sycamore	--	--	Y
Polemoniaceae	<i>Gilia capitata</i>	bluehead gilia	--	--	Y
Polemoniaceae	<i>Gilia capitata</i> ssp. <i>capitata</i>	blue-headed gilia	--	--	Y
Polemoniaceae	<i>Gilia tricolor</i> ssp. <i>diffusa</i>	birds-eye gilia	--	--	Y

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Polemoniaceae	<i>Lessingia nemaclada</i>	slender-stemmed lessingia	--	--	Y
Polemoniaceae	<i>Linanthus bicolor</i>	true babystars	--	<i>Leptosiphon bicolor</i>	Y
Polemoniaceae	<i>Linanthus bolanderi</i>	Bolander's linanthus	--	<i>Leptosiphon bolanderi</i>	Y
Polemoniaceae	<i>Linanthus ciliatus</i>	whiskerbrush	--	<i>Leptosiphon cilitus</i>	Y
Polemoniaceae	<i>Linanthus dichotomus</i>	eveningsnow	--	--	Y
Polemoniaceae	<i>Linanthus filipes</i>	thread linanthus	--	<i>Leptosiphon filipes</i>	Y
Polemoniaceae	<i>Linanthus parviflorus</i>	small-flowered leptosiphon	--	<i>Leptosiphon parviflorus</i>	Y
Polemoniaceae	<i>Microsteris gracilis</i>	slender phlox	--	--	Y
Polemoniaceae	<i>Navarretia intertexta</i> ssp. <i>intertexta</i>	needleleaf navarretia	--	--	Y
Polemoniaceae	<i>Navarretia pubescens</i>	downy pincusion plant	--	--	Y
Polygalaceae	<i>Polygala cornuta</i> var. <i>cornuta</i>	Sierra milkwort	--	--	Y
Polygonaceae	<i>Chorizanthe membranacea</i>	pink spineflower	--	--	Y
Polygonaceae	<i>Eriogonum luteolum</i> var. <i>pedunculatum</i>	goldencarpet buckwheat	--	--	Y
Polygonaceae	<i>Eriogonum nudum</i> ssp. <i>pubiflorum</i>	hairy-flowered buckwheat	--	--	Y
Polygonaceae	<i>Eriogonum nudum</i> var. <i>nudum</i>	naked buckwheat	--	--	Y
Polygonaceae	<i>Eriogonum nudum</i> var. <i>oblongifolium</i>	naked buckwheat	--	--	Y
Polygonaceae	<i>Eriogonum roseum</i>	wand buckwheat	--	--	Y
Polygonaceae	<i>Eriogonum tripodum</i>	tripod buckwheat	--	--	Y
Polygonaceae	<i>Polygonum arenastrum</i>	common knotweed	--	<i>Polygonum aviculare</i> ssp. <i>depressum</i>	N
Polygonaceae	<i>Polygonum californicum</i>	California knotweed	--	--	Y
Polygonaceae	<i>Polypogon monspeliensis</i>	annual beard grass	--	--	N
Polygonaceae	<i>Pterostegia drymarioides</i>	woodland threadstem	--	--	Y
Polygonaceae	<i>Rumex acetosella</i>	sheep sorrel	--	--	N
Polygonaceae	<i>Rumex californicus</i>	California dock	--	--	Y
Polygonaceae	<i>Rumex conglomeratus</i>	clustered dock	--	--	N
Polygonaceae	<i>Rumex crispus</i>	curled dock	--	--	N
Polygonaceae	<i>Rumex dentatus</i>	toothed dock	--	--	N
Polygonaceae	<i>Rumex pulcher</i>	fiddle dock	--	--	N
Polygonaceae	<i>Rumex salicifolius</i>	willow dock	--	--	Y
Portulacaceae	<i>Calandrinia ciliata</i>	red maids	Montiaceae	--	Y
Portulacaceae	<i>Claytonia exigua</i> ssp. <i>exigua</i>	serpentine springbeauty	Montiaceae	--	Y
Portulacaceae	<i>Claytonia parviflora</i> ssp. <i>parviflora</i>	streambank springbeauty	Montiaceae	--	Y
Portulacaceae	<i>Claytonia perfoliata</i> ssp. <i>perfoliata</i>	miner's lettuce	Montiaceae	--	Y
Portulacaceae	<i>Claytonia rubra</i>	redstem springbeauty	Montiaceae	--	Y

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Portulacaceae	<i>Claytonia rubra</i> ssp. <i>rubra</i>	redstem springbeauty	Montiaceae	--	Y
Portulacaceae	<i>Montia fontana</i>	water chickweed	Montiaceae	--	Y
Portulacaceae	<i>Portulaca oleracea</i>	Garden purslane	--	--	N
Primulaceae	<i>Anagallis arvensis</i>	scarlet pimpernel	Myrsinaceae	--	N
Primulaceae	<i>Centunculus minimus</i>	Chaffweed	Myrsinaceae	<i>Anagallis minima</i>	Y
Primulaceae	<i>Dodecatheon hendersonii</i>	mosquitobills	--	--	Y
Ranunculaceae	<i>Clematis lasiantha</i>	pipestem clematis	--	--	Y
Ranunculaceae	<i>Delphinium hansenii</i> ssp. <i>ewanianum</i>	Ewan's larkspur	--	--	Y
Ranunculaceae	<i>Delphinium hansenii</i> ssp. <i>hansenii</i>	Hansen's delphinium	--	--	Y
Ranunculaceae	<i>Delphinium variegatum</i> ssp. <i>variegatum</i>	royal lark	--	--	Y
Ranunculaceae	<i>Kumlienia hystricula</i>	waterfall false buttercup	--	<i>Ranunculus hystriculus</i>	Y
Ranunculaceae	<i>Ranunculus aquatilis</i> var. <i>capillaceus</i>	water buttercup	--	<i>Ranunculus aquatilis</i> var. <i>diffusus</i>	Y
Ranunculaceae	<i>Ranunculus californicus</i>	Buttercup	--	--	Y
Ranunculaceae	<i>Ranunculus hebecarpus</i>	delicate buttercup	--	--	Y
Ranunculaceae	<i>Ranunculus muricatus</i>	spinyfruit buttercup	--	--	N
Ranunculaceae	<i>Ranunculus occidentalis</i> ssp. <i>occidentalis</i>	Western buttercup	--	--	Y
Ranunculaceae	<i>Ranunculus uncinatus</i>	woodland buttercup	--	--	Y
Rhamnaceae	<i>Ceanothus cuneatus</i> var. <i>cuneatus</i>	Buckbrush	--	--	Y
Rhamnaceae	<i>Ceanothus thyrsiflorus</i>	ceanothus "cultivar"	--	--	N
Rhamnaceae	<i>Rhamnus ilicifolia</i>	hollyleaf redberry	--	--	Y
Rhamnaceae	<i>Rhamnus tomentella</i> ssp. <i>cuspidata</i>	Sierra hoary coffeeberry	--	<i>Frangula californica</i>	Y
Rosaceae	<i>Adenostoma fasciculatum</i> var. <i>fasciculatum</i>	Chamise	--	--	Y
Rosaceae	<i>Aphanes occidentalis</i>	lady's mantle	--	--	Y
Rosaceae	<i>Cercocarpus betuloides</i> var. <i>betuloides</i>	birch-leaf mountain mahogany	--	--	Y
Rosaceae	<i>Heteromeles arbutifolia</i>	Toyon	--	--	Y
Rosaceae	<i>Horkelia californica</i> ssp. <i>dissita</i>	California honeydew	--	<i>Horkelia californica</i> var. <i>elata</i>	Y
Rosaceae	<i>Photinia</i> sp.	Photinia	--	--	Y
Rosaceae	<i>Potentilla glandulosa</i> ssp. <i>glandulosa</i>	sticky cinquefoil	--	<i>Drymocallis glandulosa</i> var. <i>glandulosa</i>	Y
Rosaceae	<i>Prunus ameniaca</i>	Apricot	--	--	N
Rosaceae	<i>Prunus cerasifera</i>	cherry plum	--	--	N

Family	Species	Common Name	New Family	New Species Name	Native Y/N
Rosaceae	<i>Prunus dulcis</i>	sweet almond	--	--	N
Rosaceae	<i>Pyracantha koidzumii</i>	Formosa firethorn	--	--	N
Rosaceae	<i>Rubus discolor</i>	Himalyan blackberry	--	<i>Rubus armeniacus</i>	N
Rosaceae	<i>Rubus ursinus</i>	California blackberry	--	--	Y
Rubiaceae	<i>Cephalanthus occidentalis</i> var. <i>californicus</i>	California button willow	--	--	N
Rubiaceae	<i>Galium aparine</i>	annual bedstraw	--	--	Y
Rubiaceae	<i>Galium murale</i>	tiny bedstraw	--	--	N
Rubiaceae	<i>Galium parisiense</i>	Paris bedstraw	--	--	N
Rubiaceae	<i>Galium porrigens</i> var. <i>tenue</i>	twining bedstraw	--	--	Y
Rubiaceae	<i>Setaria parviflora</i>	knotroot bristle grass	--	--	N
Salicaceae	<i>Populus balsamifera</i> ssp. <i>trichocarpa</i>	black cottonwood	--	<i>Populus trichocarpa</i>	Y
Salicaceae	<i>Populus fremontii</i> ssp. <i>fremontii</i>	Fremont's poplar	--	--	Y
Salicaceae	<i>Salix exigua</i>	narrow leaf willow	--	--	Y
Salicaceae	<i>Salix gooddingii</i>	Goodding's willow	--	--	Y
Salicaceae	<i>Salix laevigata</i>	red willow	--	--	Y
Salicaceae	<i>Salix lasiolepis</i> var. <i>lasiolepis</i>	arroyo willow	--	<i>Salix lasiolepis</i>	Y
Salicaceae	<i>Salix lucida</i> ssp. <i>lasiandra</i>	shining willow	--	<i>Salix lasiandra</i> var. <i>lasiandra</i>	Y
Saxifragaceae	<i>Jepsonia heterandra</i> *	foothill Jepsonia	--	--	Y
Saxifragaceae	<i>Lithophragma affine</i>	San Francisco woodland star	--	--	Y
Saxifragaceae	<i>Lithophragma bolanderi</i>	Bolander's woodland star	--	--	Y
Saxifragaceae	<i>Saxifraga californica</i>	California saxifrage	--	<i>Micranthes californica</i>	Y
Saxifragaceae	<i>Saxifraga integrifolia</i>	grassland saxifrage	--	<i>Micranthes integrifolia</i>	Y
Scrophulariaceae	<i>Antirrhinum vexilloalyculatum</i> ssp. <i>intermedium</i>	sail-flowered snapdragon	Plantaginaceae	--	Y
Scrophulariaceae	<i>Buddleja davidii</i>	Butterfly bush	--	--	N
Scrophulariaceae	<i>Castilleja applegatei</i> ssp. <i>Pinetorum</i>	wavy-leaved Indian paintbrush	Orobanchaceae	--	Y
Scrophulariaceae	<i>Castilleja attenuata</i>	Valley tassels	Orobanchaceae	--	Y
Scrophulariaceae	<i>Castilleja densiflora</i> ssp. <i>densiflora</i>	dense-flowered Indian paintbrush	Orobanchaceae	--	Y
Scrophulariaceae	<i>Castilleja foliolosa</i>	woolly paintbrush	Orobanchaceae	--	Y
Scrophulariaceae	<i>Castilleja lacera</i>	Foothill owl's clover	Orobanchaceae	--	Y
Scrophulariaceae	<i>Castilleja lineariloba</i>	thin-lobed owl's clover	Orobanchaceae	--	Y
Scrophulariaceae	<i>Castilleja minor</i> ssp. <i>spiralis</i>	lesser Indian paintbrush	Orobanchaceae	--	Y



Family	Species	Common Name	New Family	New Species Name	Native Y/N
Scrophulariaceae	<i>Castilleja wightii</i>	Wright's indian paintbrush	Orobanchaceae	<i>Castilleja affinis</i> ssp. <i>affinis</i>	Y
Scrophulariaceae	<i>Collinsia bartsiiifolia</i> var. <i>bartsiiifolia</i>	white blue-eyed Mary	Plantaginaceae	--	Y
Scrophulariaceae	<i>Collinsia heterophylla</i> var. <i>heterophylla</i>	Chinese houses	Plantaginaceae	--	Y
Scrophulariaceae	<i>Collinsia sparsiflora</i>	spinster's blue-eyed mary	Plantaginaceae	--	Y
Scrophulariaceae	<i>Collinsia sparsiflora</i> var. <i>sparsiflora</i>	spinster's blue-eyed mary	Plantaginaceae	--	Y
Scrophulariaceae	<i>Collinsia tinctoria</i>	tincture plant	Plantaginaceae	--	Y
Scrophulariaceae	<i>Cordylanthus tenuis</i> ssp. <i>tenuis</i>	Bolander's bird beak	Orobanchaceae	--	Y
Scrophulariaceae	<i>Limosella acaulis</i>	mudwort	--	--	Y
Scrophulariaceae	<i>Keckiella breviflora</i>	bush beardtounge	Plantaginaceae	--	Y
Scrophulariaceae	<i>Kickxia spuria</i>	fluellin	Plantaginaceae	--	N
Scrophulariaceae	<i>Mimulus aurantiacus</i>	sticky monkeyflower	Phrymaceae	--	Y
Scrophulariaceae	<i>Mimulus cardinalis</i>	scarlet monkeyflower	Phrymaceae	--	Y
Scrophulariaceae	<i>Mimulus floribundus</i>	floriferous monkeyflower	Phrymaceae	--	Y
Scrophulariaceae	<i>Mimulus guttatus</i>	seepspring monkeyflower	Phrymaceae	--	Y
Scrophulariaceae	<i>Mimulus moschatus</i>	musk monkeyflower	Phrymaceae	--	Y
Scrophulariaceae	<i>Mimulus pilosus</i>	snouted monkeyflower	Phrymaceae	--	Y
Scrophulariaceae	<i>Scrophularia californica</i> ssp. <i>floribunda</i>	California figwort	--	<i>Scrophularia californica</i>	Y
Scrophulariaceae	<i>Triphysaria eriantha</i> ssp. <i>eriantha</i>	butter and eggs	Orobanchaceae	--	Y
Scrophulariaceae	<i>Triphysaria pusilla</i>	little owl's clover	Orobanchaceae	--	Y
Scrophulariaceae	<i>Veronica anagallis-aquatica</i>	water speedwell	Plantaginaceae	--	N
Scrophulariaceae	<i>Veronica peregrina</i> ssp. <i>xalapensis</i>	hairy purslane speedwell	Plantaginaceae	--	Y
Scrophulariaceae	<i>Verbascum blattaria</i>	moth mullein	--	--	N
Scrophulariaceae	<i>Verbascum thapsus</i>	wooly mullein	--	--	N
Scrophulariaceae	<i>Verbascum virgatum</i>	wand mullein	--	--	N
Selaginellaceae	<i>Selaginella hansenii</i>	Hansen's spike-moss	--	--	Y
Simaroubaceae	<i>Ailanthus altissima</i>	tree of heaven	--	--	N
Solanaceae	<i>Datura wrightii</i>	Jimson weed	--	--	Y
Solanaceae	<i>Nicotiana acuminata</i> var. <i>multiflora</i>	manyflower tobacco	--	--	N
Solanaceae	<i>Solanum americanum</i>	American black nightshade	--	--	Y
Solanaceae	<i>Solanum parishii</i>	Parish's nightshade	--	--	Y
Solanaceae	<i>Solanum xanti</i>	chaparral nightshade	--	--	Y
Ulmaceae	<i>Ulmus parvifolia</i>	Chinese Elm	--	--	N
Urticaceae	<i>Urtica urens</i>	dwarf nettle	--	--	N
Valerianaceae	<i>Plectritis ciliosa</i> ssp. <i>insignis</i>	long-spurred seablush	--	<i>Plectritis ciliosa</i>	Y

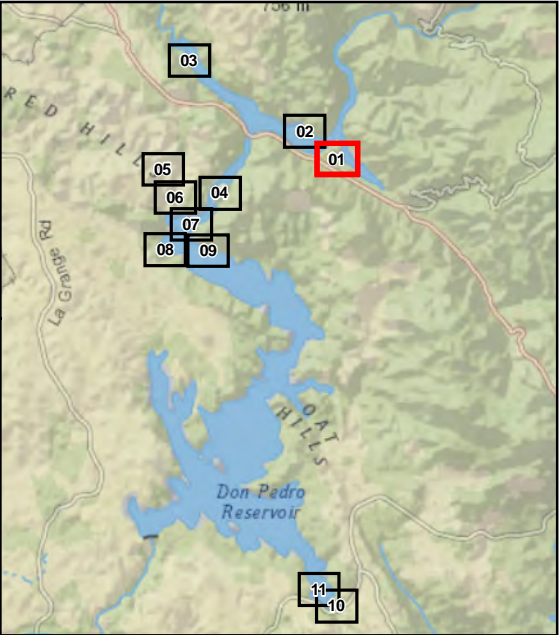
Family	Species	Common Name	New Family	New Species Name	Native Y/N
Valerianaceae	<i>Plectritis macrocera</i>	white plectritis	--	--	Y
Valerianaceae	<i>Valerianella carinata</i>	European cornsalad	--	--	N
Valerianaceae	<i>Valerianella locusta</i>	corn salad	--	--	N
Verbenaceae	<i>Verbena bonariensis</i>	purple top vervain	--	--	N
Verbenaceae	<i>Verbena bracteata</i>	vervain	--	--	Y
Verbenaceae	<i>Verbena californica</i>	Red Hills vervain	--	--	Y
Violaceae	<i>Viola douglasii</i>	Douglas' viola	--	--	Y
Viscaceae	<i>Arceuthobium occidentale</i>	Foothill pine dwarf mistletoe	--	<i>Arceuthobium campylopodum</i>	Y
Viscaceae	<i>Phoradendron macrophyllum</i>	big leaf mistletoe	--	<i>Phoradendron serotinum</i> ssp. <i>macrophyllum</i>	Y
Viscaceae	<i>Phoradendron villosum</i>	American Christmas mistletoe	--	<i>Phoradendron serotinum</i> ssp. <i>tomentosum</i>	Y
Vitaceae	<i>Vitis californica</i>	California wild grape	--	--	Y
Zygophyllaceae	<i>Tribulus terrestris</i>	puncture vine	--	--	N

**STUDY REPORT TR-01  
SPECIAL-STATUS PLANTS**

**ATTACHMENT B**

**SPECIAL-STATUS PLANTS OCCURRENCE FIGURES**



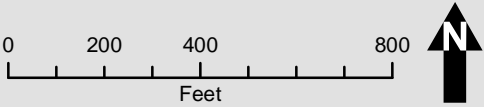


- |                  |  |   |
|------------------|--|---|
| <b>ALLTUO</b>    |  | Rawhide Hill onion<br><i>Allium tuolumnense</i>                 |
| <b>CHLGRA</b>    |  | Red Hills soaproot<br><i>Chloragalum grandiflorum</i>           |
| <b>CLABILAUS</b> |  | Small's southern clarkia<br><i>Clarkia biloba ssp australis</i> |
| <b>CRYMAR</b>    |  | Mariposa cryptantha<br><i>Cryptantha mariposae</i>              |
| <b>ERITRI</b>    |  | Tripod buckwheat<br><i>Eriogonum tripodum</i>                   |
| <b>LOMCON</b>    |  | Congdon's lomatium<br><i>Lomatium congdonii</i>                 |
| <b>LUPSPE</b>    |  | Shaggyhair lupine<br><i>Lupinus spectabilis</i>                 |
| <b>PACCLE</b>    |  | Red Hills ragwort<br><i>Packera clevelandii</i>                 |

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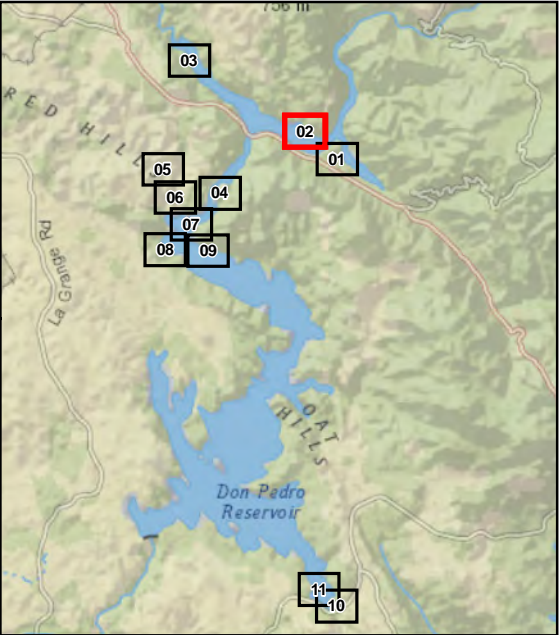


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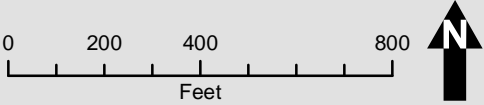




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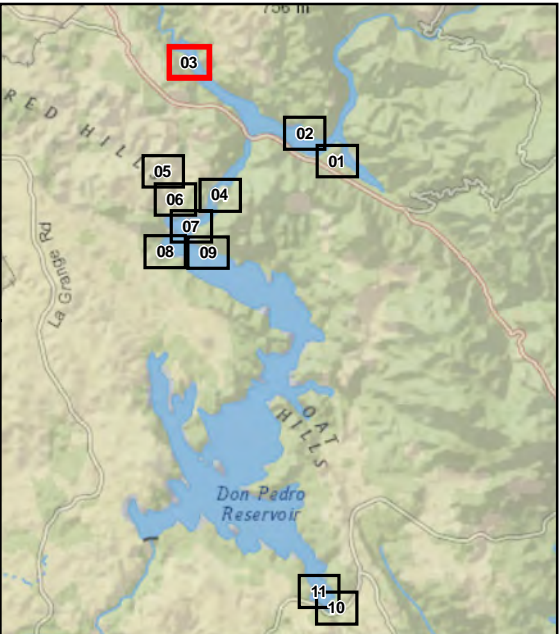


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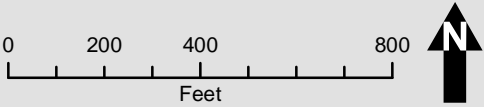


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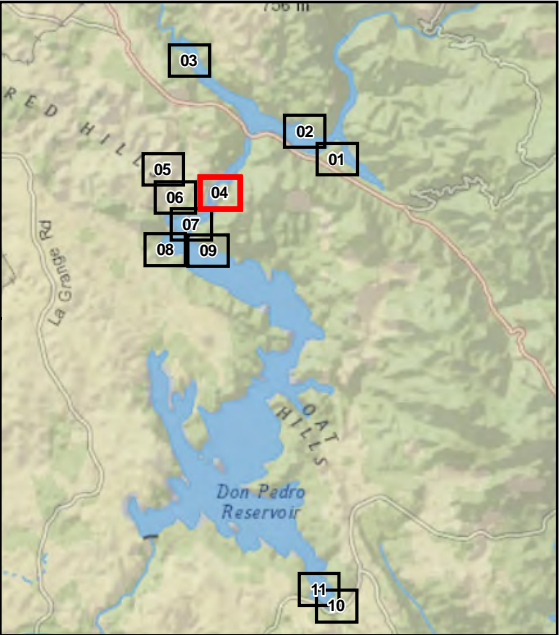
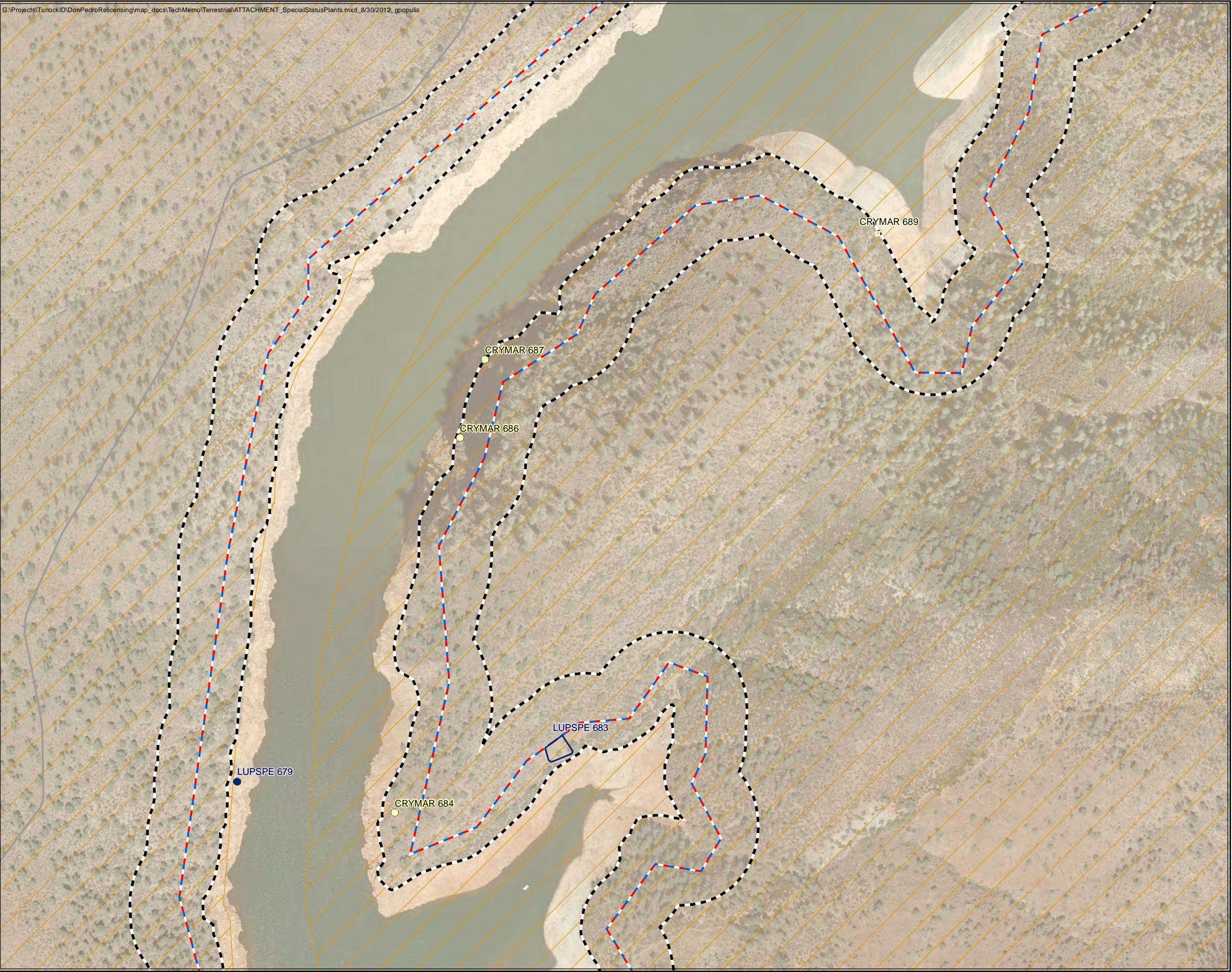


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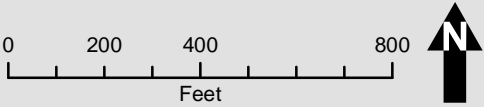




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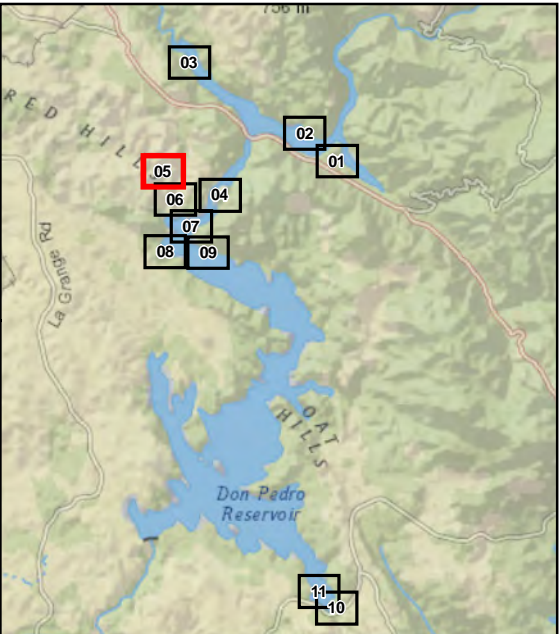
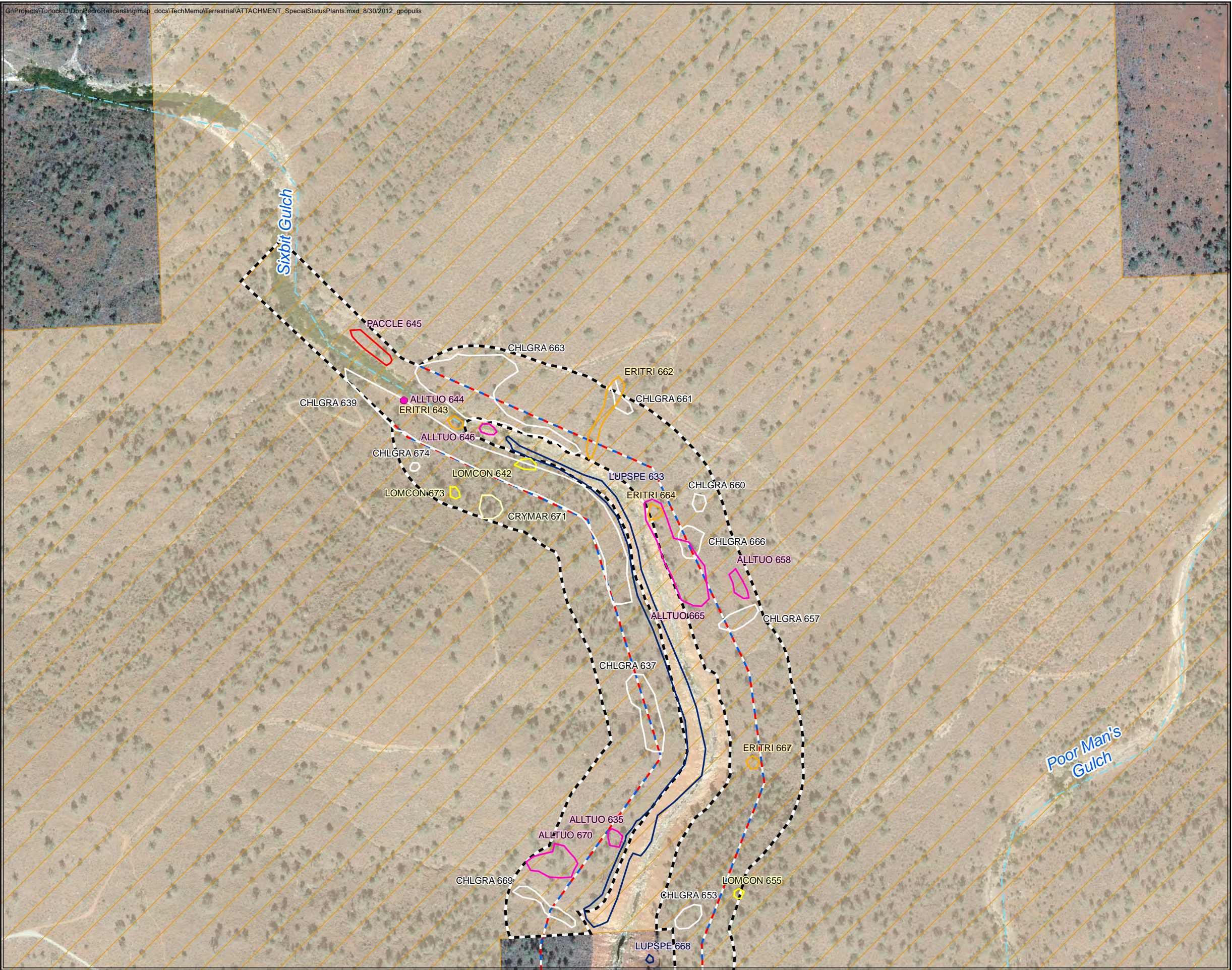
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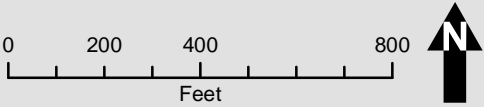




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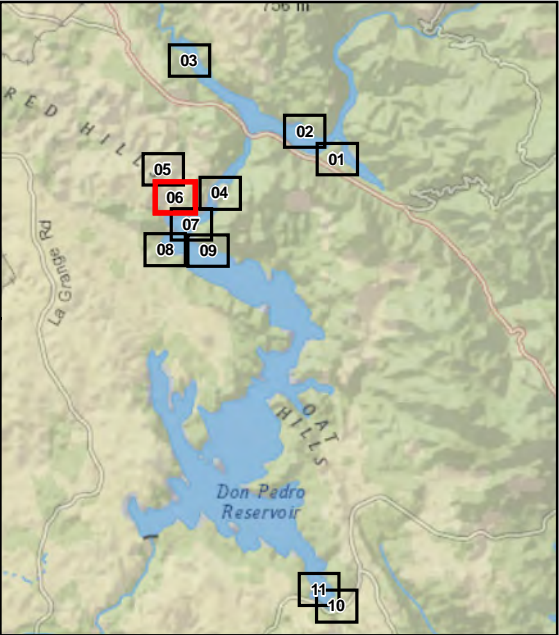
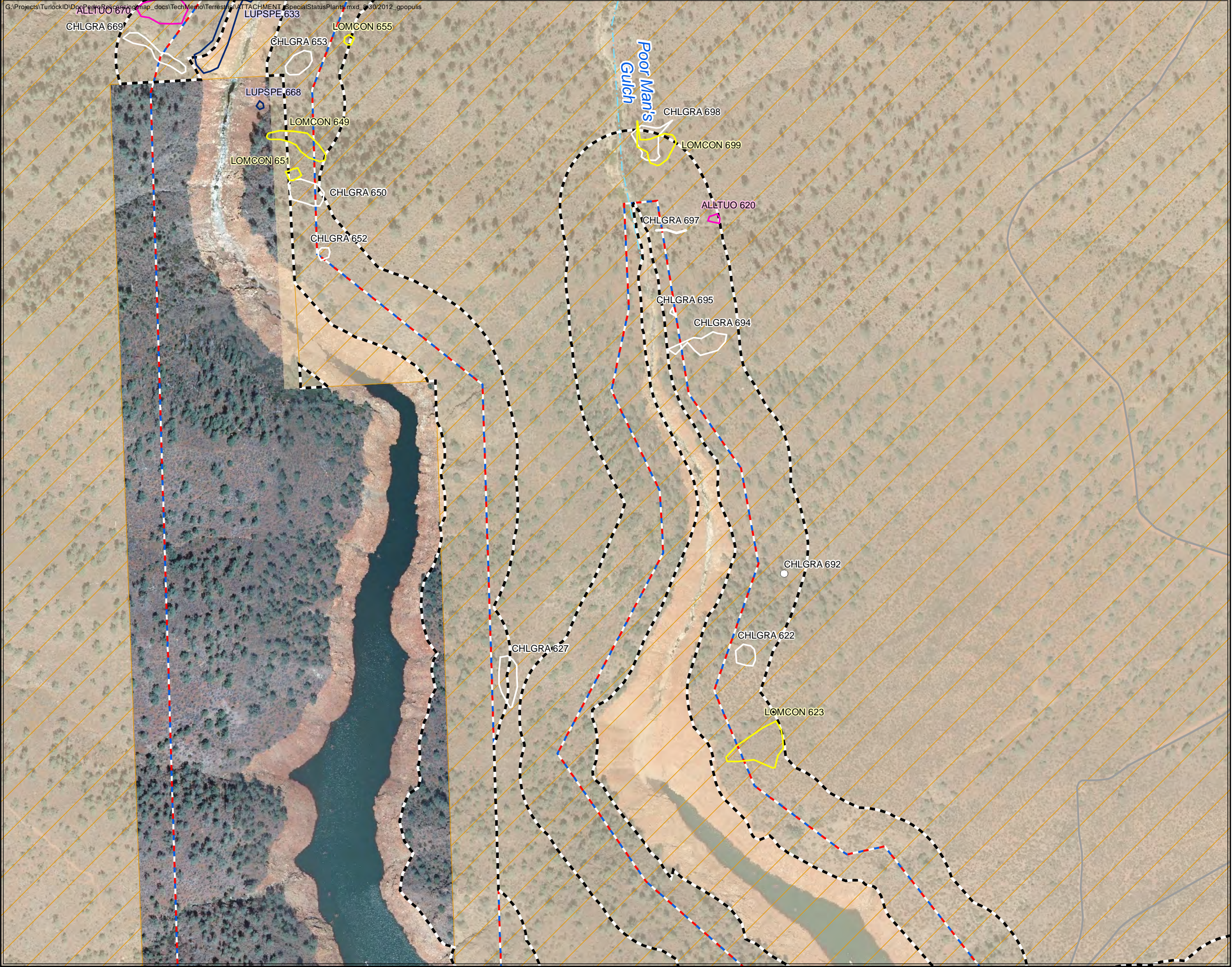
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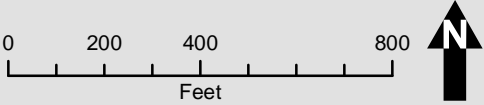


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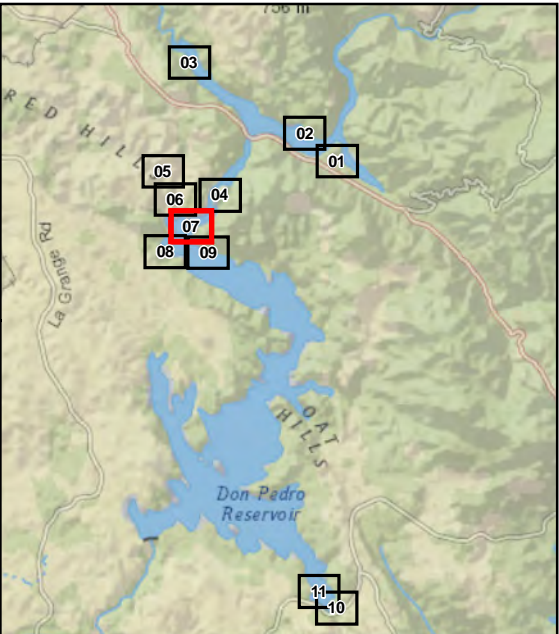
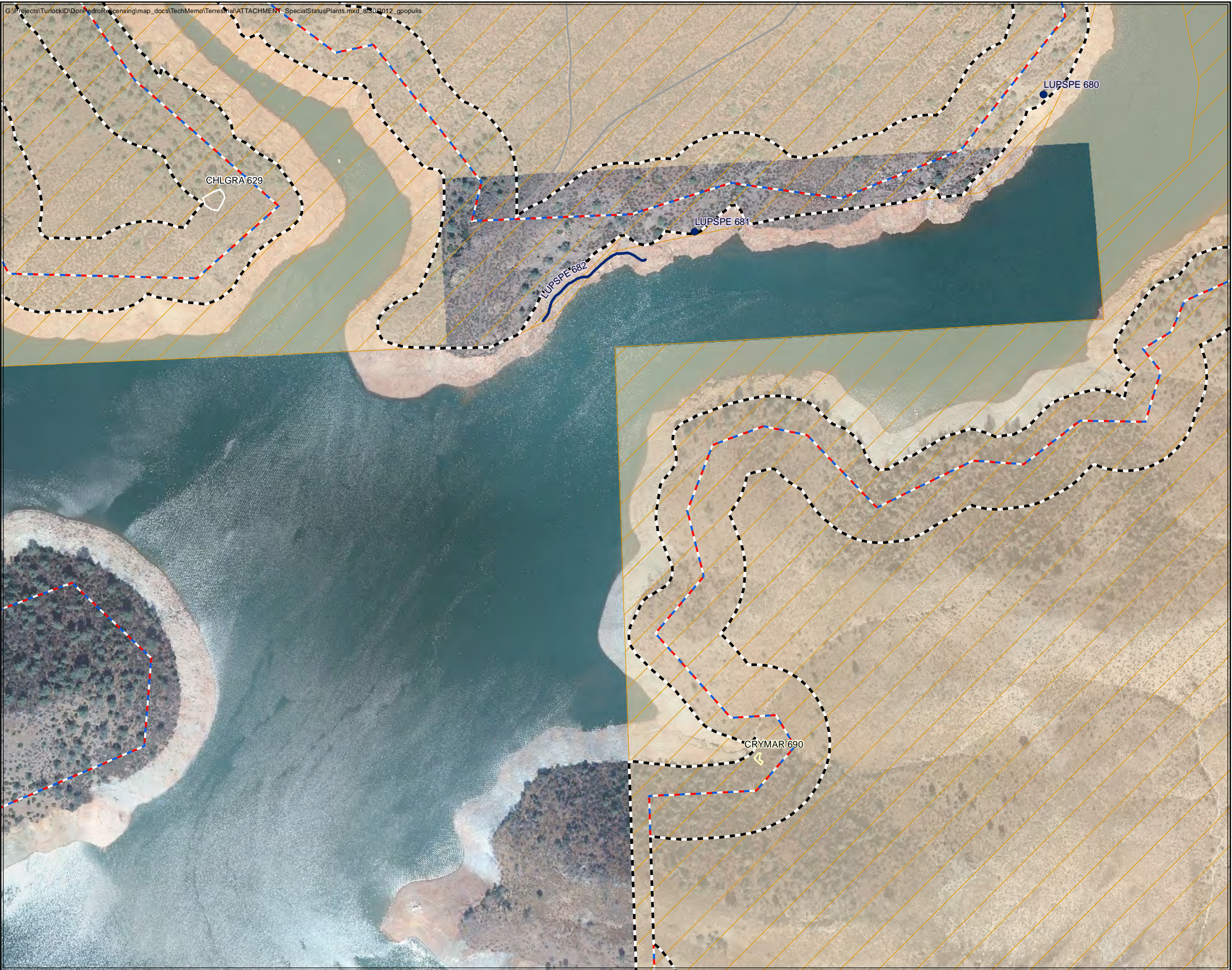


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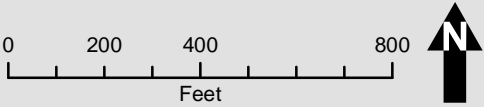


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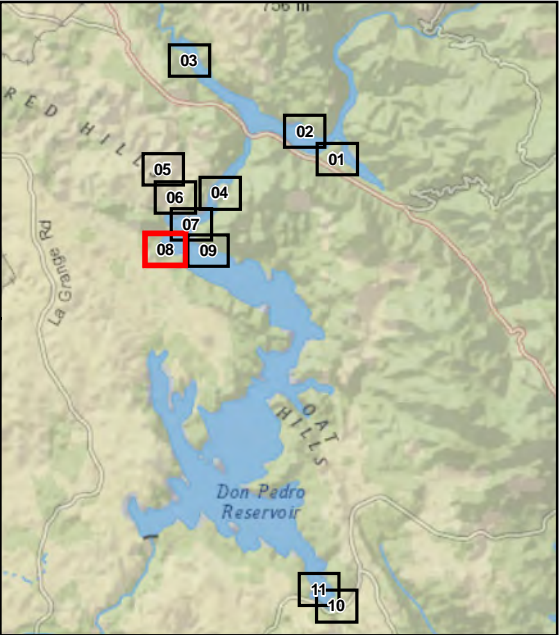
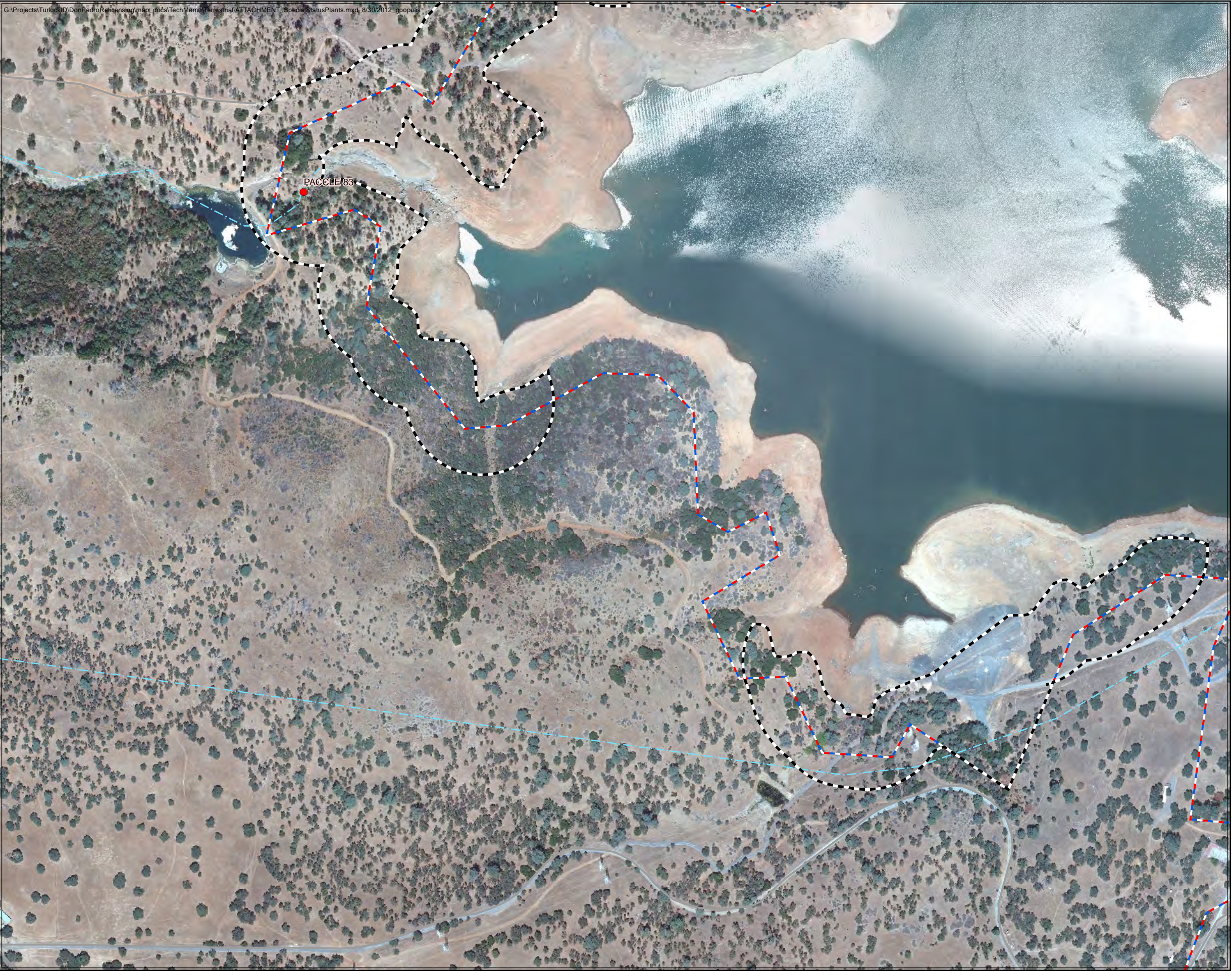


**Special-Status Plants**





Don Pedro Project (FERC No.2299)

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Data Sources: Hydrography - USGS NHD; Roads - ESRI 9.3 Data (Teleatlas); Ownership, PLSS - CA BLM; FERC Boundary, Reservoir Bathy, Recreation & Project Facilities - MID/TID. Data is CA SPCS, zone III, ft. Contour interval is 50 ft (NAVD 88).






- ALLTUO**  Rawhide Hill onion  
*Allium tuolumnense*
- CHLGRA**  Red Hills soaproot  
*Chloragalum grandiflorum*
- CLABILAUS**  Small's southern clarkia  
*Clarkia biloba ssp. australis*
- CRYMAR**  Mariposa cryptantha  
*Cryptantha mariposae*
- ERITRI**  Tripod buckwheat  
*Eriogonum tripodum*
- LOMCON**  Congdon's lomatium  
*Lomatium congdonii*
- LUPSPE**  Shaggyhair lupine  
*Lupinus spectabilis*
- PACCLE**  Red Hills ragwort  
*Packera clevelandii*

-  Botanical Study Area
-  FERC Project Boundary (No. 2299)
-  Water Body
-  BLM Area of Critical Environmental Concern 'Red Hills'

**Federal Land Ownership**

 Bureau of Land Management

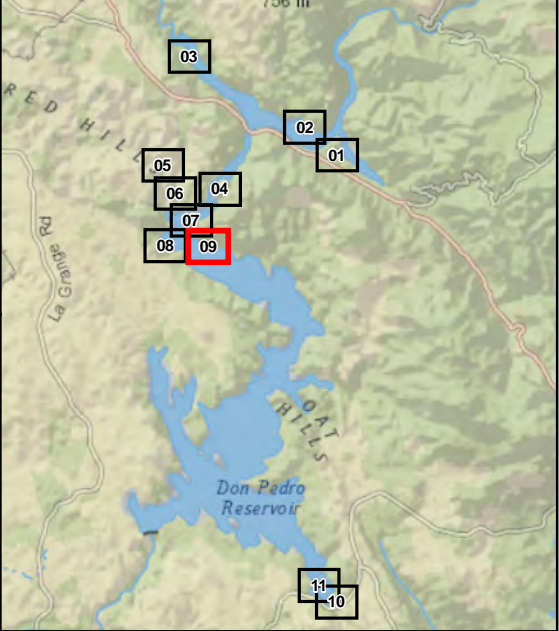


### Special-Status Plants

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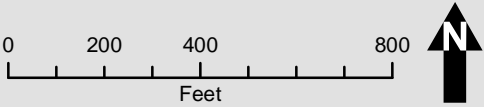


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|------------------|--|---|
| <b>ALLTUO</b>    |  | Rawhide Hill onion<br><i>Allium tuolumnense</i>                 |
| <b>CHLGRA</b>    |  | Red Hills soaproot<br><i>Chloragalum grandiflorum</i>           |
| <b>CLABILAUS</b> |  | Small's southern clarkia<br><i>Clarkia biloba ssp australis</i> |
| <b>CRYMAR</b>    |  | Mariposa cryptantha<br><i>Cryptantha mariposae</i>              |
| <b>ERITRI</b>    |  | Tripod buckwheat<br><i>Eriogonum tripodum</i>                   |
| <b>LOMCON</b>    |  | Congdon's lomatium<br><i>Lomatium congdonii</i>                 |
| <b>LUPSPE</b>    |  | Shaggyhair lupine<br><i>Lupinus spectabilis</i>                 |
| <b>PACCLE</b>    |  | Red Hills ragwort<br><i>Packera clevelandii</i>                 |

- Botanical Study Area
- FERC Project Boundary (No. 2299)
- Water Body
- BLM Area of Critical Environmental Concern 'Red Hills'

**Federal Land Ownership**

- Bureau of Land Management

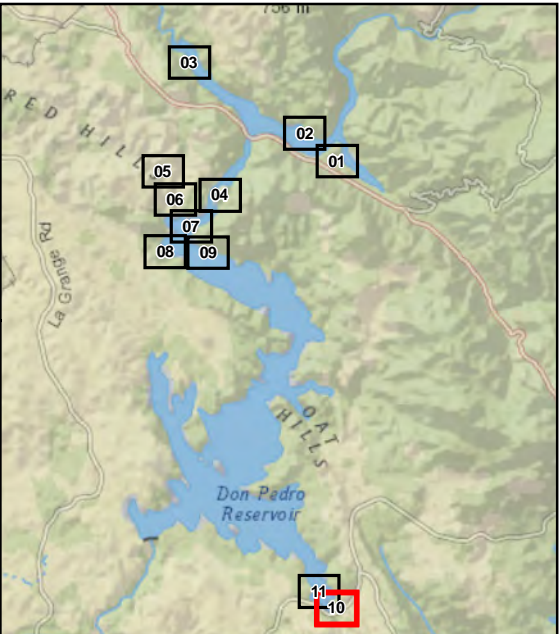
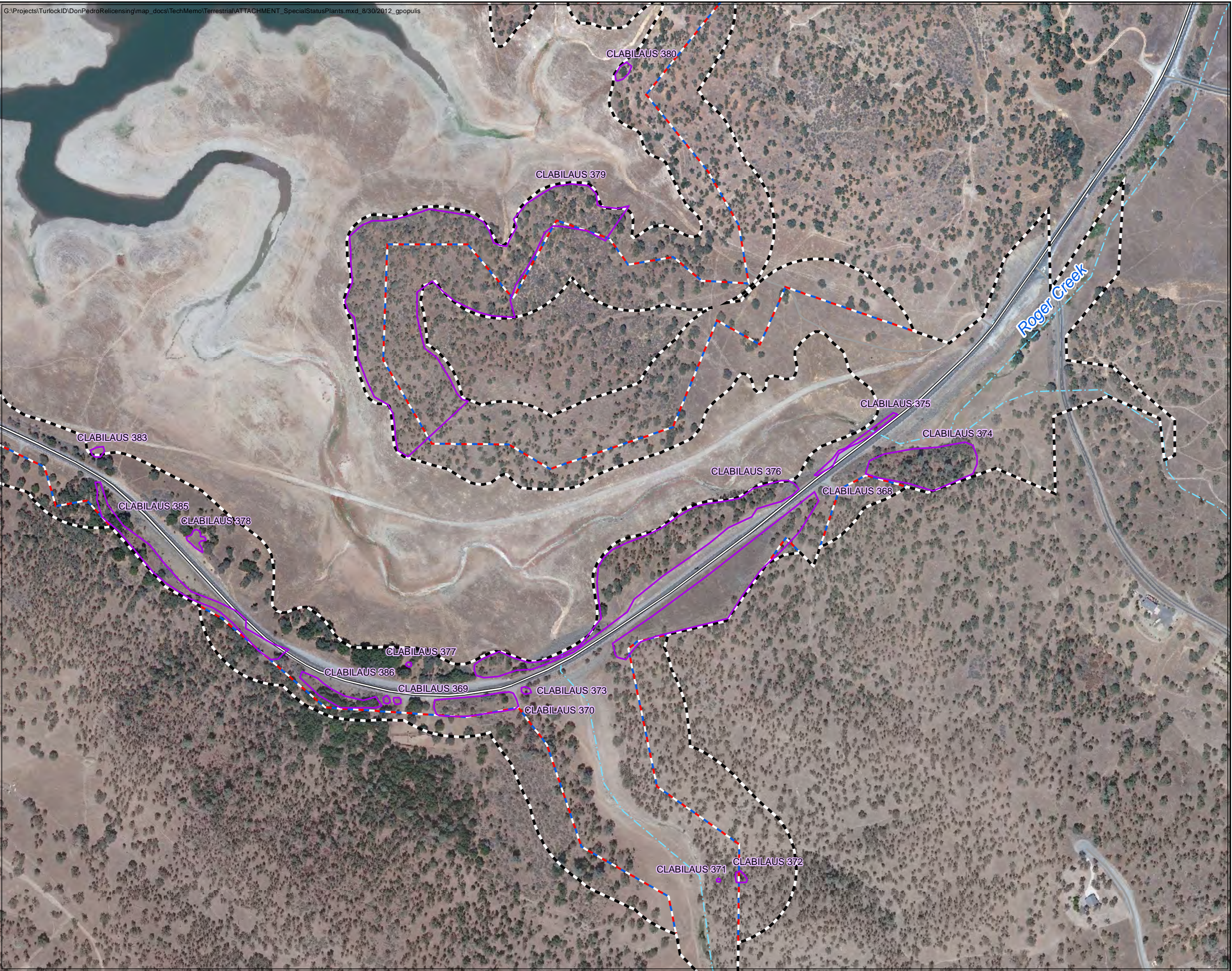


**Special-Status Plants**

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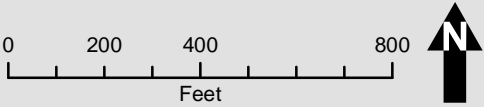




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|------------------|--|--|
| <b>ALLTUO</b>    |  | Rawhide Hill onion<br><i>Allium tuolumense</i>                   |
| <b>CHLGRA</b>    |  | Red Hills soaproot<br><i>Chloragalum grandiflorum</i>            |
| <b>CLABILAUS</b> |  | Small's southern clarkia<br><i>Clarkia biloba ssp. australis</i> |
| <b>CRYMAR</b>    |  | Mariposa cryptantha<br><i>Cryptantha mariposae</i>               |
| <b>ERITRI</b>    |  | Tripod buckwheat<br><i>Eriogonum tripodum</i>                    |
| <b>LOMCON</b>    |  | Congdon's lomatium<br><i>Lomatium congdonii</i>                  |
| <b>LUPSPE</b>    |  | Shaggyhair lupine<br><i>Lupinus spectabilis</i>                  |
| <b>PACCLE</b>    |  | Red Hills ragwort<br><i>Packera clevelandii</i>                  |

- |  |  |
|--|--|
|  | Botanical Study Area   |
|  | FERC Project Boundary (No. 2299)                             |
|  | Water Body   |
|  | BLM Area of Critical<br>Environmental Concern<br>'Red Hills' |

- Federal Land Ownership**
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|  | Bureau of Land Management |
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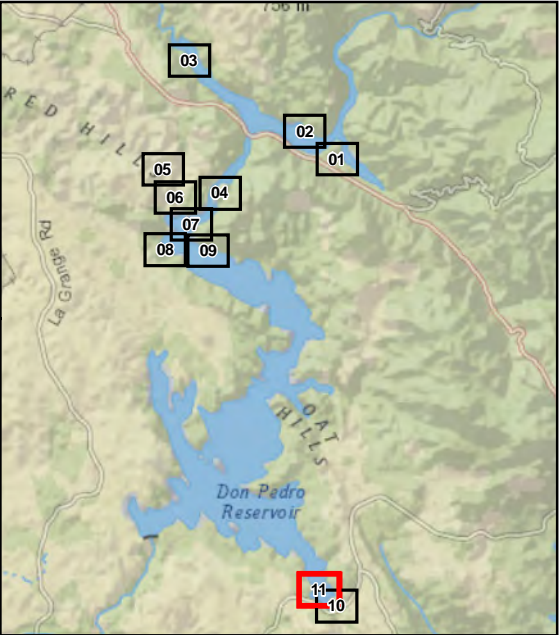





### Special-Status Plants





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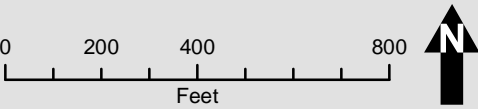


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**Special-Status Plants**

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**STUDY REPORT TR-01  
SPECIAL-STATUS PLANTS**

**ATTACHMENT C**

**SPECIAL-STATUS PLANT OCCURRENCE DATA TABLE**

**Table 1. Special-status plant occurrences located during the Special-Status Plants study.**

Occurrence Number	Site Name	Ownership	Phenology	Approximate Area (acre)	Plant Count	Existing CNDDDB record? (Y/N)	Occurrence Description
<b>Red Hills Onion</b>							
88	Moccasin Point Recreation Area	BLM	65% Vegetative, 35% Flower	0.003	50-75	No, but near 3974	Located within road-cut on Jacksonville Rd; Other plants seen at site: Mariposa clarkia ( <i>Clarkia biloba</i> ssp. <i>australis</i> ), yellow starthistle ( <i>Centaurea solstitialis</i> ), Italian thistle ( <i>Carduus pycnocephalus</i> )
620	Poor Mans Gulch	BLM	10% Vegetative, 90% Flower	0.015	25-50	No	Located in opening of woodland; Grazing evident; Other special-status plants seen at site: Layne's ragwort ( <i>Packera layneae</i> ), serpentine bluecups ( <i>Githopsis pulchella</i> ssp. <i>serpentinicola</i> ).
635	Sixbit Gulch	BLM	100% Fruit	0.012	28	No	Located within foothill pine ( <i>Pinus sabiniana</i> ) woodland; Other plants seen at site: Layne's ragwort, shaggyhair lupine ( <i>Lupinus spectabilis</i> ); Possible grazing in area.
644	Sixbit Gulch	BLM	100% Flower	0.23	10-25	Yes; 14336	Located on rocky area adjacent to creek.
646	Sixbit Gulch	BLM	100% Flower	0.007	9	Yes; 14336	Occurrence found growing out of rock cracks within riparian area.
658	Sixbit Gulch	BLM	100% Fruit	0.007	30	No, but near 14336	Found on loose, gravely serpentine soil and at rock outcrop; Other plants seen at site: Layne's ragwort, serpentine bluecups, Congdon's lomatium ( <i>Lomatium congdonii</i> ), Red Hills soaproot ( <i>Chlorogalum grandiflorum</i> ), shaggyhair lupine, tripod buckwheat ( <i>Eriogonum tripodum</i> ); Recreation occurs in area.
665	Sixbit Gulch	BLM	100% Fruit	0.036	150	Yes, the edge of occurrence; 14336	Found on lower slope on rocky outcrop within serpentine/ultramafic soil; Recreation occurs in area.
670	Sixbit Gulch	BLM	100% Fruit	0.024	50	No	Found on upper slope on serpentine/ultramafic soil; Recreation occurs in area.



Occurrence Number	Site Name	Ownership	Phenology	Approximate Area (acre)	Plant Count	Existing CNDDDB record? (Y/N)	Occurrence Description
676	Kanaka Point	BLM & TID/MID	100% Vegetative	0.0014	7	No	Found on serpentine/ultramafic soil; Other plants seen at site: serpentine bluecups, smooth distaff thistle ( <i>Carthamus creticus</i> ); Recreation occurs in area.
678	Kanaka Point	BLM & TID/MID	100% Vegetative	0.0014	200-300	No	Found on toe slope within serpentine/ultramafic soil; Other plants seen at site: serpentine bluecups, smooth distaff thistle; Livestock trail passes through occurrence; Recreation occurs in area.
<b>Red Hills Soaproot</b>							
622	Poor Mans Gulch	BLM	20% Vegetative, 80% Flower	0.015	25-50	No	Found within rocky opening/ridge top area; Other plants seen at site: serpentine bluecups, Layne's ragwort; Possible grazing in area.
627	Poor Mans Gulch	BLM	40% Vegetative 60% Flower	0.015	50-100	No	Occurrence located on rocky ridge top; Other plants seen at site: serpentine bluecups, Layne's ragwort; Possible grazing in area.
629	Poor Mans Gulch	BLM	30% Vegetative, 70% Flower	0.045	25-50	No	Occurrence found in rocky openings; Other plants seen at site: serpentine bluecups, Layne's ragwort.
637	Sixbit Gulch	BLM	60% Vegetative, 40% Flower	0.012	100-250	No	Found within rocky opening of foothill pine woodland; Other plants seen at site: Layne's ragwort, Red Hills onion ( <i>Allium tuolumnense</i> ), shaggyhair lupine, barbed goat grass ( <i>Aegilops triuncilias</i> ); Possible grazing in area.
639	Sixbit Gulch	BLM	100% Vegetative	0.022	100-250	Yes; 13325	Found on rocky outcrop under foothill pine woodland; Other plants seen at site: Layne's ragwort, Red Hills onion, shaggyhair lupine, barbed goat grass; Grazing occurs in area.
650	Sixbit Gulch	BLM	50% Vegetative, 50% Flower	0.024	8	No	Found mid-slope on rock outcrop; Other plants seen at site: Layne's ragwort, shaggyhair lupine, Congdon's lomatium, serpentine bluecups.

Occurrence Number	Site Name	Ownership	Phenology	Approximate Area (acre)	Plant Count	Existing CNDDDB record? (Y/N)	Occurrence Description
652	Sixbit Gulch	BLM	60% Vegetative, 40% Flower	0.024	10	No	Located on rock outcrop within serpentine/ultramafic soils; Other plants seen at site: Layne's ragwort, shaggyhair lupine, Congdon's lomatium, serpentine bluecups.
653	Sixbit Gulch	BLM	80% Vegetative, 20% Flower	0.012	15	No	Found on upper slope rocky outcrop within serpentine/ultramafic soil; Other plants seen at site: Layne's ragwort, shaggyhair lupine, Congdon's lomatium, serpentine bluecups, tripod buckwheat, Red Hills onion; Recreation occurs in area.
657	Sixbit Gulch	BLM	70% Vegetative, 30% Flower	0.019	150	No	Found on upper slope within serpentine/ultramafic soil, Other plants seen at site: Layne's ragwort, shaggyhair lupine, Congdon's lomatium, serpentine bluecups, tripod buckwheat, Red Hills onion; Recreation occurs in area.
660	Sixbit Gulch	BLM	100% Flower	0.0072	5	No	Found on rocks lining drainage; Other plants seen at site: Layne's ragwort, shaggyhair lupine, Congdon's lomatium, tripod buckwheat, Red Hills onion; Water based recreation occurs in area.
661	Sixbit Gulch	BLM	30% Vegetative, 70% Flower	0.029	75	No	Found on upper slope within serpentine/ultramafic soil, Other plants seen at site: Layne's ragwort, shaggyhair lupine, Congdon's lomatium, serpentine bluecups, tripod buckwheat, Red Hills onion; Water based recreation occurs in area.
663	Sixbit Gulch	BLM	50% Vegetative, 50% Flower	0.014	300	Yes; 13325	Found mid-slope to lower slope on loose serpentine/ultramafic soil; Other plants seen at site: Layne's ragwort, shaggyhair lupine, Congdon's lomatium, serpentine bluecups, tripod buckwheat; Water based recreation occurs in area.

Occurrence Number	Site Name	Ownership	Phenology	Approximate Area (acre)	Plant Count	Existing CNDDDB record? (Y/N)	Occurrence Description
666	Sixbit Gulch	BLM	100% Vegetative	0.014	50	No	Found on lower slope within serpentine/ultramafic soil; Other plants seen at site: Layne's ragwort, shaggyhair lupine, Congdon's lomatium, serpentine bluecups, tripod buckwheat, Red Hills onion; Water based recreation occurs in area.
669	Sixbit Gulch	BLM	75% Vegetative, 25% Flower	0.012	120	No	Found on upper slope within serpentine/ultramafic soil, Other plants seen at site: Layne's ragwort, Congdon's lomatium, serpentine bluecups, Red Hills onion, Mariposa cryptantha ( <i>Cryptantha mariposae</i> ); Recreation occurs in area.
674	Sixbit Gulch	BLM	80% Vegetative, 20% Flower	0.007	10	No but near 13325	Found within opening on serpentine/ultramafic/clay/bedrock; Other plants seen at site: Layne's ragwort, Congdon's lomatium, serpentine bluecups, Red Hills onion, Mariposa cryptantha; Recreation occurs in area.
692	Poor Mans Gulch	BLM	25% Flower, 75% Fruit	0.0003	5	No	Located on rocky outcrop; Other plants seen at site: Layne's ragwort.
694	Poor Mans Gulch	BLM	2% Vegetative, 38% Flower, 60% Fruit	0.015	58	No	Within approx. 25 yards of creek; Recreation may occur above creek.
695	Poor Mans Gulch	BLM	95% Vegetative, 5% Flower	0.015	11	No	Located on rocky outcrop on slope; Other plants seen at site: foothill Jepsonia ( <i>Jepsonia heterandra</i> ), Bermudagrass ( <i>Cynodon dactylon</i> ); Recreation may occur along creek.
697	Poor Man's Creek	BLM	90% Vegetative, 10% Flower	0.045	26	No	Located on rocky outcrop of slope; Other plants seen at site: Bermudagrass; Recreation may occur along creek; Evidence of grazing – scattered hoof prints through occurrence and nearby.

Occurrence Number	Site Name	Ownership	Phenology	Approximate Area (acre)	Plant Count	Existing CNDDDB record? (Y/N)	Occurrence Description
698	Poor Man's Creek	BLM	95% Vegetative, 5% Flower	0.030	92	No	Located on rocky outcrop of slope; Other plants seen at site; Congdon's lomatium, Bermudagrass; Recreation may occur along creek.
<b>Mariposa Clarkia</b>							
83	Moccasin Point Recreation Area	TID/MID	100% Vegetative	0.003	18	No	Found within blue oaks/annual grassland in Moccasin campground approx. 60ft from paved roadway, approx. 40ft from foot-trail; Other plants seen at site: Italian thistle.
84	Moccasin Point Recreation Area	TID/MID	100% Vegetation	0.006	>100	No	Found within blue oak ( <i>Quercus douglasii</i> )/Foothill pine savannah; Other plants seen at site: Italian thistle; Foot-trail and burn-pile approx. 20ft away.
89	Moccasin Point Recreation Area	BLM	65% Vegetative, 35% Flower	0.003	28	No	Located on slope behind roadcut of Jacksonville Rd; Other plants seen at site: Italian thistle, yellow starthistle, Red Hills onion.
92	Moccasin Transmission Line Area	BLM	100% Flower	0.006	±200	No	Located below access road for T-line extending approx 250ft from road to HWM; Other plants seen at site: Italian thistle; Transmission line and road maintenance may disturb occurrence.
368	Rogers Creek Arm	TID/MID	80% Vegetative, 20% Flower	0.0012	500	No	Found within introduced annual grassland along highway roadcut; Other plants seen at site: Medusahead grass ( <i>Elymus caput-medusae</i> ); Grazing in area; Recreation occurs in area.
369	Rogers Creek Arm	TID/MID	30% Vegetative, 70% Flower	0.0014	60	No	Located within highway and power line right-of-way; Other plants seen at site: Italian thistle; Road edge fire abatement may disturb occurrence.
370	Rogers Creek Arm	TID/MID & Private	50% Vegetative, 50% Flower	0.0007	2000	No	Located within highway right-of-way; Other plants seen at site: Italian thistle; Road edge fire abatement may disturb occurrence; Grazing in adjacent area.

Occurrence Number	Site Name	Ownership	Phenology	Approximate Area (acre)	Plant Count	Existing CNDDDB record? (Y/N)	Occurrence Description
371	Rogers Creek Arm	TID/MID	100% Vegetative	0.002	10	No	Located within blue oak woodland/introduced annual grasslands; ; Other plants seen at site: Italian thistle; Grazing in area.
372	Rogers Creek Arm	TID/MID & Private	100% Vegetative	0.002	30	No	Located within blue oak woodland/introduced annual grasslands; Other plants seen at site: Italian thistle; Grazing in area.
373	Rogers Creek Arm	TID/MID	100% Flower	0.007	30	No	Found on highly disturbed, rocky road-fill pile; Other plants seen at site: Italian thistle.
374	Rogers Creek Arm	TID/MID	99% Vegetative, 1% Flower	0.0007	±1000	No	Located within blue oak woodland/introduced annual grasslands; ; Other plants seen at site: Italian thistle; Grazing in area; Recreation occurs in area.
375	Rogers Creek Arm	TID/MID	20% Vegetative, 80% flower	0.0007	200	No	Located within highway right-of-way; Other plants seen at site: Italian thistle; Slope failure may disturb occurrence; Herbicide spray may disturb occurrence.
376	Rogers Creek Arm	TID/MID	50% Vegetative, 50% Flower	0.005	5000	No	Located within highway right-of-way; Other plants seen at site: Italian thistle; Grazing in area; Recreation occurs in area.
377	Rogers Creek Arm	TID/MID	100% Vegetative	0.0007	50	No	Found on slope adjacent to roadway; Other plants seen at site: Italian thistle; Grazing in area; Recreation and dumping occurs in area.
378	Rogers Creek Arm	TID/MID	50% Vegetative, 50% Flower	0.0007	3000	No	Found on slope adjacent to roadway; Other plants seen at site: Italian thistle, Klamathweed ( <i>Hypericum perforatum</i> ), Medusahead grass; Grazing in area; Recreation occurs in area; fire abatement and road maintenance may disturb occurrence.
379	Rogers Creek Arm	TID/MID & Private	30% Vegetative, 70% Flower	0.010	>20000	No	Found on island slope; Other plants seen at site: Italian thistle; Grazing in area; Recreation occurs in area.

Occurrence Number	Site Name	Ownership	Phenology	Approximate Area (acre)	Plant Count	Existing CNDDDB record? (Y/N)	Occurrence Description
380	Rogers Creek Arm	TID/MID	20% Vegetative, 80% Flower	0.004	50	No	Occurrence found on both sides of fence line in annual grassland; Other plants seen at site: Italian thistle; Grazing in area; Recreation occurs in area.
381	Rogers Creek Arm	TID/MID	40% Vegetative, 60% Flower	0.010	50	No	Located within blue oak woodland/annual grasslands; Other plants seen at site: Italian thistle; Grazing in area; Recreation occurs in area.
382	Rogers Creek Arm	TID/MID	95% Vegetative, 5% Flower	0.003	20	No	Located within blue oak woodland/annual grasslands; Other plants seen at site: Italian thistle; Grazing in area; Recreation occurs in area.
383	Rogers Creek Arm	TID/MID	30% Vegetative, 70% Flower	0.0007	100	No	Found at base of roadfill pile; Other plants seen at site: Italian thistle; Grazing in area; Recreation occurs in area.
384	Rogers Creek Arm	TID/MID	100% Flower	0.0001	3	No	Located within blue oak woodland/annual grasslands; Other plants seen at site: Italian thistle; Grazing in area; Recreation occurs in area.
385	Rogers Creek Arm	TID/MID	20% Vegetative, 80% Flower	0.0008	3000	No	Occurs along road and above roadcut for highway and power line right-of-way; Other plants seen at site: Italian thistle, Klamathweed; Power line and road maintenance may disturb occurrence.
386	Rogers Creek Arm	TID/MID	30% Vegetative, 60% Flower	0.002	500	No	Found along roadway; Other plants seen at site: Michael's rein orchid; Power line and road maintenance may disturb occurrence.
391	Shawmut Road	TID/MID	75% Flower, 25% Fruit	0.0043	1000	No	Found on cut-slope in rocky substrate and on talus slopes below HWM; Abandoned roadway near occurrence.
392	Shawmut Road	TID/MID	50% Flower, 50% Fruit	0.0006	100	No	Found in small openings below road, extending approx. 80ft along roadway; unable to survey entire reach of occurrence; Other plants seen at site: Tree-of-Heaven; Dumping observed in area.

Occurrence Number	Site Name	Ownership	Phenology	Approximate Area (acre)	Plant Count	Existing CNDDDB record? (Y/N)	Occurrence Description
<b>Mariposa Cryptantha</b>							
71	Kanaka Point	BLM	40% Vegetative, 40% Flower, 20% Fruit	0.007	80	No	Found on rocky, serpentine soil.
72	Kanaka Point	BLM & TID/MID	100% Vegetative	0.22	50-100	No	Found on rocky knoll adjacent to parking area; Other plants seen at site: serpentine bluecups; Recreation may disturb occurrence.
73	Kanaka Point	BLM	10% Vegetative, 90% Flower	0.76	100-200	No	Patchy throughout rocky area; Other plants seen at site: Italian thistle; Recreation will disturb occurrence – foot path through occurrence.
86	Moccasin Point Recreation Area	BLM	15% Vegetative, 30% Flower, 55% Fruit	0.06	1000	No	Throughout rocky, disturbed area behind marina storage units; Other plants seen at site: serpentine bluecups, Yellow starthistle; Maintenance in area will disturb occurrence.
671	Sixbit Gulch	BLM	50% Flower, 50% Fruit	0.17	100	No	Found on rocky, serpentine/ultramafic soils; Other plants seen at site: serpentine bluecups, Layne's ragwort, Congdon's lomatium, Red Hills soaproot, Red Hills onion; Recreation will disturb occurrence.
684	Railroad Canyon	BLM	10% flower, 90% Fruit	0.009	500	No	Located on rock shelf starting at HWM extending upslope.
686	Railroad Canyon	BLM	10% Flower, 90% Fruit	±0.008	200	No	Located on rock shelf just above HWM – may extend upslope. Unable to access entire occurrence; Other plants seen at site: foothill Jepsonia.
687	Railroad Canyon	BLM	100% Flower	0.0023	50	No	Located on rock shelf just above HWM – may extend upslope and into surrounding areas. Unable to access entire occurrence.
689	Railroad Canyon	BLM	20% Flower, 80% Fruit	0.005	50	No	Located just above HWM – may extend upslope and into surrounding areas. Unable to access entire occurrence; Natural slumping will disturb occurrence.

Occurrence Number	Site Name	Ownership	Phenology	Approximate Area (acre)	Plant Count	Existing CNDDDB record? (Y/N)	Occurrence Description
690	Railroad Canyon	BLM	20% Flower, 80% Fruit	0.017	50	No	Located just above HWM and extends upslope.
<b>Tripod Buckwheat</b>							
643	Sixbit Gulch	BLM	100% Flower	0.014	50-100	No	Located within rocky area just above HWM; Other plants seen at site: Barbed goatgrass.
662	Sixbit Gulch	BLM	100% Flower	0.029	20	No	Found along dry creek bed; Other plants seen at site: Layne's ragwort, shaggyhair lupine, Congdon's lomatium, serpentine bluecups, Red Hills Soaproot, Red Hills onion; water based recreation occurs in area.
664	Sixbit Gulch	BLM	100% Flower	0.014	>150	No	Found along dry creek bed; Other plants seen at site: Layne's ragwort, shaggyhair lupine, Congdon's lomatium, serpentine bluecups, Red Hills Soaproot, Red Hills onion; water based recreation occurs in area.
667	Sixbit Gulch	BLM	100% Flower	0.012	7	No	Found along dry creek bed; Other plants seen at site: Layne's ragwort, shaggyhair lupine, Congdon's lomatium, serpentine bluecups, Red Hills Soaproot, Red Hills onion; water based recreation occurs in area.
<b>Congdon's Lomatium</b>							
623	Poor Mans Gulch	BLM	29% Vegetative, 1% Flower, 70% Fruit	0.015	100-200	No	Found on rocky, steep serpentine slope; Other plants seen at site: Layne's ragwort, serpentine bluecups, Red Hills soaproot; Grazing occurs in area.
642	Sixbit Gulch	BLM	30% Vegetative, 10% Flower, 50% Fruit	0.014	60	No, but near 13982	Located just above HWM extending upslope; Other plants seen at site: Red Hills soaproot, shaggyhair lupine, Layne's ragwort, Bermudagrass.



Occurrence Number	Site Name	Ownership	Phenology	Approximate Area (acre)	Plant Count	Existing CNDDDB record? (Y/N)	Occurrence Description
649	Sixbit Gulch	BLM & TID/MID	10% Flower, 90% Fruit	0.014	75-100	No	Located mid-slope on serpentine/ultramafic soils; Other plants seen at site: Red Hills soaproot, shaggyhair lupine, Layne's ragwort, serpentine bluecups.
651	Sixbit Gulch	BLM	100% Fruit	0.04	5	No	Located mid-slope on serpentine/ultramafic soils; Other plants seen at site: Red Hills soaproot, shaggyhair lupine, Layne's ragwort, serpentine bluecups.
655	Sixbit Gulch	BLM	40% Vegetative, 60% Fruit	0.04	20	No	Located on upper slope on serpentine/ultramafic soils; Other plants seen at site: Red Hills soaproot, shaggyhair lupine, Layne's ragwort, serpentine bluecups, Red Hills onion, tripod buckwheat.
673	Sixbit Gulch	BLM	100% Fruit	0.0072	15	No, but near 13982	Found on serpentine rock outcrop; Other plants seen at site: Red Hills soaproot, Red Hills onion, Layne's ragwort, serpentine bluecups, Mariposa cryptantha.
699	Poor Mans Gulch	BLM	70% Vegetative, 30% Fruit	0.03	25	No	Found on serpentine/ultramafic soils; Other plants seen at site: Red Hills soaproot; Recreation/hiking may disturb occurrence; Grazing occurs in area.
<b>Shaggyhair Lupine</b>							
633	Sixbit Gulch	BLM & TID/MID	5% Vegetative, 5% Flower, 90% Fruit	0.040	1000-2000	No	Found alone serpentine shoreline below HWM extending upslope; Other plants seen at site; Red Hills soaproot, Congdon's lomatium, Red Hills onion, barbed goatgrass, Bermudagrass..
668	Sixbit Gulch	TID/MID	100% Fruit	0.0044	1	No	Located below HWM on ultramafic bedrock; Other plants seen at site; Red Hills soaproot, Congdon's lomatium, Layne's ragwort, tripod buckwheat, serpentine bluecups. Recreation may disturb occurrence.
679	Railroad Canyon	BLM	100% Fruit	0.05	75-100	No	Found immediately above cutbank from high water waves; Other plants seen nearby: Bermudagrass.

Occurrence Number	Site Name	Ownership	Phenology	Approximate Area (acre)	Plant Count	Existing CNDDDB record? (Y/N)	Occurrence Description
680	Railroad Canyon	BLM	100% Fruit	0.022	50	No	Located on very steep rock outcrop just above HWM.
681	Railroad Canyon	TID/MID	100% Fruit	0.014	35	No	Located on very steep rock outcrop just above HWM; Recreation (boating) may disturb occurrence.
682	Railroad Canyon	TID/MID	Not recorded	±0.073	100-300	No	Observed occurrence from boat; very steep location – unable to access.
683	Railroad Canyon	BLM	100% Fruit	0.014	100	No	Found on rock outcrop above HWM extending upslope.
<b>Red Hills Ragwort</b>							
83	Recreation Bay	TID/MID	50% Vegetative, 50% Flower	0.009	18	No	Found within riparian corridor in foothill woodland as well as observed in adjacent private lands with grazing; Other plants seen nearby; Italian thistle; Recreation may disturb occurrence; Grazing occurs on adjacent lands – evidence of recent cow activity in immediate area of occurrence.
645	Sixbit Gulch	BLM	20% Vegetative, 80% Flower	0.0072	100-250	Yes; 3859	Found along edge of riparian corridor; Other plants seen at site: Layne's ragwort, Red Hills soaproot, shaggyhair lupine, barbed goatgrass, Bermudagrass.

**STUDY REPORT TR-01  
SPECIAL-STATUS PLANTS**

**ATTACHMENT D**

**REPRESENTATIVE SPECIAL-STATUS PLANT PHOTOS**

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**Figure 1.** Rawhide Hill onion (*Allium tuolumnense*) plant at occurrence 635 on BLM land within Sixbit Gulch.



**Figure 2.** Rawhide Hill onion habitat and plant at occurrence 644 on BLM lands in Sixbit Gulch.





**Figure 3.** Red Hills soaproot (*Chlorogalum grandiflorum*) plant at occurrence 669 on BLM lands in Sixbit Gulch.



**Figure 4.** Red Hills soaproot habitat at occurrence 629 on BLM lands in Poor Man's Gulch.





**Figure 5.** Mariposa clarkia (*Clarkia biloba* ssp. *australis*) plant at occurrence 368 on MID/TID lands on Rogers Creek Arm.



**Figure 6.** Mariposa clarkia habitat at occurrence 383 on MID/TID lands within Rogers Creek Arm.





**Figure 7.** Mariposa cryptantha (*Cryptantha mariposae*) plant at occurrence 684 on BLM lands within Railroad Canyon.



**Figure 8.** Mariposa cryptantha habitat at occurrence 684 on BLM lands within Railroad Canyon.





**Figure 9.** Tripod buckwheat (*Eriogonum tripodium*) plant at occurrence 662 on BLM lands within Sixbit Gulch.



**Figure 10.** Tripod buckwheat habitat and plants at occurrence 667 on BLM lands within Sixbit Gulch.





**Figure 11.** Congdon's lomatium (*Lomatium congdonii*) plant at occurrence 642 on BLM lands within Poor Man's Gulch.



**Figure 12.** Congdon's lomatium habitat at occurrence 651 on BLM lands within Sixbit Gulch.





**Figure 13.** Shaggyhair lupine (*Lupinus spectabilis*) plant at occurrence 633 on BLM lands within Poor Man's Gulch.



**Figure 14.** Shaggyhair lupine habitat at occurrence 633 on BLM lands within Poor Man's Gulch.





**Figure 15.** Red Hills ragwort (*Packera clevelandii*) plant at occurrence 645 on BLM lands within Sixbit Gulch.



**Figure 16.** Red Hills ragwort habitat at occurrence 645 on BLM lands within Sixbit Gulch.