



Amended Application for a New License **Major Project – Existing Dam**

Integrated Vegetation Management Plan

Security Level: Public

Yuba River Development Project
FERC Project No. 2246

October 2019

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Table of Contents

Section No.	Description	Page No.
	Glossary – Definition of Terms, Acronyms and Abbreviations	GLO-1
1.0	Introduction	1-1
1.1	Background	1-1
1.1.1	Yuba River Development Project	1-1
1.2	Purpose of the Integrated Vegetation Management Plan.....	1-5
1.3	Goals and Objectives of the Integrated Vegetation Management Plan	1-5
1.4	Contents of the Integrated Vegetation Management Plan	1-5
2.0	Non-Native Invasive Plants Management	2-1
2.1	Preventing the Introduction and Spread of NNIP	2-4
2.2	Monitoring of Known and Surveying for New NNIP	2-4
2.2.1	Surveying	2-4
2.2.2	Monitoring Following Treatment	2-4
2.3	Implementing Treatment Measures	2-5
2.3.1	Treatment Measures.....	2-5
2.3.2	Existing NNIP Populations.....	2-6
2.3.3	NNIP Treatment Strategy	2-19
3.0	Routine Vegetation Management Related To YCWA’s Operations and Maintenance.....	3-1
3.1	Facility Management	3-2
3.2	Hazard Tree Management.....	3-2
3.3	Fuels Management.....	3-6
3.3.1	Fuel Breaks Around Campgrounds and Day Use Areas on NFS Land	3-6
3.4	Transportation System Maintenance.....	3-6
3.5	Recreation Site Management on NFS Land.....	3-7
4.0	Revegetation	4-1
4.1	Areas Subject to Revegetation	4-3
4.2	Evaluating Sites for Revegetation.....	4-3
4.3	Revegetation Planning	4-4
4.4	Revegetation Methods	4-5
4.5	Revegetation Monitoring	4-6
5.0	Sensitive Area Protections	5-1
5.1	Special-Status Plants.....	5-2
5.2	Riparian, Wetlands, and Littoral Zones	5-4
5.3	Culturally Significant Plants	5-4
5.4	Historic Properties	5-4

5.5	Special-Status Wildlife Species	5-5
6.0	Pesticide Use	6-1
6.1	Pesticide Use on Non-NFS Lands.....	6-2
7.0	Annual Employee Training.....	7-1
8.0	Reporting, Consultation and Plan Revisions	8-1
8.1	Consultation and Permitting	8-1
8.2	Reporting.....	8-2
8.2.1	Years in which Pesticides Are Used	8-2
8.2.2	Years in which NNIP and/or Special-status Plants Surveys and/or Monitoring Occurs	8-2
8.2.3	Years in which Target NNIP are Treated	8-3
8.2.4	Years in which Vegetation Activities Occur	8-3
8.2.5	Years in which Revegetation Monitoring Occurs.....	8-3
8.2.6	Years in which Routine O&M/Emergency/Planned Activities Impact Sensitive Areas	8-3
8.3	Plan Revisions.....	8-4
9.0	References Cited	9-1

List of Figures		
Figure No.	Description	Page No.
1.1-1.	Yuba County Water Agency's Yuba River Development Project and Project Vicinity.	1-3
2.3-1.	NNIP management flowchart of events.	2-21
3.2-1.	Hazard tree management flowchart of events.....	3-5
4.0-1.	Revegetation flowchart of events.....	4-2

List of Tables		
Table No.	Description	Page No.
2.0-1.	Some NNIP with the potential to occur on the Yuba River Development Project.	2-2
2.3-1.	NNIP occurrences identified on federal and non-federal land in the Yuba River Development Project.....	2-7
6.1-1.	Location, types and amounts of herbicides applied to non-federal land by Yuba County Water Agency for the Yuba River Development Project in 2012.....	6-2

List of Attachments

Attachment A	Special-Status Plant and Target Non-Native Invasive Plant Survey Area: Figures 1 through 11
Attachment B	Target Non-Native Invasive Plant Occurrences: Figures 1 through 9
Attachment C	Forest Service Soil Cover Standards
Attachment D	Special-Status Plants Collocated with Non-Native Invasive Plants: Figures 1 through 8
Attachment E	Pesticide Use Proposal (FS 2100-2)
Attachment F	Agency Concurrence

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GLOSSARY – DEFINITION OF TERMS, ACRONYMS AND ABBREVIATIONS

ac	acre
BMP	Best Management Practices
Cal Fish and Wildlife	California Department of Fish and Wildlife
CDFA	California Department of Food and Agriculture
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
certified weed-free materials	Hay, feed, straw, or straw mulch that has been inspected and certified by the State of California to not contain propagative plant parts or seeds of noxious weeds.
control	With respect to invasive species (plant, pathogen, vertebrate, or invertebrate species), control is defined as any activity or action taken to reduce the population, contain, limit the spread, or reduce the effects of an invasive species. Control activities are generally directed at established free-living infestations, and may not necessarily be intended to eradicate the targeted infestation in all cases.
CRLF	California red-legged frog (<i>Rana draytonii</i>)
CRS	Cultural Resource Specialist
early detection	The process of finding, identifying, and quantifying invasive species (in this context, a NNIP) infestations prior to, or in the initial stages of, its establishment as a free-living and expanding population. Early detection of an invasive species is typically coupled with integrated activities to rapidly assess and respond with quick action to eradicate, control, or contain it.
eradicate	With respect to invasive species (plant, pathogen, vertebrate, or invertebrate species), eradication is defined as the removal or elimination of the last remaining individual invasive species in the target infestation on a given site. It is determined to be complete when the target species is absent from the site for a continuous time period (that is, several years after the last individual was observed). Eradication of an infestation of invasive species is relative to the time-frame provided for the treatment procedures. Considering the need for multiple treatments over time, certain populations can be eradicated using proper integrated management techniques.
ESA	Endangered Species Act (federal)
FERC or Commission	Federal Energy Regulatory Commission
Forest Service	United States Department of Agriculture, Forest Service, or the Plumas National Forest or the Tahoe National Forest, if this applies to an action within a specific forest.
ft	feet
fuel	naturally occurring vegetation that could burn
FYLF	Foothill yellow-legged frog
GIS	Geographic Information System
GPS	Global Positioning System
hazard tree	For the purpose of this Plan, a “hazard tree” is a tree near a Project facility that YCWA proposes to fall because the tree is likely to fall under natural conditions within the foreseeable future, and when it falls under natural conditions will pose a risk to the nearby Project facility, those members of the public using the Project facility, or Project Operations staff maintaining the facility. Potential hazard trees may or may not be within the FERC Project Boundary.
herbicide	Herbicide is a pesticide (usually a chemical) used to manipulate or control undesirable vegetation (EPA 2016).
high use area	High use areas include places within the FERC Project Boundary with known and frequent (i.e., weekly) use for Project-related activities, including O&M and recreation.
HPMP	Historic Properties Management Plan
integrated pest management	A pest (in this context a NNIP) control strategy based on the determination of an economic, human health, or environmental threshold that indicates when a pest population is approaching the level at which control measures are necessary to prevent a decline in the desired conditions (economic or environmental factors). In principle, IPM is an ecologically-based holistic strategy that relies on natural mortality factors, such as natural enemies, weather, and environmental management, and seeks control tactics that disrupt these factors as little as possible. Integrated pest management techniques are defined within four broad categories: 1) Biological, 2) Cultural, 3) Mechanical/Physical, and 4) Chemical techniques.

Glossary. (continued)

large woody material	Large woody material is a log greater than or equal to 15 inches in diameter on the small side and equal to or greater than 20 ft long
LOP	Limited Operating Period; time period within which certain Project activities would NOT occur, within a pre-defined distance from a sensitive resource area
low use area	Low use areas include places within the FERC Project Boundary with infrequent or no use for Project-related activities, including O&M and recreation.
NFS	National Forest System
NNIP	non-native invasive plant
O&M	operation and maintenance
PAC	Protected Activity Centers
pesticide	Pesticide is any substance or mixture of substances intended to prevent, destroy, repel, or mitigate for any pest; or used as a plant regulator, defoliant, or desiccant. The term pesticide includes many types, broadly classified by the type of pest they control for (e.g., herbicides are intended to kill plants) (Forest Service 2013a).
Plan	Integrated Vegetation Management Plan
PNF	Plumas National Forest
Primary Project roads	Non-general use roads, used primarily for the Project and located within the FERC Project Boundary. Primary Project Roads are identified in YCWA's relicensing Transportation Systems Management Plan included in the new license.
Project	Yuba River Development Project, FERC Project No. 2246
screened undertaking	A screened undertaking is a Project-related activity that may have the potential to effect historic properties, but following appropriate screening, may be determined exempt from further review or consultation under the Historic Properties Management Plan.
sensitive areas	Areas with known cultural resources; areas with known special-status species; areas of sensitive habitat such as riparian zones and wetlands; and other pre-determined areas with significant sensitive resources.
Target NNIP Species	Target NNIP includes species listed by the California Department of Food and Agriculture (CDFA) as A, B, C, or Q noxious weeds (CDFA 2015), and other species targeted for control (and/or eradication) by the TNF (Forest Service 2015) and PNF (Forest Service 2013b).
TNF	Tahoe National Forest
treatment	Any activity or action taken to directly prevent, control, or eradicate a targeted invasive species. Treatment of an invasive species infestation may not necessarily result in the elimination of the infestation, and multiple treatments on the same site or population are sometimes required to affect a change in the status of the infestation. Treatment activities typically fall within any of the four general categories of integrated management techniques: Biological treatments, Cultural treatments, Mechanical treatments, or Chemical treatments. For example, the use of domestic goats to control invasive plants would be considered a biological treatment; the use of a pesticide to control invasive fishes would be characterized as a chemical treatment; planting of native seeds used to prevent invasive species infestations and restore a degraded site would be considered a cultural treatment technique; developing an aquatic species barrier to prevent invasive species from spreading throughout a watershed would be considered a physical treatment; cleaning, scraping, or otherwise removing invasive species attached to equipment, structures, or vehicles would be considered a mechanical treatment designed to directly control and prevent the spread of those species.
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wild Service
Watchlist	Lists of plants kept by PNF and TNF that are considered rare on the Forest
YCWA	Yuba County Water Agency

SECTION 1.0

INTRODUCTION

In April 2014, the Yuba County Water Agency (YCWA), pursuant to Section (§) 5.18 of Title 18 of the Code of Federal Regulations (C.F.R.), filed with the Federal Energy Regulatory Commission (FERC) an Application for a New License for Major Project – Existing Dam - for YCWA’s 361.9 megawatt Yuba River Development Project, FERC No. 2246 (Project). In December 2016, YCWA amended its April 2014 Application for a New License. The initial license for the Project was issued by the Federal Power Commission (FERC’s predecessor) to YCWA on May 16, 1963, effective on May 1, 1963. The Federal Power Commission’s May 6, 1966, Order Amending License changed the license’s effective date to May 1, 1966, for a term ending on April 30, 2016.

YCWA included this Integrated Vegetation Management Plan (Plan) in its December 2016 Amended Application for a New License.

The United States Department of Agriculture, Forest Service’s (Forest Service) Federal Power Act Section 4(e) authority only applies in this Plan to Project facilities on National Forest System (NFS) land, and the United States Army Corps of Engineers’ (USACE) Federal Power Act Section 4(e) authority only applies in this Plan to Project facilities on federal land administered by the USACE. The Forest Service administers the Plumas National Forest (PNF) in conformance with the PNF Land and Resource Management Plan (Forest Service 1988), as amended, and administers the Tahoe National Forest (TNF) in conformance with the TNF Land and Resource Management Plan (Forest Service 1990), as amended. Both plans were amended by the Sierra Nevada Forest Plan Amendment Supplemental Environmental Impact Statement and Record of Decision (Forest Service 2004). When the TNF or PNF Forest Plan revisions occur, those revised plans will supersede the 1990 TNF and 1988 PNF plans.

1.1 Background

1.1.1 Yuba River Development Project

The Project is located in Yuba, Sierra and Nevada counties, California, on the main stems of the Yuba River, the North Yuba River and the Middle Yuba River, and on Oregon Creek, a tributary to the Middle Yuba River. Major Project facilities, which range in elevation from 280 feet (ft) to 2,049 ft, include: 1) New Bullards Bar Dam and Reservoir; 2) Our House and Log Cabin diversion dams; 3) Lohman Ridge and Camptonville diversion tunnels; 4) New Colgate and Narrows 2 power tunnels and penstocks; 5) New Colgate, New Bullards Minimum Flow and Narrows 2 powerhouses; and 6) appurtenant facilities and features (e.g., administrative buildings, switchyards, roads, trails and gages). The existing Project does not include any aboveground open water conduits (e.g., canals or flumes) or any transmission lines.

In addition, the Project includes 16 developed recreation facilities. These include: 1) Hornswoggle Group Campground; 2) Schoolhouse Campground; 3) Dark Day Campground; 4)

Cottage Creek Campground;¹ 5) Garden Point Boat-in Campground; 6) Madrone Cove Boat-in Campground; 7) Frenchy Point Boat-in Campground; 8) Dark Day Picnic Area; 9) Sunset Vista Point; 10) Dam Overlook; 11) Moran Road Day Use Area; 12) Cottage Creek Boat Launch;² 13) Dark Day Boat Launch, including the Overflow Parking Area; 14) Schoolhouse Trail; 15) Bullards Bar Trail; and 16) floating comfort stations.^{3,4} All of the recreation facilities are located on NFS land, with the exception of the Dam Overlook, Cottage Creek Boat Launch and small portions of the Bullards Bar Trail, which are located on land owned by YCWA. All of the developed recreation facilities are located within the existing FERC Project Boundary, except for a few short segments of the Bullards Bar Trail to the east of the Dark Day Boat Launch. In addition, the Project includes two undeveloped recreation sites at Our House and Log Cabin diversion dams, both located on NFS land and within the existing FERC Project Boundary.

Figure 1.1-1 shows the Project Vicinity,⁵ proposed Project, and proposed FERC Project Boundary.⁶

¹ Cottage Creek Campground was burned in 2010 and has not been rebuilt. YCWA is rebuilding the burned campground in 2016/2017.

² Emerald Cove Marina provides visitor services at Cottage Creek Boat Launch, including houseboat and boat rentals, boat slips and moorings, fuel and a general store. The marina is operated under a lease from YCWA by a private company.

³ The Project recreation facilities included one campground that is no longer part of the Project. Burnt Bridge Campground was closed initially by the Forest Service in 1979 due to low use levels. FERC, in an August 19, 1993 Order, which approved YCWA's Revised Recreation Plan, directed YCWA to remove all improvements and restore the Burnt Bridge Campground to the condition it was in prior to development of the facility. YCWA consulted with the Forest Service and all that remains of Burnt Bridge Campground today is the circulation road and vehicle spurs; all other facilities were removed.

⁴ If Oregon Creek Day Use Area or other new facilities are added to the Project, they will also fall under the Plan.

⁵ For the purpose of this Plan, "Project Vicinity" refers to the area surrounding the proposed Project on the order of United States Geological Survey 1:24,000 quadrangles.

⁶ The FERC Project Boundary is the area that YCWA uses for normal Project operations and maintenance. The Boundary is shown in Exhibit G of YCWA's Amended Application for New License, and may be changed by FERC, with cause, from time to time during the term of the new license.

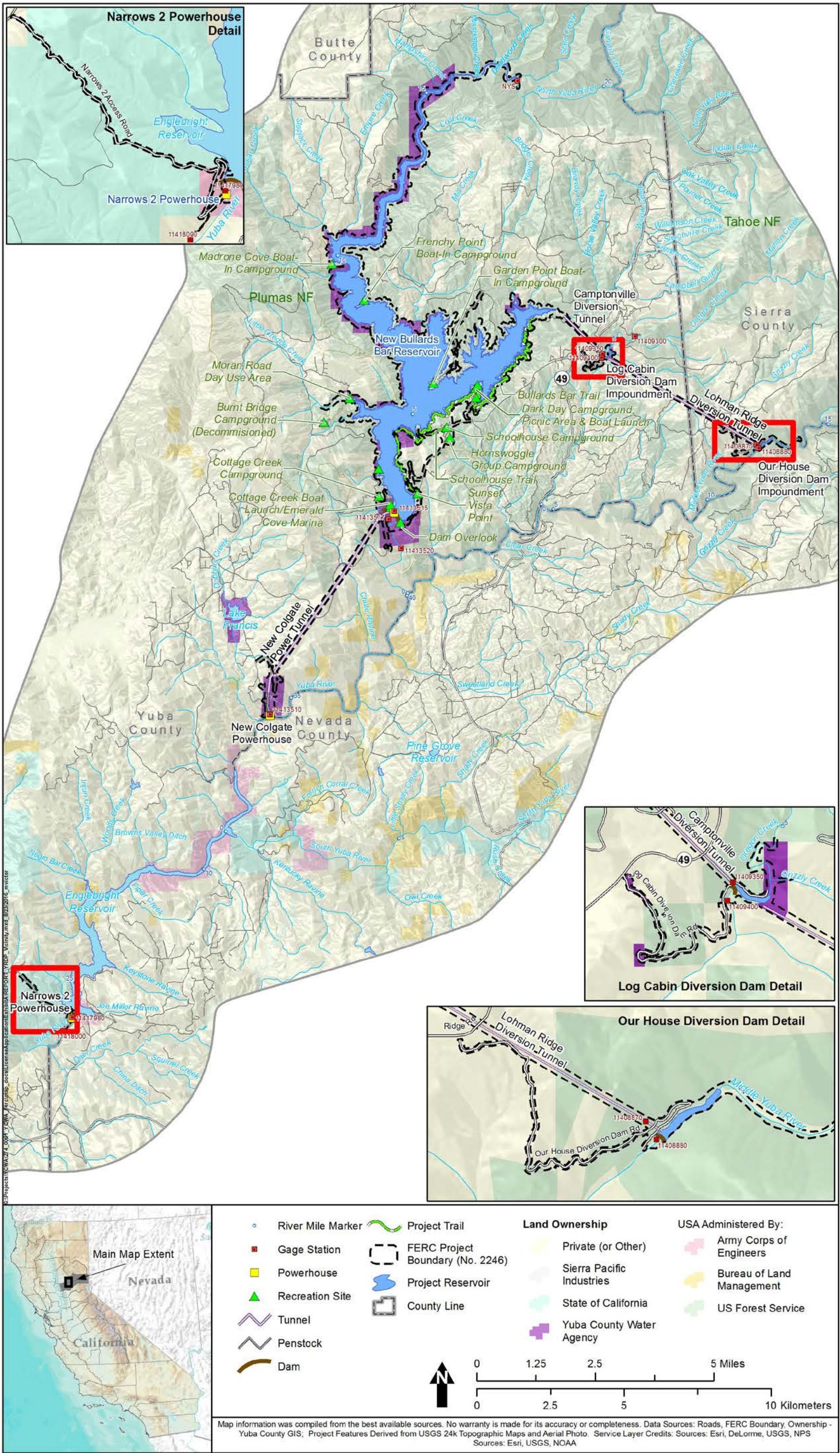


Figure 1.1-1. Yuba County Water Agency's Yuba River Development Project and Project Vicinity.

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1.2 Purpose of the Integrated Vegetation Management Plan

This Plan is intended to provide guidance for the management of vegetation (with the exception of aquatic invasive plants, which are addressed in the relicensing's Aquatic Invasive Species Management Plan) within the FERC Project Boundary. This includes management of non-native invasive plants (NNIP), revegetation and vegetation management in sensitive areas. In addition, this Plan provides guidance for vegetation management and hazard reduction activities related to YCWA's routine operations and maintenance (O&M) activities within the FERC Project Boundary, including along roads and at facilities.

YCWA will coordinate the efforts required under this Plan with other Project resource efforts, including implementation of other resource management plans and measures included in the new license.

YCWA will, in particular, take into account the need to avoid or minimize disturbance to sensitive areas. For the purpose of the Plan, sensitive areas are: areas with known cultural resources; areas with known special-status species; areas of sensitive habitat, such as riparian zones and wetlands; and other pre-determined areas with significant sensitive resources. Refer to Section 5.0, Sensitive Area Protections, for more information about how effects to sensitive resources will be avoided and minimized.

1.3 Goals and Objectives of the Integrated Vegetation Management Plan

The goals of this Plan are: 1) management and monitoring actions to prevent the introduction, establishment and spread of NNIP into new areas; 2) control and localized eradication of known infestations of NNIP; 3) the restoration of native vegetation in areas disturbed by Project activities; 4) the protection of sensitive areas; and 5) implementation of Project-related vegetation management and hazard reduction activities following Best Management Practices (BMP).

The objective of the Plan is to provide necessary guidance to meet Plan goals.

1.4 Contents of the Integrated Vegetation Management Plan

This Plan includes the following:

- Section 1.0. Introduction. This section includes introductory information, including the purpose and goals of the Plan.
- Section 2.0. Non-native Invasive Plants Management. This section includes guidelines for NNIP prevention, information for NNIP surveys and monitoring, and NNIP treatment guidelines, monitoring and adaptive management.
- Section 3.0. Routine Vegetation Management Related to YCWA's Operations and Maintenance. This section includes information on routine vegetation management.

- Section 4.0. Revegetation. This section describes the requirements for revegetation on the Project, including what activities are subject to revegetation, how sites will be evaluated and monitored, steps for planning and how revegetation success will be determined.
- Section 5.0. Sensitive Area Protections. This section defines sensitive areas and how vegetation activities will be conducted to protect them, as well as includes information on surveys for special-status plants.
- Section 6.0. Pesticide Use. This section described the steps for the use of pesticides on NFS land and discusses YCWA's pesticide use on non-NFS lands.
- Section 7.0. Annual Employee Training. This section details the timing of employee training and what information relevant to vegetation management should be included in the training.
- Section 8.0. Reporting, Consultation and Plan Revisions. This section details consultation and reporting commitments under the Plan between YCWA and appropriate state and federal agencies.
- Section 9.0. References Cited. This section provides a list of the references cited in the Plan.

SECTION 2.0

NON-NATIVE INVASIVE PLANTS MANAGEMENT

NNIP management includes three main elements: prevention, monitoring/surveys and treatment. For the purposes of the Plan, two types of NNIP are defined: Target NNIP and Non-Target NNIP. Together, Target NNIP and Non-Target NNIP are referred to as “NNIP” in this Plan.

On NFS land, for the purpose of this Plan Target NNIP and Non-Target NNIP are defined as the following:

- Target NNIP: Species listed by the California Department of Food and Agriculture (CDFA) as A, B, or Q noxious weeds (CDFA 2015) and these additional NNIP listed by the TNF (Forest Service 2015) and PNF (Forest Service 2013b): Italian thistle (*Carduus pycnocephalus*), Medusahead grass (*Elymus caput-medusae*), French broom (*Genista monspessulana*), yellow starthistle (*Centaurea solstitialis*) and Scotch broom (*Cytisus scoparius*).
- Non-Target NNIP: Non-Target NNIP include Klamathweed (*Hypericum perforatum* ssp. *perforatum*), cheatgrass (*Bromus tectorum*), bull thistle (*Cirsium vulgare*), Bermuda grass (*Cynodon dactylon*), and Himalayan blackberry (*Rubus armeniacus*). Infestations of Klamathweed are considered under control by introduced bio control agents. Bull thistle is frequently replaced by native plants if disturbance is not continued. Bermuda and cheatgrass are not currently treated by the TNF or PNF. There are currently no cost effective methods to treat Himalayan blackberry in riparian areas.

On non-NFS land for the purpose of this Plan, Target NNIP are defined as CDFA A, B or Q weeds and/or species listed for eradication by the counties in which the NNIP is found. Currently, Nevada, Placer and Sierra counties do not have ordinances or laws targeting specific weeds for eradication (D. Kelch pers. comm., 2015). Non-Target NNIP includes all CDFA C weeds.

On both NFS land and non-NFS land, Target NNIP species will be identified and mapped during surveys and/or monitoring and treated for control or eradication. Non-Target NNIP species will not be monitored or treated on either NFS land or non-NFS land, except Non-Target NNIP on NFS land will be monitored and treated where they are collocated with a sensitive plant occurrence (see Section 5.1).

The CDFA noxious weeds list and the TNF’s NNIP and PNF’s Noxious Weeds lists may change over the term of the new license. The CDFA noxious weed list is available online on the CDFA’s website, or it may be obtained directly from CDFA’s Integrated Pest Control Branch, and the TNF and PNF lists can be directly obtained from the Forest Service.

Table 2.0-1 includes a list of some NNIP known or with the potential to occur within the Project Area. This list is included in the Plan for general guidance and not included to be comprehensive. This list is likely to change over time, due to movement of species, additions/subtractions to NNIP listings and eradication of NNIPs from the area. The table was

put together using the following sources: Encycloweedia (CDFA 2015), California State-listed Noxious Weeds (NRCS 2014), California Invasive Plant Inventory Database (Cal-IPC 2016), Plumas National Forest Noxious Species List (Forest Service 2013b), Tahoe National Forest Non-native Invasive Plant Species list (Forest Service 2015), and Weeds of California (DiTomaso and Healy 2007).

Table 2.0-1. Some NNIP with the potential to occur on the Yuba River Development Project.

Common Name Scientific Name	Status ¹	Flowering Period ²	Elevation ² (ft)	Habitat ²
Russian knapweed <i>Acroptilon repens</i>	A	May-Sept	Below 6,200	Fields, roadsides, cultivated ground, disturbed areas
Barbed goat grass <i>Aegilops triuncialis</i>	B, PNF	May-Aug	Below 3,300	Disturbed sites, cultivated fields, roadsides
Tree-of-heaven <i>Ailanthus altissima</i>	NR, PNF, TNF	May-Jul	Below 6,100	Disturbed areas, roadsides, and urban waste areas
Cheatgrass <i>Bromus tectorum</i>	NR, PNF, TNF	May-June	Below 6,000	Fields, roadsides, cultivated ground, disturbed areas
Plumeless thistle <i>Carduus acanthoides</i>	A	May-Aug	Below 4,300	Roadsides, pastures, waste areas
Musk thistle <i>Carduus nutans</i>	A, TNF	Jun-Jul	330-4,000	Roadsides, pastures, waste areas
Italian thistle <i>Carduus pycnocephalus</i>	C, PNF	May-Jul	Below 3,300	Roadsides, pastures, waste areas
Woolly distaff thistle <i>Carthamus lanatus</i>	B	July-Aug	Below 3,600	Disturbed sites, roadsides, pastures, grain fields
Purple starthistle <i>Centaurea calcitrapa</i>	B	Jul-Oct	Below 3,300	Disturbed areas, fields, rangeland, heavy fertile soils
Diffuse knapweed <i>Centaurea diffusa</i>	A	Jun-Sep	Below 7,600	Fields, roadsides, well-drained soils
Spotted knapweed <i>Centaurea stoebe</i> ssp. <i>micranthos</i>	A, PNF, TNF	July-Aug	Below 8,500	Open disturbed sites, grasslands, forested areas, roadsides
Maltese starthistle <i>Centaurea melitensis</i>	NR, PNF, TNF	Apr-July	Below 7,200	Open disturbed sites, grasslands, roadsides, waste places
Yellow starthistle <i>Centaurea solstitialis</i>	C, PNF, TNF	Jun-Dec	Below 4,300	Pastures, roadsides, disturbed grassland or woodland
Skeletonweed <i>Chondrilla juncea</i>	A, PNF, TNF	May-Dec	Below 2,000	Disturbed areas, croplands, semiarid pastures, residential properties
Canada thistle <i>Cirsium arvense</i>	B, PNF, TNF	Jun-Sep	Below 5,900	Disturbed areas, stream banks, gardens, moist soils
Bull thistle <i>Cirsium vulgare</i>	NR, TNF	May-Oct	Below 7,700	Disturbed sites, crop fields, orchards, heavy fertile soils
Bermuda grass <i>Cynodon dactylon</i>	C, PNF	Jun-Aug	Below 3,000	Disturbed areas, gardens, turf, landscaped and forestry areas
Scotch broom <i>Cytisus scoparius</i>	C, PNF, TNF	Mar-Jun	Below 3,300	Disturbed areas, coastal scrub, oak woodlands, mountainous regions
Medusahead grass <i>Elymus caput-medusae</i>	C, PNF	Apr-Jul	Below 6,900	Disturbed sites, grassland, openings in oak woodlands and chaparral
Oblong spurge <i>Euphorbia oblongata</i>	B, TNF	Apr-Aug	Below 3,300	Waste areas, disturbed sites, roadsides, fields
Japanese knotweed <i>Fallopia japonica</i>	B, PNF	Aug-Oct	Below 3,300	Disturbed areas, moist sites, roadsides, riparian and wetland areas
Giant knotweed <i>Fallopia sachalinensis</i>	B	Jul-Oct	Below 1,650	Disturbed areas, moist sites, roadsides, riparian and wetland areas

Table 2.0-1. (continued)

Common Name <i>Scientific Name</i>	Status ¹	Flowering Period ²	Elevation ² (ft)	Habitat ²
French broom <i>Genista monspessulana</i>	C, PNF, TNF	Mar-May	Below 1,600	Disturbed areas, humid and subhumid areas, undisturbed grasslands, coastal scrub
Klamathweed <i>Hypericum perforatum</i>	C, TNF	May-Aug	Below 6,500	Rangeland areas and pastures, roadsides, forest clearings
Dyer's woad <i>Isatis tinctoria</i>	B, TNF	Apr-Jun	Below 3,300	Roadsides, fields, disturbed sites
Lens-podded white-top <i>Lepidium chalepense</i>	B	Apr-Aug	Below 5,000	Disturbed, generally saline soils, fields
Perennial pepperweed, tall white- top <i>Lepidium latifolium</i>	B, PNF, TNF	Apr-Aug	Below 6,300	Reservoir beaches, saline soils, roadsides
Dalmation toadflax <i>Linaria dalmatica</i> ssp. <i>dalmatica</i>	A, PNF, TNF	May-Sep	Below 3,300	Disturbed places, pastures, fields
Purple loosestrife <i>Lythrum salicaria</i>	B, TNF	Jun-Sep	Below 5,300	Seasonal wetlands, ditches, cultivated fields
Scotch thistle <i>Onopordum acanthium</i>	A, TNF	Jul-Sep	Below 5,300	Disturbed areas, roadsides, fields, pasture, fertile soil
Himalayan blackberry <i>Rubus armeniacus</i>	NR, TNF	May-Sep	Below 5,300	Disturbed moist sites, fields, roadsides, riparian areas
Spanish broom <i>Spartium junceum</i>	C, PNF, TNF	Mar-Jun	Below 2,000	Open disturbed sites, grasslands, oak woodlands, riparian corridors, open forests
Black locust <i>Robinia pseudoacacia</i>	NR, PNF, TNF	May-Jun	Below 6,250	Roadsides, canyon slopes, disturbed woodlands, floodplain forests
Gorse <i>Ulex europaeus</i>	B, TNF	Nov-Jul	Below 1,300	Disturbed areas, sand dunes, coastal bluffs, logged areas and burned sites

¹ CDFA Status:

A = Eradication, containment, rejection, or other holding action at the state-county level. Quarantine interceptions to be rejected or treated at any point in the state.

B = Eradication, containment, control, or other holding action at the discretion of the commissioner. State endorsed holding action and eradication only when found in a nursery.

C = Action to retard spread outside of nurseries at the discretion of the commissioner; reject only when found in a crop seed for planting or at the discretion of the commissioner

Q = Species treated as temporary 'A' rated pests until formally rated

NR = Plant species in not ranked by CDFA (2015).

PNF = listed on the Plumas National Forest Noxious Species List (Forest Service 2013b).

TNF = listed on the Tahoe National Forest Non-native Invasive Plant Species list (Forest Service 2015)

² Source for flowering period, elevation, and habitat: DiTamaso and Healy (2007)

YCWA will use an integrated pest management approach to manage NNIP. Integrated pest management requires coordination of multiple efforts, and includes three main components:

- Preventing the introduction, establishment and further spread of NNIP. This component includes early detection and rapid treatment of Target NNIP.
- Monitoring known, and surveying for new, NNIP.

Implementing Target NNIP control measures to contain (and/or eradicate) known existing and new infestations, while utilizing adaptive management to continually improve treatment effectiveness.

Each of these components is described below.

2.1 Preventing the Introduction and Spread of NNIP⁷

YCWA's NNIP prevention on both NFS land and non-NFS land will follow California Invasive Plant Council BMPs, per their current BMP manual (e.g., Cal-IPC 2012). The prevention guidelines were developed to minimize and/or prevent the spread of NNIP from known occurrences and to prevent their introduction into new areas through Project-related operations and activities.

2.2 Monitoring of Known and Surveying for New NNIP

2.2.1 Surveying

Beginning in the first full calendar year of the new license term and every fifth⁸ year thereafter in high use areas and every tenth⁹ year thereafter in low-use areas, YCWA will conduct a complete Target NNIP survey on both NFS land and non-NFS land within the FERC Project Boundary (Attachment A shows high and low use areas). If a Target NNIP is identified within the FERC Project Boundary and extends outside the boundary, YCWA will visually estimate the extent of the population outside the boundary (i.e., square footage). Surveys will be conducted at an appropriate intensity to ascertain the nature and distribution of all Target NNIP occurrences within the FERC Project Boundary. Surveyors will record Target NNIP composition, location and relative abundance, and Geographic Information System (GIS) data, documenting the boundaries of occurrences of Target NNIP, if present. On NFS land, data on Target NNIP will be provided to the Forest Service 30 days prior to the meeting to develop the Target NNIP treatment strategy (per Section 2.3.3). On non-NFS land, data on Target NNIP will be used to develop YCWA's internal management planning.

If new, small occurrences of Target NNIP or new NNIP species are located on NFS land or non-NFS land and can be effectively treated in about 1 hour or less of work, they will be treated at the time of the survey by hand-pulling.

2.2.2 Monitoring Following Treatment

On NFS land, beginning the first year following a treatment, per the Target NNIP treatment strategy (Section 2.3.3), treated Target NNIP occurrences will be monitored annually, for 5 years or until an occurrence is considered eradicated, including evidence that the Target NNIP seed stored in the soil is depleted. Eradication is dependent on a number of factors, including NNIP species and environmental conditions. If after 5 years the occurrence is not near eradication, YCWA will consult with the Forest Service about remedial actions. If an infestation on NFS land is also contiguous on non-NFS land (not YCWA), YCWA will consult with the landowner regarding control or eradication. The following monitoring data will be collected:

⁷ The Plan recognizes that YCWA's activities are one of several contributing factors to current and potential NNIP occurrences within the FERC Project Boundary. Other significant factors likely include public travel, adjacent land management activities, recreation, and livestock grazing.

⁸ Survey timing in high use areas will be the first, sixth, eleventh, sixteenth, twenty-first and twenty-sixth years of the new license.

⁹ Survey timing in low use areas will be the first, eleventh, and twenty-first years of the new license.

- Global Positioning System (GPS)-determined occurrence boundary
- Visual assessment of the number of plants, treatment method(s), acreage treated, percent cover of Target NNIP within the treated area
- Photographs of the treated area

Comparisons between annual survey maps and data will be used to assess change in Target NNIP distribution and cover over time. This information will enable YCWA and the Forest Service, for areas on NFS land, to better determine the success of treatment and aid in deciding if alternative methods are necessary.

On non-NFS land, YCWA will monitor the treated NNIP occurrences during the 5-year surveys of NNIPs. Treatments may be altered or discontinued, based on the success of eradicating an occurrence.

2.3 Implementing Treatment Measures

Under the Plan, current infestations of Target NNIP within the FERC Project Boundary will be treated to prevent spread from those infestations and keep the existing infestation within its current footprint. An exception to this measure is infestations in areas that cannot be accessed safely.

For occurrences on NFS land, YCWA shall develop a treatment strategy of known populations of Target NNIP on NFS land. See Section 2.3.3 for details on the NNIP treatment strategy. Existing Target NNIP infestations located within the FERC Project Boundary that also extend outside the FERC Project Boundary on NFS land will be treated up to 100 ft beyond the FERC Project Boundary. If new Target NNIP infestations are found that extend beyond 100 ft outside the FERC Project Boundary on NFS land, YCWA shall consult with the Forest Service to determine if the infestation should be treated and if so, the appropriate treatment methods during the development of the treatment strategy.

On non-NFS land, YCWA will develop an internal management strategy consistent with state and county directions for NNIP management, for treating Target NNIP within the FERC Project Boundary. The internal management strategy will be shared with the Forest Service as part of the information provided for the development of the Target NNIP Treatment Strategy on NFS lands (see Section 2.3.3 for details).

2.3.1 Treatment Measures

Target NNIP on all lands within the FERC Project Boundary will be managed using an integrated pest management approach, including the prevention/education strategies discussed in Sections 2.1, and with a mixture of manual, mechanical, biological, and, where appropriate, chemical treatment methods.

Decisions on which treatment method(s) to use on NFS land will be detailed in the Target NNIP Treatment Strategy, per Section 2.3.3. On NFS land, treatment efforts for new Target NNIP

occurrences will begin within 30 days of detection. If the infestation is found during non-treatable seasons, then treatment may begin within 12 months of detection, with the emphasis on rapid treatment after detection, before seed set, if possible. If occurrences are already in or past seed set for the year, treatment will include specific disposal requirements.

On all lands, treatment methods shall be based on the Target NNIP's location, size, proximity to sensitive resources, known effectiveness of treatment methods and other applicable factors, and may include the following:

Manual treatment is most effective on small and/or new occurrences or occurrences located in sensitive areas. Manual methods include hand-pulling, cutting, solarizing, digging and targeted grazing. As with all NNIP treatment methods, additional treatments may be required annually until the seed stored in the soil is exhausted.

Mechanical treatment can be effective on small or large occurrences, and some mechanical methods can be effective in sensitive areas. Mechanical methods include cutting, mowing, disking and steaming. In general, these techniques have to be conducted annually for multiple years to fully treat a NNIP occurrence. Some mechanical methods also cause soil disturbance and stimulate the germination of NNIP seed stored in the soil. Additionally, mechanical methods can facilitate the spread of riparian and aquatic NNIPs to new areas.

Chemical treatment is an effective way of managing both large and small occurrences of some species of NNIP, but it may not be the preferred method of treatment in sensitive areas (see Section 6.0 for discussion of pesticide use).

YCWA will develop a NNIP treatment strategy for NFS land within a year of the first NNIP surveys under the new license, as described in Section 2.3.3. Per Section 6.0, Pesticide Use, written permission is required from the Forest Service before pesticides can be applied to NFS land. On NFS lands, areas where treatment has been completed will be restored/revegetated to help prevent the reintroduction of NNIP species, per the guidelines in Section 4.0.

2.3.2 Existing NNIP Populations

YCWA's relicensing studies in 2012 and 2014 found 458 occurrences (435.98 acres [ac]) of 15 NNIP species within the study area. Of these occurrences, 161 occurrences (123.73 ac) of 10 NNIP species were found on NFS land managed by the TNF, and 76 occurrences (101.71 ac) of 9 NNIP species were found on NFS land managed by the PNF.

Table 2.3-1. NNIP occurrences identified on federal and non-federal land in the Yuba River Development Project.

Species		Status ¹	Number of Occurrences on Public Land				Number of Occurrences on Private Land	
Common Name	Scientific Name		TNF	PNF	State of California	USACE	YCWA	Other Private
Barbed goatgrass	<i>Aegilops triuncialis</i>	B, PNF	--	1 (0.01 ac)	3 (1.06 ac)	1 (0.21 ac)	6 (1.50 ac)	4 (2.47 ac)
Tree-of-heaven	<i>Alianthus altissima</i>	NR, PNF, TNF	--	--	--	--	5 (0.96 ac)	--
Cheatgrass	<i>Bromus tectorum</i>	NR, PNF, TNF	--	1 (0.29 ac)	--	--	--	--
Italian thistle	<i>Carduus pycnocephalus</i>	C, PNF	--	1 (0.07 ac)	4 (0.46 ac)	--	11 (3.53 ac)	4 (0.07 ac)
Maltese starthistle	<i>Centaurea melitensis</i>	NR, PNF, TNF	--	--	--	1 (0.04 ac)	--	--
Yellow starthistle	<i>Centaurea solstitialis</i>	C, PNF, TNF	11 (1.77 ac)	3 (3.48 ac)	9 (4.62 ac)	2 (5.77 ac)	25 (46.38 ac)	14 (7.16 ac)
Skeletonweed	<i>Chondrilla juncea</i>	A, PNF, TNF	1 (0.03 ac)	1 (0.73 ac)	5 (0.24 ac)	1 (0.01 ac)	5 (10.20 ac)	3 (2.92 ac)
Bull thistle	<i>Cirsium vulgare</i>	NR, TNF	6 (0.01 ac)	--	--	--	1 (0.04 ac)	--
Bermuda grass	<i>Cynodon dactylon</i>	C, PNF	9 (20.94 ac)	11 (5.13 ac)	6 (2.24 ac)	1 (0.01 ac)	22 (9.58 ac)	8 (0.37 ac)
Scotch broom	<i>Cytisus scoparius</i>	C, PNF, TNF	24 (22.87 ac)	10 (2.62 ac)	--	--	35 (84.54 ac)	13 (7.66 ac)
Medusahead grass	<i>Elymus caput-medusae</i>	C, PNF, TNF	1 (0.25 ac)	2 (0.61 ac)	2 (0.48 ac)	1 (0.95 ac)	4 (2.76 ac)	5 (3.25 ac)
French broom	<i>Genista monspessulana</i>	C, PNF, TNF	3 (0.36 ac)	--	--	--	4 (8.99 ac)	4 (0.25 ac)
Klamathweed	<i>Hypericum perforatum</i>	C, TNF	13 (0.93 ac)	--	4 (1.11 ac)	--	3 (0.21 ac)	4 (0.49 ac)
Black locust	<i>Robinia pseudoacacia</i>	NR, PNF, TNF	1 (<0.01 ac)	--	--	--	--	--
Himalayan blackberry	<i>Rubus armeniacus</i>	NR, TNF	92 (76.56 ac)	46 (88.77 ac)	1 (0.02 ac)	--	--	--
Subtotal Occurrences and Area			161 (123.73 ac)	76 (101.71 ac)	34 (10.23 ac)	7 (6.99 ac)	121 (168.68 ac)	59 (24.64 ac)
Total Occurrences and Area			458 (435.98 ac)					

¹ CDFA Status (2015):

A = Eradication, containment, rejection, or other holding action at the state-county level. Quarantine interceptions to be rejected or treated at any point in the state.

B = Eradication, containment, control, or other holding action at the discretion of the commissioner. State endorsed holding action and eradication only when found in a nursery.

C = Species treated as temporary 'A' rated pests until formally rated

NR = Plant species in not ranked by CDFA.

PNF = listed on the Plumas National Forest Noxious Species List (Forest Service 2013b).

TNF = listed on the Tahoe National Forest Non-native Invasive Plant Species list (Forest Service 2015)

Complete study results for the above species are presented in YCWA's Technical Memorandum 5-1, *Special-Status Plants* (YCWA 2012).

Target NNIPs known to occur within the FERC Project Boundary will be addressed with intensive treatment designed to eradicate the infestation, and/or under a containment strategy with the goal of keeping the size of the current infestation at levels that are equal to those detected during the year of survey (the first year after license issuance) or less, which will be decided during the development of the NNIP treatment strategy (Section 2.3.3). The containment strategy includes implementation of the prevention/education guidelines detailed in Sections 2.1

and 7.0. The figures in Attachment B show Target NNIP locations within the FERC Project Boundary.

2.3.2.1 Barbed Goatgrass



Barbed goatgrass is an herbaceous annual, which primarily infests rangelands and pastures, including grasslands and oak woodlands, but usually not chaparral. This species can tolerate serpentine and hard, shallow, dry, gravelly soils. Some seeds can remain dormant for two or more years. Prevention is the key in dealing with the species, because once it becomes established, controlling it is very difficult. Barbed goatgrass spread occurs only by seed dispersal, and seeds may be transported on hair, fur, wool, shoes or clothes (DiTomaso and Healy 2007).

Barbed goatgrass is CDFA B-listed, meaning eradication, containment, control, or other holding action is at the discretion of the commissioner (CDFA 2015). This species is a Target NNIP on NFS and non-NFS land.

Recommended treatments for the control of barbed goatgrass include hand-pulling, mowing, burning and selected herbicides; however, mowing and burning treatments are difficult to implement in a forested setting, such as the Project Area. Nonselective herbicides, such as glyphosate, or grass-specific herbicides, such as fluazifop (Envoy II) or clethodim (Fusilade), may be applied to control infestations and should be applied in a way that minimizes the damage to native vegetation (Aigner and Woerly 2010). There are currently no biological controls for barbed goatgrass (CDFA 2015).

YCWA found one occurrence of barbed goatgrass, equaling a total of 0.01 ac, on NFS land. The occurrence was found on land managed by the PNF. Four additional occurrences were found on public lands. There were three occurrences on State of California lands and one occurrence on USACE land, totaling 1.27 ac. Ten occurrences, totaling 3.97 ac, were found on private land. Six occurrences were found on YCWA lands and four occurrences on other private owned lands (YCWA 2012).

2.3.2.2 Tree-of-Heaven¹⁰

Originally introduced from China as an ornamental, tree-of-heaven is a fast-growing tree with large pinnate-compound leaves and creeping roots. The leaves have a skunky odor when crushed. It is known to form monotypic stands, shading out other vegetation. The species has a negative allelopathic effect¹¹ on other vegetation, giving it a competitive advantage in colonization. The tree is found primarily in areas of both anthropogenic and natural disturbance including roadsides, urban waste areas, and landscape sites in natural communities, including riparian areas, grassland and woodland. It is able to propagate clonally via root suckers, by seeds, and by basal root sprouts, when cut. Primary dispersion is by wind, water, soil movement,

¹⁰ Photograph found at http://www.cal-ipc.org/ip/management/plant_profiles/Ailanthus_altissima.php

¹¹ Allelopathic effect refers to the beneficial or harmful effects of one plant on another plant.



human activities and birds. Additionally, tree of heaven is known to basal sprout when stems are cut (DiTomaso and Healy 2007).

Tree-of-heaven is CDFA C-listed, meaning no state action is required except to retard the speed of spreading (CDFA 2015). This species is currently treatment Target NNIP (targeted for treatment) on NFS land in the Project Area. On non-NFS land, this species is a non-Target NNIP.

Manual pulling or digging up of young seedlings is preferable in moist soil. The entire plant, including roots and fragments, should be removed to be most effective. The removal of female trees can reduce spread. General herbicides, such as triclopyr or imazapyr, applied to the leaves, basal bark, cut stump or hand-and-squirt treatment can effectively control growth. Basal bark application is the easiest chemical method and does not require cutting; this is most effective during late winter/early spring and summer. Cut stump chemical method is most effective in areas where trees plan to be cut. The hack-and-squirt or injection method is most effective during the summer, as it minimizes sprouting and suckering herbicide (DiTomaso and Healy 2007).

Tree-of-heaven was not observed on public lands. On private land, tree-of-heaven occurs in three dense stands at New Colgate Power Penstock, and in one dense stand south of New Bullards Bar Dam (YCWA 2012). A total of 0.96 ac of tree-of-heaven was located on private lands.

2.3.2.3 Cheatgrass¹²



Cheatgrass is a cool season annual that occurs throughout California and has replaced much of the native grassland vegetation. It has sharp florets and straight awns. Cheatgrass reproduces by seed, dispersing short distances by wind, animals, or on the clothing of humans. Long-distance dispersal is facilitated through recreational, agricultural, and construction activities, specifically in areas of soil disturbance or overgrazing (Cal-IPC 2016). Cheatgrass has the potential to increase the frequency and spread of wildfire in certain communities. Increased fire frequency may contribute to potential habitat conversion, as shrubs and trees killed from fire are often unable to regenerate (DiTomaso and Healy 2007).

Cheatgrass is not CDFA ranked (CDFA 2015). This species is currently a non-Target NNIP on NFS and non-NFS land in the Project Area.

The favored treatment methods for cheatgrass are mowing and burning; both can be effective to reduce seed production. However, with both methods, treatment timing is sensitive. Mowing

¹² Photograph found at http://www.cal-ipc.org/ip/management/plant_profiles/Bromus_tectorum.php

within a week after flower initiation can reduce seed production and burning should occur before spikelets break apart. Glyphosate and other readily available herbicides have also been used to effectively control populations (DiTomaso and Healy 2007).

Cheatgrass has limited distribution in the study area. There is one occurrence of 0.29 ac on lands managed by the PNF; it is a diffuse stand on the east facing shore of New Bullards Bar Reservoir near the North Yuba River (YCWA 2012).

2.3.2.4 Italian Thistle¹³



Italian thistle is an annual (occasionally biennial) native to the Mediterranean region and a widely distributed weed in the Sierra Nevada foothills. It has prickly leaves and stems with wings. Occurrences can reach nearly 100 percent cover in some areas and inhibit the recruitment and survivorship of native plant species. Plants are considered to spread aggressively by seed, which fall near the parent plant, but can travel long distances by wind, water, birds, small mammals and human activities. Seeds can persist for 7 to 10 years and germinate under drought conditions (DiTomaso and Healy 2007).

Italian thistle is CDFA C-listed, meaning no state action is required except to retard the speed of spreading (CDFA 2015). However, this species is a Target NNIP on NFS land. On non-NFS land, this species is a non-Target NNIP.

Recommended treatment strategies for Italian thistle include mowing and burning. Mowing 2 to 4 days after flowering starts is an effective way to prevent seed production; however, removal of basal portions of the plant is recommended because flower buds easily regenerate. Burning can help remove dense stands of mature Italian thistle, but is not very effective at removing plants still in the basal rosette stage (DiTomaso and Healy 2007). Clopyralid, picloram and triclopyr are common herbicides for thistles. With repeated use, Italian thistle generally shows herbicide resistance to 2, 4-D or MCPA. Grazing sheep and goats can also be effective in controlling thistle (CABI 2015).

YCWA found one occurrence of Italian thistle, equaling 0.07 ac, on NFS land. The occurrence was found on land managed by the PNF. Four additional occurrences were found on State of California lands, totaling 0.46 ac. Fifteen occurrences, totaling 3.60 ac, were found on private land. Eleven occurrences were found on YCWA lands and four occurrences on other privately-owned lands (YCWA 2012).

¹³ Photograph found at http://www.cal-ipc.org/ip/management/plant_profiles/Carduus_pycnocephalus.php

2.3.2.5 Maltese Starthistle¹⁴



Maltese starthistle is a prickly-headed winter annual with yellow flowers and wiry stems. It is primarily found in disturbed sites, but also known to move into annual grasslands. When this species forms dense stands, it displaces native vegetation and animals, in addition to increasing soil erosion and reducing water percolation (DiTomaso and Healy 2007). Maltese starthistle reproduces by seed; an individual plant can produce up to 60 or more seeds per flower head and up to 100 or more flower heads (up to 6,000 seeds per plant). Seeds

fall near the parent plant and are dispersed by wind, human activities, animals, water and soil movement (DiTomaso and Healy 2007).

Maltese starthistle is not CDFA-ranked (CDFA 2015). However, this species is a Target NNIP on NFS land. On non-NFS land, this species is a non-Target NNIP.

Recommended treatments for Maltese starthistle are not well documented, but the control methods recommended for yellow starthistle are assumed to be effective at control of Maltese thistle (DiTomaso and Healy 2007; CDFA 2015). A discussion of treatment strategies for yellow starthistle is included in section 2.3.2.6.

Maltese starthistle has limited distribution in the study area – one occurrence was found on USACE land, totaling 0.04 ac (YCWA 2012).

2.3.2.6 Yellow Starthistle¹⁵



Like Maltese starthistle, yellow starthistle is a prickly-headed winter annual with yellow flowers and wiry stems. It is highly competitive and will typically develop into very dense stands, displacing native vegetation in otherwise natural areas. The species was originally introduced from southern Europe into California around 1850. It has since infested extremely large areas within the State. This species is a prolific seed producer, producing seeds at levels of 10,000 per square meter, which remain viable in soil for 3 or more years. Seeds can be transported by human vectors, including the movement of contaminated hay and infested equipment or vehicle transport. Some seeds are dispersed by wind, and birds and mammals after ingestion (DiTomaso and Healy 2007).

Yellow starthistle is CDFA C-listed, meaning no state action is required except to retard the speed of spreading (CDFA 2015). However, this species is a Target NNIP on NFS land. On non-NFS land, this species is a non-Target NNIP.

¹⁴ Photograph found at http://www.cal-ipc.org/ip/management/plant_profiles/Centaurea_melitensis.php

¹⁵ Photograph found at http://www.cal-ipc.org/ip/management/plant_profiles/Centaurea_solstitialis.php

Recommended treatment methods include grazing, mowing and burning, all of which can prevent seed production and control infestations. However, all methods are recommended as annual treatments, ranging over a period of 2 to 3 years or more. Like those treatments described for other NNIPs, the effectiveness of the treatment is dependent upon accurate timing. Grazing is recommended when the plants have developed flowering stems, but before the spiny heads develop. Mowing is most effective when plants just begin to bloom, and it is recommended that plants are cut below the height of the lowest branches. Burning is recommended after the plants have dried, but before seed is produced. Regardless of the treatment, vigilant monitoring is recommended to curb subsequent infestations. In addition to mechanical treatments, all species of starthistle are highly susceptible to the herbicide clopyralid (CDFA 2015).

YCWA found 14 occurrences, equaling a total of 5.25 ac, of yellow starthistle on NFS land: 11 occurrences, equaling a total of 1.77 ac, are on lands managed by the TNF; three occurrences, equaling a total of 3.48 ac, are on lands managed by the PNF. Eleven additional occurrences were found on public lands. There were nine occurrences on State of California lands and two occurrences on USACE land, totaling 10.39 ac. Thirty-nine occurrences, totaling 53.54 ac, were found on private land. Twenty-five occurrences were found on YCWA lands and 14 occurrences on other privately owned lands. Yellow starthistle is diffuse throughout most of the study area, with the exception of New Bullards Bar Reservoir (YCWA 2012).

2.3.2.7 Skeletonweed



Skeletonweed is an herbaceous perennial or biennial, which is known to take several different morphological forms, differing in leaf width, branching pattern and flowering time. These characteristics generally do not differ within populations since all reproduction is clonal (vegetative and seed apomixis). Flower stems persist after senescence. This species prefers habitat in disturbed areas, such as roadsides, croplands, pastures and residential areas. The species will tolerate a wide variety of conditions, but grows best on well-drained soils, cool winters and hot, dry summers

without periods of prolonged drought. Seeds are primarily wind-dispersed, but may also be vectored by water, animals and human activity (DiTomaso and Healy 2007).

Skeletonweed is CDFA A-listed, meaning that eradication, containment, rejection, or other holding action at the state-county level is mandated (CDFA 2015). This species is a Target NNIP on NFS and non-NFS land.

A combination of methods is necessary to effectively control skeletonweed. Hand-pulling can remove small occurrences, but all parts of the plant must be removed, bagged and thrown away to prevent resprouting. Mechanical tillage can effectively eliminate seedlings and older plants in the short-term. However, the plants will continue to persist, due to vegetative reproduction.

Mechanical tillage is not always possible in a forested setting, since tillage would damage the roots of other plants in addition to skeletonweed. Very few herbicides are known to control skeletonweed and single treatments are ineffective. Of herbicides that are labeled for use in California, tank mixes of clopyralid and MCPA (2-methyl-4-chlorophenoxyacetic acid) or 2, 4-D have been shown to be more effective than any of those chemicals applied alone. Glyphosate helps to control rosettes. Three forms of biological control, the skeletonweed gall mite (*Eriophyes chondrillae*), skeletonweed gall midge (*Cystiphora schmidtii*) and skeletonweed rust (*Puccinia chondrillina*) have been shown to be successful in skeletonweed control and are all approved for use in California (CDFA 2015).

YCWA found two occurrences of skeletonweed, equaling a total of 0.76 ac, on NFS land: one occurrence of 0.03 ac is on land managed by the TNF and one occurrence of 0.73 ac is on land managed by the PNF. Six additional occurrences were found on public lands. There were five occurrences on State of California lands and one occurrence on USACE land totaling 0.25 ac. Eight occurrences, totaling 13.12 ac, were found on private land. Five occurrences were found on YCWA lands and three occurrences on other private owned lands (YCWA 2012).

2.3.2.8 Bull Thistle¹⁶



Bull thistle is a prickly biennial, annual, or perennial common to Mediterranean climates. It is generally found in open, disturbed sites associated with roads, fields, rangeland and forest openings. It flourishes in full sun and dry soils; soil disturbance facilitates seed germination and seedling establishment. Bull thistle spreads by seeds that germinate in the fall and/or spring. Although most seeds fall near the parent plants or disperse only short distances by wind, long distance dispersal may be achieved via human activities, water and soil movement. In addition, birds and small mammals may consume and disperse some seeds (DiTomaso and Healy 2007).

Bull thistle is CDFA C-listed, meaning no state action is required except to retard the speed of spreading (CDFA 2015). This species is a non-Target NNIP on NFS and non-NFS land in the

Project.

Recommended treatments for bull thistle include mowing and hand pulling before bloom, coupled with the removal of flower heads, which can still develop viable seed after being cut. The most effective methods of bull thistle control take 4 years, at a minimum. Application of herbicides to rosettes appears to be the most effective chemical method (CDFA 2015).

YCWA found six occurrences, equaling a total of 0.01 ac, on lands managed by the TNF. One occurrence of bull thistle, equaling a total of 0.04 ac, is present in one diffuse location along Marysville Road south of New Bullards Bar Dam on YCWA lands (YCWA 2012).

¹⁶ Photograph found at http://www.cal-ipc.org/ip/management/plant_profiles/Cirsium_vulgare.php

2.3.2.9 Bermuda Grass¹⁷



Bermuda grass is a sod-forming, perennial species introduced from Africa. The species is known to form extensive networks of creeping rhizomes and stolons. The species can form dense ground covering mats, which inhibit native vegetation and fragment habitat. Additionally, it is thought to have potent negative allelopathic effects on nearby vegetative communities (Bossard et al. 2000). Bermuda grass favors disturbed sites, gardens, agronomic crops, orchards, turf, landscaped and forested areas. It prefers moist soil types in irrigated areas, or areas that receive some warm seasonal moisture (CDFA 2015). The species can be spread vegetatively and by seed. Long distance dispersal may be achieved via contaminated hay, livestock feed, soil movement, and transport of mowing equipment and vehicles (Bossard et al. 2000).

Bermuda grass is CDFA C-listed, meaning no state action is required except to retard the speed of spreading (CDFA 2014). This species is a non-Target NNIP on NFS and non-NFS land in the Project Area.

Hand removal of rhizomes and stolons is recommended treatment for the control of Bermuda grass in small areas. For large areas, tilling or disking is recommended and exposes rhizomes to sun-drying or freezing, or summer solarization in moist soils. Herbicide application in the summer to mid-fall before plant dormancy can be effective (CDFA 2015). Weaker growth of Bermuda grass can be achieved by increasing shade from tall shrubs and trees and then repeated hand pulling for complete removal. Covering the Bermuda grass with black or clear plastic for 6 to 8 week periods have proven effective during the summer months on south and southwest facing slopes and flat areas. Grass-selective herbicides are most effective in early spring. Non-selective herbicides are most effective in the late summer. Other herbicides will simply suppress Bermuda grass, but may harm desirable vegetation (Cudney et al. 2014).

Twenty-seven occurrences, equaling a total of 28.32 ac, of Bermuda grass occur on public lands: 9 occurrences, equaling a total of 20.94 ac, are on lands managed by the TNF; 11 occurrences, equaling a total of 5.13 ac, are on lands managed by the PNF; six occurrences, equaling a total of 2.24 ac, are on lands managed by the State of California, and, one occurrence of 0.01 ac is on lands managed by the USACE. Bermuda grass occurs in a thin band, primarily around the southern and eastern shorelines of New Bullards Bar Reservoir just below the high water mark. In addition, it occurs along Marysville Road and access roads to Narrows 2 and New Colgate powerhouses (YCWA 2012).

¹⁷ Photograph found at http://www.cal-ipc.org/ip/management/plant_profiles/Cynodon_dactylon.php

2.3.2.10 Scotch Broom¹⁸



Scotch broom is a perennial shrub that was originally introduced as a landscape ornamental, but is a highly aggressive invader of many natural areas. A mature shrub can produce 2,000 to 3,500 seed pods in a year, and seeds can survive 30 or more years in the ground. In addition, the seeds are round in shape and may roll down hill; if an infestation is along a ridgeline, it is likely that the infestation will spread downslope (DiTomaso and Healy 2007).

Scotch broom is CDFA C-listed, meaning no state action is required except to retard the speed of spreading (CDFA 2015). However, this species is a Target NNIP on NFS land. On non-NFS land, this species is a non-Target NNIP.

The two recommended treatments for Scotch broom are mechanical and chemical. Weed wrenches are an effective technique for the complete removal of adult Scotch broom occurrences. Glyphosate and Triclopyr are both effective chemical treatments for Scotch broom. Both mechanical and chemical treatments require multiple years to completely eradicate Scotch broom occurrences. Three types of insects are also currently used to control Scotch broom: Scotch broom seed weevil (*Apion fuscirostre*), twig miner (*Lecuopectera spartifoliella*) and the Gorse, or broom tip, moth (*Agonopterix nervosa*) (CDFA 2015).

YCWA found 34 occurrences, equaling a total of 25.49 ac, of Scotch broom on NFS land: 24 occurrences, equaling a total of 22.87 ac, are on lands managed by the TNF, and 10 occurrences, equaling a total of 2.62 ac, are on lands managed by the PNF. Forty-eight occurrences, totaling 92.20 ac were found on private land. Thirty-five occurrences were found on YCWA lands and thirteen occurrences on other private owned lands. Scotch broom is diffuse throughout most of the study area, with the exception of the access road to Narrows 2 Powerhouse (YCWA 2012).

2.3.2.11 Medusahead Grass¹⁹



Medusahead grass, a noxious annual introduced from Europe, is a regular invader of rangeland communities, developing dense stands and displacing native vegetation and wildlife. Medusahead is unpalatable to livestock, except during the early growth stages. Senesced individuals form dense layers of litter that decompose slowly, creating fuel for wildfire and altering moisture characteristics in the soil. This species tends to colonize disturbed sites, including grassland, oak woodland and agronomic fields. A

¹⁸ Photograph found at http://www.cal-ipc.org/ip/management/plant_profiles/Cytisus_scoparius.php

¹⁹ Photograph found at http://www.cal-ipc.org/ip/management/plant_profiles/Taeniatherum_caput-medusae.php

prolific seed producer, seeds are dispersed locally via wind and water, and achieve long distance dispersal through various human activities, and the movement of contaminated soil, clinging to the feet and fur of animals (DiTomaso and Healy 2007).

Medusahead grass is CDFA C-listed, meaning no state action is required except to retard the speed of spreading (CDFA 2015). However, this species is a Target NNIP on NFS land. On non-NFS land, this species is a non-Target NNIP.

The recommended treatment for the control of medusahead is burning and disking/plowing. A slow, hot burn, applied when other vegetation has dried and medusahead seeds have not yet matured, can reduce infestations. Alternately, disking or plowing before seeds set can be an effective method to reduce stands (CDFA 2015). The application of foliar herbicides and soil active compounds can be effective, if applied with good coverage (Stannard et al. 2010).

Medusahead has limited distribution in the study area. YCWA found two occurrences, equaling a total of 0.61 ac, on lands managed by the PNF. One occurrence, equaling a total of 0.25 ac, was found on lands managed by the TNF. Three occurrences, totaling 1.43 ac, were also found on public lands – two occurrences on State of California land and an additional occurrence located on USACE land. Nine occurrences, totaling 6.01 ac, were found on private land. Four occurrences were found on YCWA lands and five occurrences on other privately owned lands (YCWA 2012).

2.3.2.12 French Broom²⁰



French broom is a perennial, evergreen shrub originally introduced to the San Francisco Bay area as an ornamental. It is a mid-sized plant that can produce 8,000 seeds or more per year. The seed pods open explosively, sending the seeds up to 15 ft away. They are also dispersed by birds, mammals, in river water and rain wash, in mud and on road grading or maintenance machinery. Resprouting also occurs from root crowns after cutting or burning (Bossard et. al. 2000).

French broom is CDFA C-listed, meaning no state action is required except to retard the speed of spreading (CDFA 2015). However, this species is a Target NNIP on NFS land. On non-NFS land, this species is a non-Target NNIP.

The recommended treatment for the control of French broom uses a combination of methods, including herbicide applications, removal of mature plants, burning and treating emergent seedlings for multiple years. All methods require vigilant annual monitoring for 5 to 10 years and every 2 years thereafter (Bossard et. al. 2000).

²⁰ Photograph found at http://www.cal-ipc.org/ip/management/plant_profiles/Genista_monspessulana.php

YCWA found three occurrences, equaling a total of 0.36 ac, of French broom on lands managed by the TNF. Eight occurrences, totaling 9.24 ac, were found on private land. Four occurrences, totaling 8.99 ac, were found on YCWA lands and four occurrences, totaling 0.25 ac, on other privately owned lands (YCWA 2012).

2.3.2.13 Klamathweed



Klamathweed, also known as St. Johnswort, is a perennial native to Europe that displaces native plants. Plants spread aggressively by rhizomatous growth and through seed dispersal, with seeds remaining viable for up to 10 years. Known long-distance vectors include vehicle tires and other heavy equipment, while wind, water and soil movement provide short-distance dispersal (CDFA 2015).

Klamathweed is not CDFA-ranked (CDFA 2015). This species is a non-Target NNIP on NFS and non-NFS land in the Project Area.

The recommended treatment for the control of Klamathweed is mowing, which can reduce seed production. A new or small infestation of Klamathweed can be hand-pulled; however, repeated pulls are necessary for complete eradication. However, plants can propagate from the rhizomes (CDFA 2015). Systematic herbicide application in the spring can be effective (DiTomaso and Healy 2007).

Seventeen occurrences, equaling a total of 2.04 ac, of Klamathweed occur on public lands: 13 occurrences, equaling a total of 0.93 ac, are on lands managed by the TNF, and four occurrences, equaling a total of 1.11 ac, are on lands managed by the State of California. On private lands, seven occurrences were located on 0.80 ac. Three occurrences, totaling 0.21 ac, were on YCWA lands, while four occurrences, totaling 0.49 ac, were on other privately owned lands. The species occurs in diffuse patches near New Bullards Bar Dam, Bullards Bar hiking trail, and along access roads to Narrows 2 Powerhouse, New Colgate Tunnel, and Log Cabin and Our House diversion dams (YCWA 2012).

2.3.2.14 Black Locust²¹



Black locust is a fast growing, deciduous tree introduced to California from the eastern United States. Trees can produce numerous suckers from the roots, and dense clonal colonies that exclude native vegetation. Flowers, seeds, and bark are toxic to humans and livestock, but rarely fatal. Black locust flowers attract bees, but the seeds and foliage are poorly consumed by wildlife. The white flowers are showy, fragrant and bloom from April to June. This species also reproduces vegetatively

²¹ Photograph found at http://www.cal-ipc.org/ip/management/plant_profiles/Robinia_pseudoacacia.php

from root sprouts. Black locust can be found throughout California, except deserts, along roadsides, riparian areas, canyon slopes, disturbed woodlands, and floodplain forests, and grows best on well-drained, neutral to mildly acidic, limestone soils. Fire stimulates root sprouting and possibly seed germination, and can create conditions that favor seedling establishment (DiTomaso and Healy 2007).

Black locust is not CDFA-ranked (CDFA 2015). This species is a non-Target NNIP on NFS and non-NFS land in the Project.

Cutting or ringing trees close to the ground may stimulate root sprouting. However, repeatedly removing new shoots at least two times per year for several years can eventually kill a tree. Immediately treating a newly cut stump with systemic herbicide is more effective than cutting the tree alone. Digging out small trees and the main roots can also help reduce root sprouting. Monitoring sites and removing seedlings for 10 years or so can prevent new trees from becoming established (DiTomaso and Healy 2007).

One occurrence of black locust was located on TNF lands along Garden Valley Road, on less than 0.01 ac (YCWA 2014).

2.3.2.15 Himalayan Blackberry



Himalayan blackberry is an evergreen shrub originally introduced from Western Europe. Blackberries are strong competitors and colonize areas of infertile soils, forming impenetrable thickets in disturbed sites. It is a heavy seed producer and the seeds are dispersed by birds and mammals. The species can form roots at cane apices (tips), propagate from root and cane pieces, as well as form root shoots (Bossard et. al. 2000).

Himalayan blackberry is not CDFA-ranked (CDFA 2014). This species is a non-Target NNIP on NFS and land in the Project.

The recommended treatments for control of Himalayan blackberry are mechanical removal or burning. When mechanical removal is used, caution must be taken to prevent vegetative reproduction from the cuttings. Burning must be followed up with additional control methods for the resprouts. Manual removal by digging rootstocks is also effective but very slow and only suitable for small infestations and around trees and shrubs. Again, care must be taken to prevent any root pieces from breaking off and being left in the soils. Chemical herbicides are effective if applied in the correct growth periods (Bossard et. al. 2000).

One hundred and thirty-nine occurrences, equaling a total of 165.35 ac, of Himalayan blackberry occur on public lands: 92 occurrences, equaling a total of 76.56 ac, are on lands managed by the TNF; 46 occurrences, equaling a total of 88.77 ac, are on lands managed by the PNF; and, 1 occurrence of 0.02 ac is on lands managed by the State of California. Himalayan blackberry is diffused throughout most of the study area, with exception of the access road to Narrows 2

Powerhouse, where it occurs in two small (less than 0.1 ac) patches. Along the New Bullards Bar Reservoir shoreline, it is often present in the habitat edges near the ordinary high water line, under forested canopy. Himalayan blackberry is most dense where it occurs at the mouths of tributaries to the reservoir, often forming an impenetrable barrier to upstream travel (YCWA 2012).

2.3.3 NNIP Treatment Strategy

2.3.3.1 Non-NFS Lands

On non-NFS land, YCWA will develop an internal strategy for the treatment of Target NNIP within the FERC Project Boundary. NNIP treatments on non-NFS land will follow current policies for those lands and applicable federal, State and county laws.

2.3.3.2 NFS Lands

For Target NNIP treatments on NFS land, YCWA shall, in consultation with the Forest Service, develop a Target NNIP Treatment Strategy in the year following the first complete NNIP survey conducted after license issuance, beginning in approximately October or November of the survey year.

The Target NNIP Treatment Strategy will outline the treatment program for the 5 years following a NNIP survey, with a yearly check-in at the annual agency and tribes meeting to discuss the progress and potential modifications of the strategy.

Development of the treatment strategy will follow this general procedure:

- 1) Thirty days prior to the consultation meeting to develop the Target NNIP Treatment Strategy, YCWA will provide the Forest Service with maps and a table of all Target NNIP located during the survey, monitoring and incidental findings from other Project-related activities. These data will also include any new Target NNIP and any occurrences successfully eradicated from the Project. All data will be provided in an agreed to electronic/digital format.
- 2) YCWA will meet with the Forest Service to determine the highest priority Target NNIP occurrences for treatment. Factors for choosing the priority of occurrences will include, but may not be limited to, location in high use areas (Attachment A), safe accessibility, potential management techniques, colocation of occurrences with sensitive resources, outlying occurrences, areas where the Forest Service is currently conducting management, connection to other occurrences, and other characteristics of occurrences (acreage, percent cover, etc.).
- 3) Once the priority of all Target NNIP have been designated, YCWA and the Forest Service will determine the treatment strategy for each including: eradication or control; when and where to begin treatment; method(s) of treatment (e.g. herbicide, hand pulling, tarping, etc.); and monitoring.

YCWA will begin to implement the Target NNIP Treatment Strategy as soon as feasible, given the phenology of Target NNIP occurrences. The Treatment Strategy must be ready no later than 90 days prior to when the proposed management begins. The meeting(s) to develop the NNIP treatment strategy will be targeted for October or early November, to give YCWA time to compile data and provide it to the Forest Service in the 30-day window allotted prior to the meeting. Once the Forest Service assigns a unique identification number (e.g., a FACTS number) to an NNIP occurrence, YCWA will also include this number in their digital records for the occurrence. All subsequent reports will use this unique identification number.

If new Target NNIP are discovered in the future within the FERC Project Boundary during a non-survey year, the information will be shared with the Forest Service at the annual agency and tribes meeting, described in YCWA's proposed Condition GEN1 – Meet with Agencies and Indian Tribes Annually.

Early detection with rapid treatment is considered the most effective way to prevent the spread of NNIP into new areas. Newly discovered infestations of Target NNIP will be treated at the time of discovery when effective treatment would take less than one hour's worth of time, except when the infestation is discovered outside of its treatable season. Implementation of an annual NNIP training program supports early detection efforts by supporting on-the-ground identification.

Figure 2.3-1 shows the succession of events for the management of NNIP.

Non-native Invasive Plant Management Flowchart

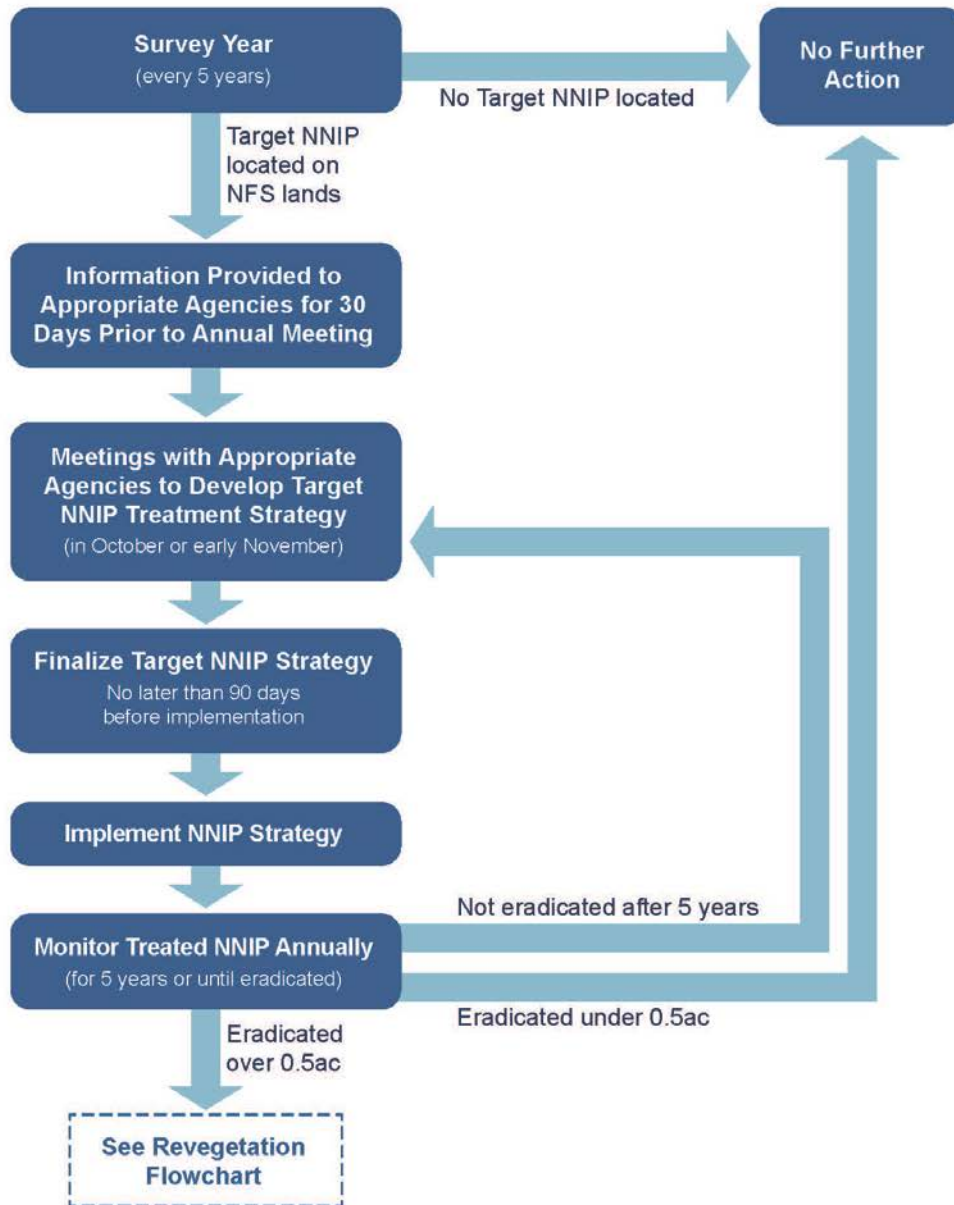


Figure 2.3-1. NNIP management flowchart of events.

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SECTION 3.0

ROUTINE VEGETATION MANAGEMENT RELATED TO YCWA'S OPERATIONS AND MAINTENANCE

This section is intended to generally describe vegetation management commonly performed on land located within the FERC Project Boundary. On NFS land, all vegetation management in sensitive areas will adhere to the requirements in Section 5.0, unless YCWA obtains approval from the Forest Service. All vegetation management on NFS land, with the exceptions listed below will be discussed with the Forest Service at the annual agency and tribes meeting described in YCWA's proposed Condition GEN1 – Meet with Agencies and Indian Tribes Annually. The following vegetation management activities on NFS land within the FERC Project Boundary do not require consultation with or approval by the Forest Service, unless the activity is located in a sensitive area or if YCWA proposes to dispose of fuels on NFS land (no consultation for these activities is required if fuels disposal is off of NFS land):

- Mechanical vegetation trimming along roads and recreation trails in the road/trail right-of-way for continued access and line-of-sight safety.
- Mechanical vegetation clearing to maintain bare ground adjacent to Project buildings and structures.
- Mechanical removal on the crest and downstream face of dams to keep clear of woody vegetation and grasses, as required by FERC and California's Division of Safety of Dams, for dam safety.
- Mechanical maintenance of bare ground in recreation areas where bare ground currently occurs and is desired (e.g., spurs and tent pads).
- Felling of hazard trees due to immediate and imminent danger to facility or public (i.e., emergency).
- Other vegetation activities, including hazard tree mitigation, as approved by the Forest Service.

Prior to work being conducted in a sensitive area on NFS land, implementation of appropriate mitigations will be discussed at the annual meeting (GEN1). Prior to implementing routine vegetation management activities each year, YCWA is responsible for acquiring updated spatial data (e.g., GPS coordinates) of sensitive areas from the Forest Service. Section 5.0, Sensitive Area Protections, describes how effects to sensitive resources will be avoided or minimized.

On both NFS land and non-NFS land, YCWA conducts a variety of routine vegetation management activities, often driven by regulatory requirements. These measures ensure safe and continued Project operations. Routine vegetation management activities are enacted following BMPs, while protecting sensitive resources and preventing or minimizing the spread of NNIP. Routine vegetation management includes facility management, road maintenance and hazard tree felling.

On NFS land, YCWA's vegetation management will follow current Forest Service BMPs (e.g., per chapter 10 of the Soil and Water Conservation Handbook, Forest Service 2011). Each year YCWA and the Forest Service will confirm the most up to date version of these BMPs. YCWA's vegetation management on NFS land will also follow Project Activity Guidelines, as described in the *Fire Prevention and Response Plan*.

On non-NFS land, YCWA will follow county and state regulations and any BMPs required by applicable permits.

3.1 Facility Management

On both NFS land and non-NFS land, YCWA will routinely clear vegetation in the immediate vicinity of Project structures (e.g., powerhouses), recreation facilities and Primary Project Roads.²² On NFS land, clearing will be performed by mechanical means (e.g., chainsaws and weed whackers), unless otherwise approved by the Forest Service. Slash will be disposed of in one of three fashions: chipping, or lopping and scattering/piling (with Forest Service approval), or removal from the site. Branches may be cut into pieces no longer than 18 inches long and 8 inches in diameter and then piled; or lopped and scattered away from the site (to less than an 18 inch depth) at an approved location. Tree trunks may either be hauled away or cut into rounds and split in sizes no larger than 8 inches in diameter and 18 inches long for use.

If feasible, hazard tree clearing will be conducted in the late fall to remove the bulk of the trees ahead of the main recreation season. All freshly-cut conifer stumps, will be treated to prevent the spread of Heterobasidion Root Disease. Specific treatment methods for this root disease are described in Sections 3.2 and 3.5 (based on current Forest Service policy). YCWA will confirm these treatment methods each year with the Forest Service during discussions of vegetation management activities. Pesticide use will follow the provisions of Section 6.0 of this Plan.

California State law (California Public Resource Code, § 4291) shall be followed in regards to establishing an adequate clearing distance to all structures on both NFS land and non-NFS land.

3.2 Hazard Tree Management

For the purpose of this Plan, a "hazard tree" is a tree near a Project facility that YCWA proposes to fall because the tree is likely to fall under natural conditions within the foreseeable future, and when it falls under natural conditions, will pose a risk to the nearby Project facility, those members of the public using the Project facility, or Project operations staff maintaining the facility. Potential hazard trees may or may not be within the FERC Project Boundary. During the fall of each year, YCWA will assess all recreation facilities and Project roads for hazard trees, and when feasible, remove the hazard prior to December 31 of that year. Consultation with the Forest Service for these hazard trees will follow the provisions for non-emergency situations for hazard trees not discussed during the annual meeting, detailed below. When the removal of a hazard tree is required on NFS land, YCWA will contact the Forest Service to obtain permission prior to hazard tree removal.

²² Primary Project Roads are listed in the relicensing's *Transportation System Management Plan*.

In emergencies, YCWA is required to fell trees that are dead or dying and have a potential to fall on Project structures, such as recreation facilities, powerhouses, switchyards and public areas. Along roads, hazard tree removal is to be managed to 200 ft from the edge of road, with cut trees to fall away from the road and be left in place. Once identified, and if on YCWA land, a contractor will be hired to remove the tree or trees. If on land owned by others, except NFS land, YCWA will contact the landowner to review and reach agreement on the tree removal. The slash is typically chipped, while larger pieces are cut into manageable pieces and left adjacent to the site.

On NFS land, for planned tree removal that is not an emergency, YCWA shall provide information to the Forest Service, during the annual agency and tribes meeting, described in YCWA's proposed Condition GEN1 – Meet with Agencies and Indian Tribes Annually, or at other appropriate times. When the removal of the hazard trees is required on NFS land, the Forest Service will be contacted to obtain permission to have the tree removed and agree on any provisions of the removal.

On NFS land in non-emergency situations for hazard trees not discussed during the annual meeting, YCWA will notify the Forest Service to determine if a hazard tree should be felled and, if so, how to do so and if there are any necessary follow-up measures. Removal shall be approved by the Forest Service. Should any investigations be determined necessary by the Forest Service (e.g., special-status plant and cultural surveys), YCWA's qualified professionals will perform them prior to tree removal.²³ If sensitive resources are discovered, the guidelines for sensitive area protections in Section 5.0 will be followed; the hazard tree will be felled, and the cut vegetation will be disposed of in the manner described in Section 3.0.

Hazard trees are generally felled on an as-needed basis, except in emergency situations. If trees felled on NFS land within the FERC Project Boundary in a non-emergency also have the potential to affect sensitive resources on NFS land just outside the boundary, all of the measures in Section 5.0 of the Plan will be applied to protect those resources. Within 2 hours after a tree is felled, all freshly-cut conifer stumps greater than 3 inches diameter, will be treated to prevent the spread of Heterobasidion Root Disease. In no case shall stumps be left untreated at the end of the shift during which the tree was felled. Forest Service approved stump treatment compound, when applied properly, should cover the entire stump surface with a thin layer and also other areas of the stump where the bark has been knocked off. Where a liquid stump treatment compound is used, the spraying of a thin film of the solution on the stumps surface is all that is needed. All pesticide use will follow the provisions of Section 6.0 of this Plan.

YCWA will avoid stockpiling and subsequent removal of any fuels, slash, or debris from hazard tree removal within 1,000 feet of wetlands or aquatic features.

On NFS land, YCWA's emergency work is exempt from the restrictions imposed by limited operating periods (LOP). However, YCWA will consult with the Forest Service to ensure that routine management of hazard trees typically occurs outside of LOPs for special-status species.

²³ On NFS land, qualified professionals will be approved by the TNF or PNF, as appropriate.

Where it is not possible to implement the restrictions, YCWA will annually report the location and kinds of activities that were conducted within sensitive resource areas.

Hazard trees may also be identified by the Forest Service during their day-to-day work in the Project Area. These trees will be discussed with YCWA at the annual meeting, or sooner, if possible.

Figure 3.2-1 includes a flowchart of events for hazard tree management.

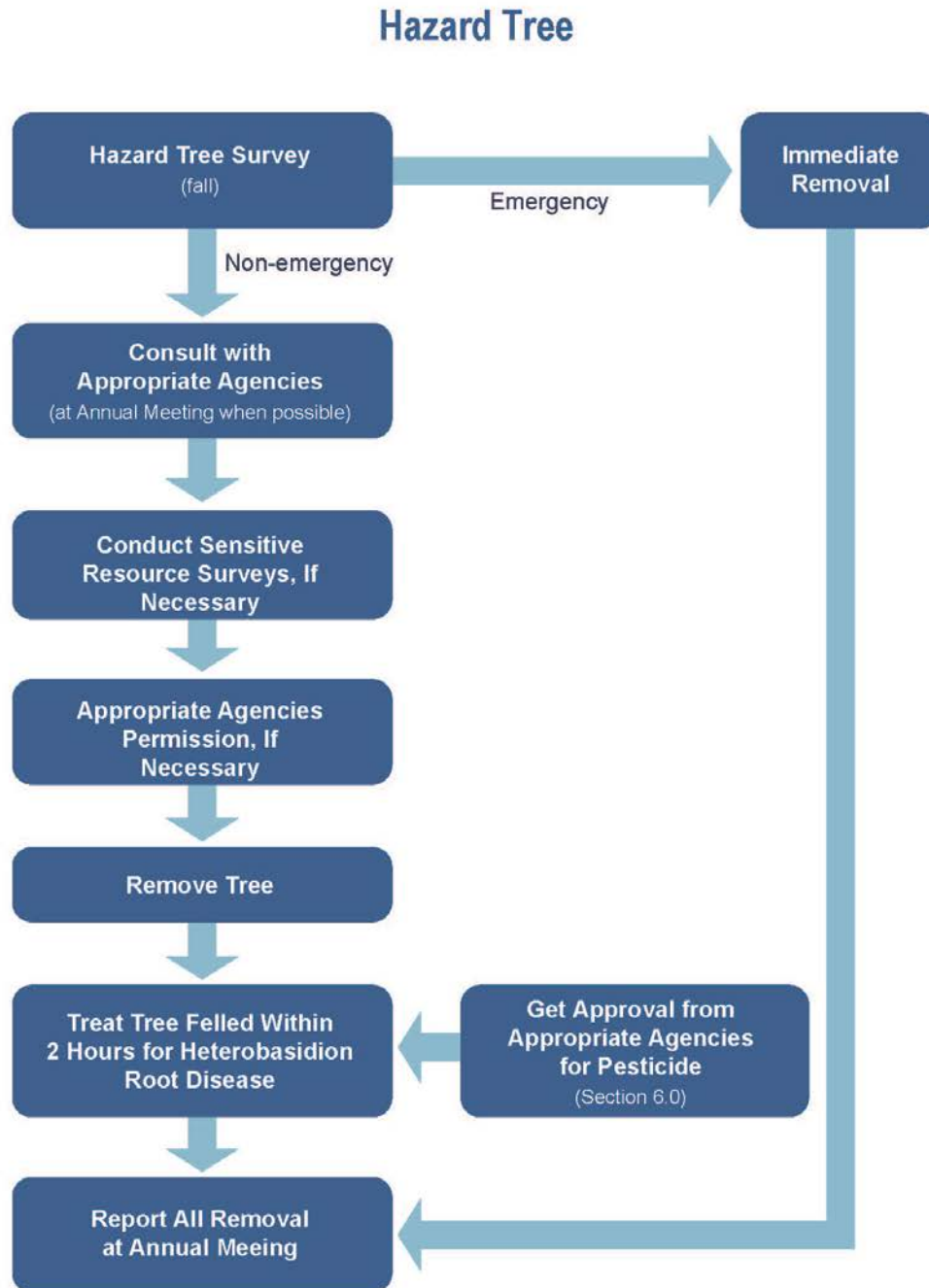


Figure 3.2-1. Hazard tree management flowchart of events.

3.3 Fuels Management

On NFS land, fuel treatment disposal methods may include chipping or lopping and scattering (with Forest Service approval, unless disposed of off of NFS land). These fuel treatment methods are applicable to YCWA's annual, routine vegetation management within the Project Area.

Larger fuel treatment projects that include merchantable timber on NFS land shall be handled separately under a Timber Sale Contract with specific provisions for fuel treatments. Treatments may include shaded fuel breaks, limbing, brush trimming, selective clearing around the perimeter of the site, and other agreed upon methods. Fuel treatments should be designed to be effective and long term maintenance should be considered in the initial design.

During fuels management activities, YCWA will also follow the relicensing [*Fire Prevention and Response Plan*] as it applies to NFS land and non-NFS land.

3.3.1 Fuel Breaks Around Campgrounds and Day Use Areas on NFS Land

On NFS land, YCWA will develop and annually maintain a 10-ft wide fuel break cleared of vegetation, annually, around all Project campgrounds and day use areas. During the development phase of new fuel breaks, the Forest Service will be notified and consulted to ensure prescription and placement criteria are met before new work begins. Trees will be limbed up to 9 ft in height along the edge of the break. This will include all campgrounds and day use areas, including any new facilities or existing facilities that do not currently have fuels mitigation measures in place. The fuel breaks will be reviewed during the annual recreation site visit to determine if Forest Service consultation is needed along the break.

3.4 Transportation System Maintenance

Vegetation along roads frequently grows into those roads, which then requires trimming. Roadside vegetation that is free of NNIP will be cut and/or mowed first to avoid spreading those undesired plants. Roadside vegetation that contains NNIP will be cut last, and equipment will be washed after cutting/mowing the NNIP and before it is used in another location, to reduce and/or prevent the spread of those NNIP. When areas of dense shrubs are cut, the cut shrubs will be chipped on site. On NFS land, no NNIP will be chipped. Because most NNIP grow best in full to partial sun, as much roadside shade as possible will be retained as a cultural preventative measure to reduce the vigor of existing NNIP infestations and/or reduce the risk of establishment of other NNIP.

When mulch is needed for erosion control during road maintenance activities on NFS land within the FERC Project Boundary, it will be certified weed-free. If weed-free mulch is not available, the Forest Service will be consulted. When mulch is needed to prevent NNIP establishment along roads, it will have high void spaces (i.e., long-fiber mulch), low water-holding capacity and be relatively deep (depending on the type of NNIP, a depth of 2-4 inches). Material from right-of-way clearing (i.e., road-side brushing) can be shredded to create long-fiber mulch, but

woody NNIP species, such as Scotch broom, will not be shredded and used as mulch. On NFS land, cut vegetation will be disposed of offsite, unless the Forest Service is consulted about onsite disposal.

Annual vegetation management along Primary Project and Recreation road edges is accomplished on non-NFS land with the use of herbicides by licensed herbicide applicators, and by mastication on Primary Project and Recreation roads located on NFS land, unless the Forest Service explicitly agrees to the use of herbicides. Vegetation clearing on NFS land should be 4 ft (horizontal) from the hinge of road and top of cut, and include clearing for line of sight as needed at road curves. When roadside vegetation management is needed on NFS land within the FERC Project Boundary, YCWA will ensure that equipment used to trim vegetation is free of vegetative material and soil before it is used, as described in the prevention measures in Section 2.1.

On NFS land, YCWA's vegetation management will follow Forest Service BMPs, (e.g., per chapter 10 of the Soil and Water Conservation Handbook Management Handbook, Forest Service 2011).

On NFS land, hazard tree management will follow the procedures described in Section 3.2.

Additional considerations may be needed when special-status plants and other sensitive resources are located along roads. Refer to section 5.0.

3.5 Recreation Site Management on NFS Land

At Project recreation sites located on NFS land within the FERC Project Boundary, vegetation management will be conducted with the goals of tree stand improvement, view enhancement and removal of hazard trees. The primary objective of the prescription is to create and maintain a natural environment (Forest Service Manual 2331.4). Vegetative planting will be done when needed for screening, to cover construction scars, provide shade, increase attractiveness, control erosion and to minimize noise (Forest Service Manual 2333.35).

At all Project-related recreation sites located on NFS land within the FERC Project Boundary, vegetation management activities include the removal of vegetation, hazardous branches, and hazard trees to facilitate recreation activities. During the fall of each year, YCWA will survey day use areas, campground boundaries, parking lots and immediate access routes to recreation areas for hazard trees and hazardous branches. Consultation with the Forest Service for these hazard trees will follow the provisions for non-emergency situations for hazard trees not discussed during the annual meeting, as detailed in section 3.2. Identified trees will be felled prior to December 31 of that year, if possible; if conditions warrant, an alternative timeline may be discussed with the Forest Service.

With Forest Service approval on NFS land, slash within recreation areas may be disposed of by one of the following methods: chipping, cutting into appropriate lengths for campers, or piling (for subsequent burning by the Forest Service), or removal from NFS lands. Branches may be cut into pieces no longer than 18 inches long and 8 inches in diameter and then piled for use by

campers; or lopped and scattered away from the recreation site (to less than an 18 inch depth) at an approved location. Tree trunks may either be hauled away or cut into rounds and split in sizes no larger than 8 inches in diameter and 18 inches long for use by campers.

If feasible, hazard tree clearing within recreation areas on NFS land will be conducted in the late fall to remove the bulk of the trees ahead of the spring camping rush. Stumps remaining within developed campgrounds may be no higher than 6 inches and preferably cut to ground level. Within 2 hours after the tree is felled, all freshly-cut conifer stumps greater than 3 inches in diameter, will be treated to prevent the spread of Heterobasidion Root Disease. In no case shall stumps be left untreated at the end of the shift during which the tree was felled. Forest Service approved stump treatment compound, when applied properly, should cover the entire stump surface with a thin layer and also other areas of the stump where the bark has been knocked off. Where a liquid stump treatment compound is used, the spraying of a thin film of the solution on the stumps surface is all that is needed. All pesticide use will follow the provisions of Section 6.0 of this Plan.

On NFS land, a 5-ft radius clearance to bare mineral soil around all fire rings will be maintained and overhanging branches will be removed to a height of 10 ft. This includes fire rings within developed Project recreation sites and those located at Project primitive sites.

During new construction and reconstruction work on NFS land, existing vegetation will be protected where possible.

SECTION 4.0

REVEGETATION

Revegetation is the process of reestablishing vegetation cover in disturbed areas and a standard component of construction, erosion control and site restoration. The main functions of revegetation are to conserve native plant resources, reduce loss of soil to erosion, combat invasive species, mitigate impacts of climate change, and maintain healthy forests and wildlife habitat. This section includes the following components:

- Areas subject to revegetation
- Methods of evaluating sites for revegetation
- Planning revegetation projects
- Monitoring revegetation projects to determine success
- Consulting with the appropriate Federal and State agencies on the planning and status of revegetation projects

On NFS lands, YCWA will consult with, and receive approval from, the Forest Service to accomplish the revegetation actions described in Sections 4.1 through 4.5. On non-NFS land, YCWA will follow applicable federal, State and county regulations, the relicensing [*Erosion Control Plan*] and the requirements of any specific permits and/or approvals pertaining to revegetation and consult with appropriate Federal and State agencies to implement revegetation actions described in Sections 4.1 through 4.5.

Figure 4.0-1 details the sequence of events for revegetation, which are described in sections 4.1 to 4.5 below.

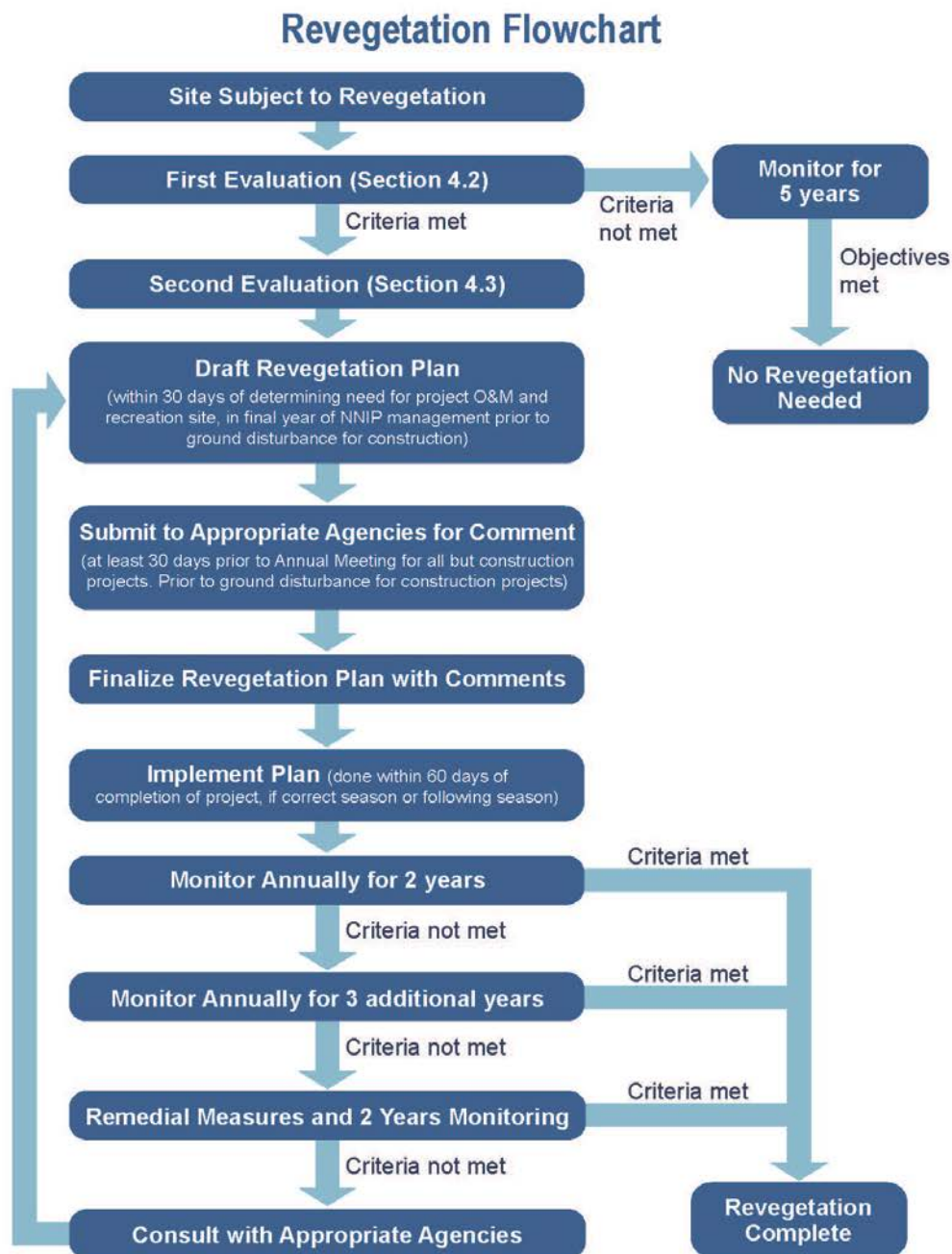


Figure 4.0-1. Revegetation flowchart of events.

4.1 Areas Subject to Revegetation

YCWA will evaluate areas within the FERC Project Boundary on a site-by-site basis to determine if revegetation is necessary or appropriate. In general, areas subject to revegetation include, but are not limited to:

- Areas over 0.5 ac treated for NNIP
- Construction sites and other areas subject to ground disturbance²⁴
- Sites subject to Project O&M, including improvements, erosion control, and disturbed areas that will not be paved or covered
- Areas that have become unvegetated due to recreation use – e.g., areas off of designated trails showing excessive erosion.

Sites that are subject to continual disturbance (e.g., berm roads), or where bare ground needs to be maintained (e.g., firebreak clearances), will not be subject to revegetation under this Plan. Soil cover in these areas will be achieved through other methods, such as covering the soil with mulch. In addition, YCWA will not be responsible for the restoration/revegetation of lands burned by a non-Project related fire. Sites subject to disturbances that are not Project-related will also not be revegetated.

4.2 Evaluating Sites for Revegetation

If a site is subject to revegetation, it will immediately be further assessed to determine size, percent vegetation cover, erosion potential and current plant community onsite and in the surrounding area. Once this assessment is completed, the following criteria will be used to determine if revegetation should occur:

- Native vegetation cover is less than or equal to 30 percent of the surface areas of the site, when compared to similar sites on adjacent undisturbed areas.
- For NFS lands, effective soil cover is below the minimum effective soil cover listed on page v-37 of the Tahoe National Forest Land and Resource Management Plan (Forest Service 1990) (Attachment C).
- Erosion is evident or there is a high potential for erosion.
- There is little possibility of natural revegetation from the surrounding plant communities, due to:
 - Slow rate of propagation and growth of nearby native species
 - Little or no evidence of successful reproduction of nearby native species
 - Low composition or cover of native species adjacent to the site
 - High percentage of NNIP adjacent to the site

²⁴ Ground-disturbing activities include excavating, digging, trenching, drilling, tunneling, auguring, backfilling, blasting, topsoil stripping, land leveling, blading and grading.

- Surrounding sites disturbed
- Surrounding sites with different native plant composition than site to be revegetated
- Soil compaction

If none of the criteria are met, then immediate revegetation at the site will be deemed unnecessary. Instead, YCWA will monitor the site annually for 5 years for percent vegetation cover and vigor, NNIP presence and evidence of erosion. If after 5 years the site has reached the following objectives, then the site will be considered successfully revegetated and no further actions will be initiated. If the site has not reached these objectives, then remedial actions will be developed and implemented. Objectives include:

- Native vegetation cover comprises more than 70 percent (terrestrial) or 90 percent (wetland/riparian) of the percent cover of native vegetation compared to similar sites in adjacent undisturbed areas, and on NFS lands, as agreed to with the Forest Service. For example, a terrestrial revegetation site surrounded by undisturbed areas of 40 percent native cover needs to reach 28 percent cover to meet the objective. A similar riparian site would need to reach 36 percent cover.
- No Target NNIP are present. Occasionally there may be circumstances where Target NNIP are present in the revegetated area and the revegetation is considered successful. When these circumstances occur, the Forest Service and California Department of Fish and Wildlife (Cal Fish and Wildlife) will be consulted.
- On NFS lands, effective soil cover meets the minimum effective soil cover listed in the table on v-37 of the Tahoe Land and Resource Management Plan (Forest Service 1990). Effective soil cover is all materials that will dissipate the energy of falling raindrops, including plant litter, duff, rock fragments, etc. (Attachment C).
- Desirable vegetation appears vigorous and self-sustaining. The plants have the opportunity to complete their annual life cycles. This objective will be evaluated by observing the size, color and vigor of the plants, and noting the presence of new growth shoots, flowers, seeds, litter build-up and seedlings.
- Adequate diverse vegetation is present. The site contains a mixture of native species similar to the adjacent undisturbed areas.

If one or more of these revegetation objectives are not achieved, revegetation planning as described in Section 4.3 will occur.

4.3 Revegetation Planning

For sites subject to Project O&M and areas that have become unvegetated due to recreation use, a revegetation plan will be developed immediately after (i.e., within 30 days, if feasible) revegetation of a site has been deemed necessary. For NNIP management areas, a revegetation plan will be developed during the last year of management within each NNIP treatment area. For new construction and ground-disturbance, revegetation needs will be assessed prior to ground-disturbance.

Building on the initial assessment in Section 4.2, the first step of the planning process will be a complete, site assessment, which will include:

- General site conditions, including slope, terrain, soils, land use, access proximity to water, and evidence of herbivory
- Proximity to Target NNIP occurrences
- Vegetation community specifics, including native species composition, richness and density, percent cover
- Site complexity, including the variety of landforms

Based on the complete site assessment, a revegetation plan will be developed that will include site-specific desired conditions, species to be planted, method(s) for revegetation, site design, soil treatment, success criteria, a monitoring plan, NNIP management strategies, a schedule of activities and remedial actions, as well as provisions for changes in and previously unknown conditions.

When possible (for NNIP management, Project O&M and recreation sites), the revegetation plan will be submitted to the Forest Service and other State and Federal Agency, as appropriate, 30 days prior to the annual agency and tribes meeting described in YCWA's proposed Condition GEN1 – Meet with Agencies and Indian Tribes Annually, to allow appropriate time for review. Agency comments on the plan will be discussed at the Annual Agency and Tribes Meeting and also provided to YCWA in writing for incorporation into the final revegetation plan. On NFS lands, revegetation plans for new construction will be provided to the Forest Service at least 30 days prior to commencement of construction activities and revegetation plans will be approved by the Forest Service, prior to implementation of the plan.

4.4 Revegetation Methods

Revegetation will begin with site preparation, including the breaking up of soils to reduce compaction and ease seeding and planting. At sites where compaction may be a problem, topsoil (i.e., the upper 12 inches of soil, when present) may be removed and salvaged in such a manner as to keep it usable for replanting. If it is to remain in place for longer than 1 month, topsoil will be stored in a manner that keeps the soil biota alive, maintains soil microbe health and prevents NNIP. In sites that are being seeded, seeding will take place a few days after topsoil is replaced. At some sites, amendments, such as compost or fertilizer, may need to be added to the soil. On NFS lands, the amendments will only be applied after approval by the Forest Service.

YCWA will use seed mixes that contain only native plant species and on NFS lands meet Forest Service standards. For small sites, YCWA will use a standard native and certified weed-free seed mix, which, on NFS lands will be annually reviewed by the Forest Service: the seed mixture should be a commercially-available product. For larger sites, standard or customized commercially-available seed mixes will be used, as detailed in the site-specific revegetation plans.

A mixture of seeding techniques may be used and will be spelled out in the revegetation plans. Seeding rates will be determined based on pure live seed methods and in a mixture to improve seeding success. Seeds should be covered not more than three times the thickness of the seed. Sites will be covered with certified weed-free mulch after seeding, and mulch will cover the surface through germination. If certified weed-free material is not available, the Forest Service and other State and Federal Agency, as appropriate, will be consulted.

Larger sites will typically be replanted with a mixture of native trees, shrubs and forbs. Species and planting decisions will be spelled out in revegetation plans, and may include, but is not limited to, commercially-available plants, plants grown from seed collection and salvaged plants.

Revegetation will occur as soon as possible after ground disturbance, during the appropriate season. Restoration and seeding of disturbed areas including topsoil piles and berms, will be completed within 60 days following completion of construction or ground-disturbing activities, if in the appropriate season or as soon as feasibly possible the next appropriate season.

4.5 Revegetation Monitoring

For revegetated sites, the site will be periodically monitored to evaluate success. When all site criteria are met, revegetation work will be deemed successful. A revegetation site will be monitored annually, for up to 5 years, or until criteria from revegetation plans are met and attained for a year (with a minimum of 2 years monitoring). If, after 5 years, success criteria are not met, remedial measures will be implemented. An additional 2 years of monitoring will follow the implementation of remedial measures. If, at the end of an additional 2 years of monitoring, success criteria are still not met, the site will be declared problematic and strategies to deal with the site will be developed in consultation with the Forest Service and other State and Federal Agency, as appropriate. Monitoring of revegetation work may include vegetation cover, species richness,²⁵ survivorship and native and invasive species counts. This information will be provided in detail in the site-specific revegetation plan.

²⁵ The number of species represented on the site.

SECTION 5.0

SENSITIVE AREA PROTECTIONS

YCWA will use multiple measures to protect sensitive areas during vegetation management within the FERC Project Boundary to ensure that adverse effects are avoided or minimized. YCWA will use multiple measures to modify treatments within sensitive areas during vegetation management within the FERC Project Boundary to address management concerns. For the purpose of the Plan, a sensitive area is considered:

- Areas with known historic properties as identified in the relicensing Historic Properties Management Plan and culturally significant plant species (Section 5.3).
- Areas with known Target NNIP occurrences.
- Areas with known special-status species. These species include: state and/or federally-listed threatened, endangered, proposed and/or candidate species for listing under the California Endangered Species Act (CESA) and/or the federal Endangered Species Act (ESA), California Species of Special Concern, California Fully Protected Species, and California Rare Plants. On NFS land, special-status species also include Forest Service Region 5 Sensitive Species, and TNF and PNF Watchlist Plants.
- Areas of sensitive habitat, such as riparian zones and wetlands.
- Other pre-determined areas with significant sensitive resources.

A combination of approaches will be used to avoid and minimize impacts to these sensitive resources and may include:

- Annual employee training for staff (employees and contractors), which will include information on recognition of special-status species, the location of existing occurrences of sensitive resources and areas to be avoided (see Section 7.0).
- Implementing buffers around sensitive areas.
- Flagging or fencing of sensitive areas with a site- and resource-specific buffer prior to any vegetation management activities, including Target NNIP, and removing the flagging when the work is complete.
- Emphasis on manual activities (such as hand-trimming or weed-whacking) where feasible, in sensitive areas.
- Where appropriate, manual treatments may be substituted for mechanical treatments to address management concerns.
- Following LOPs in areas with sensitive species.
- Following appropriate BMPs to protect sensitive areas (e.g., Cal-IPC 2012, Forest Service 2011).

- Conducting surveys to determine the presence of special-status species and their habitat (per Section 5.1 of this Plan and provisions of other appropriate FERC Project plans and measures).
- If any previously undocumented, special-status species and other sensitive resources are located during vegetation management planning or implementation on NFS land within the FERC Project Boundary, YCWA will promptly notify the Forest Service, the Cal Fish and Wildlife and the United States Fish and Wildlife Service (USFWS), as appropriate. Sensitive area protection measures may be updated as new special-status species occurrences or historic properties are documented by YCWA, the Forest Service, Cal Fish and Wildlife, and/or USFWS.

This section provides protection measures, including recommended LOPs for sensitive resources (i.e., special-status species, cultural resources), potentially affected by the Project's vegetation management activities. Using species occurrence information from the Forest Service, USFWS, Cal Fish and Wildlife, and other available sources, sensitive resources will be mapped to 2 miles from proposed vegetation activities to facilitate evaluation of potential Project effects.

YCWA's emergency work is exempt from the restrictions imposed by the LOPs on NFS land. However, on NFS land, YCWA will work with the Forest Service to ensure that routine vegetation management occurs proactively and LOPs are implemented when possible. Where it is not possible to implement LOPs on NFS land within the FERC Project Boundary, YCWA will report the location and kinds of activities that were conducted within sensitive resource areas during the annual agency and tribes meeting specified in YCWA's proposed Condition GEN1 – Meet with Agencies and Indian Tribes Annually. On private lands, YCWA will coordinate with appropriate agencies per California Environmental Quality Act (CEQA) and other applicable laws.

5.1 Special-Status Plants

Occurrences of special-status plants are designated as special areas. YCWA will use multiple measures to reduce or eliminate impacts to special-status plants during vegetation management within the FERC Project Boundary (refer to Section 5.0). Management requirements for vegetation treatments within special-status plant sensitive areas within the FERC Project Boundary will be discussed and agreed to at the annual agency and tribes meeting specified in YCWA's proposed Condition GEN1 – Meet with Agencies and Indian Tribes Annually. Site specific management requirements vary by plant species and location/existing condition of the vegetation management project area. YCWA will consult with the Forest Service and Cal Fish and Wildlife to determine appropriate mitigation measures when YCWA is conducting vegetation management activities in areas with special-status plants. In addition to protection measures for special-status plant species detailed in Section 5.0, follow-up surveys for special-status plants will also occur. In the first full calendar year following issuance of the new license and then once every 10 years, YCWA will conduct surveys for special-status plants at Project facilities, including Primary Project roads and recreation areas, within the FERC Project Boundary (Attachment A). In areas where the FERC Project Boundary around Project facilities does not include the 200 ft potentially necessary for hazard tree management, surveys will

extend the additional area outside of the FERC Project Boundary, where safely accessible. Surveys will be discontinued for any plant species that is no longer listed as state and/or federally threatened, endangered, rare, proposed and/or candidates for these listings or no longer sensitive or on the TNF and/or PNF Watchlists. New plant species may be added as a result of updates to the lists of state and/or federally threatened, endangered, rare, proposed and/or candidate species, and/or Forest Service sensitive and Watchlist species. During each 10-year special-status plant survey effort, previously-documented special-status plant occurrences on Project lands will be relocated for monitoring purposes. Monitoring efforts will collect data required to meet Cal Fish and Wildlife and Forest Service standards. This will include the mapping of special-status plant occurrence boundaries and documentation of NNIPs.

On NFS lands, any special-status plant occurrences found to contain NNIPs will be monitored annually for 3 years after detection to track the boundaries of the special-status plants and NNIP occurrences. All survey and monitoring results will be presented to the Forest Service during the annual reporting efforts and may be used to develop or collaboratively refine resource protection measures (Attachment D).

On private lands, YCWA will conduct surveys for state-designated special-status plants using current Cal Fish and Wildlife protocols.²⁶ State-designated special-status plants include plant species that meet one or more of the following criteria:

- Listed or proposed for listing or candidates for future listing as threatened or endangered under the ESA
- Listed or candidates for listing as threatened or endangered under the CESA
- Listed as rare under the California Native Plant Protection Act
- Meet the definition of rare or endangered under (CEQA) Section 15380(b) and (d)²⁷
- Considered locally significant species pursuant to CEQA Section 15125(c) or CEQA Guidelines, Appendix G

When a special-status plant is located on NFS or non-NFS lands, surveyors will complete and submit to the California Natural Diversity Database a California Native Species Field Survey Form, accompanied by a copy of the relevant portion of a 7.5 minute topographic map with the occurrence mapped and GPS coordinates of the occurrence in both map and digital format. YCWA will also develop and submit to Cal Fish and Wildlife a botanical field survey report that includes all of the information listed in current Cal Fish and Wildlife protocols for providing a detailed description of survey methodology and results. The collected survey data and report will be shared with the USFWS, as well as the Forest Service, so that it may be input into the Forest Service GIS database.

²⁶ Standard Cal Fish and Wildlife protocols currently (as of 2015) require a full floristic survey, which is the identification and compilation of a list of all plants seen during surveys.

²⁷ The definition provides that plants or animals already listed by a governmental agency as being rare or endangered shall be presumed rare or endangered for the purposes of CEQA.

5.2 Riparian, Wetlands, and Littoral Zones

Riparian zones and wetlands are designated as special areas. To reduce impacts in riparian zones and wetlands during routine Project vegetation management activities, YCWA will implement the following in these areas:

- An equipment exclusion zone off roads within 100 ft of perennial streams or permanent bodies of water and 50 ft of intermittent streams and ponds, unless otherwise coordinated with the Forest Service (on NFS lands) and Cal Fish and Wildlife.
- In a riparian zone (except for the 100-ft buffer around New Bullards Bar Reservoir), outside of the Administrative Site and recreation facilities, large woody material will be left on site unless it creates a safety risk or the Forest Service (on NFS lands) determines it poses an unacceptable fire risk.
- Within 100 ft above the high water line of New Bullards Bar, when felling hazard trees, the root mass and stump will be left 4 to 6 ft above the ground surface, provided it does not compromise public or worker safety, to provide perching structure for bald eagles (*Haliaeetus leucocephalus*).
- To the extent feasible, and except as otherwise needed for safe trail access, road maintenance and dam safety, native vegetation removal will be minimized in wetland, riparian or littoral zones.

5.3 Culturally Significant Plants

Occurrences of culturally significant plants are designated as special areas. Within 60 days of license issuance, YCWA will send a letter to federally-recognized tribes that participated in the relicensing requesting a list of rare, culturally significant plant species that the tribes wish to be protected within the FERC Project Boundary. Rare, culturally significant plants will be protected per the methods outlined in Section 5.0 during vegetation management, to ensure that adverse effects are avoided or minimized. YCWA will treat this list and any known locations of these rare, culturally significant plants as Privileged information. YCWA will consult with the Forest Service and tribes to determine appropriate mitigation measures when YCWA is conducting vegetation management activities in areas with culturally significant plants.

5.4 Historic Properties

Vegetation management activities will emphasize avoidance of historic properties (i.e., cultural resources that are listed on or eligible for listing on the National Register of Historic Places) and potential historic properties (i.e., cultural resources that have not yet been evaluated for the National Register of Historic Places). All areas where vegetation management activities are proposed to occur should be subjected to a cultural resource survey if such areas have not already been adequately surveyed. If the proposed vegetation management activities are not exempt from further review, pursuant to Section 6.2 of the Licensee's *Historic Properties Management Plan* (HPMP), the proposed activities will follow the procedures laid out in Section 6.3 of the HPMP and will be reviewed by a Cultural Resource Specialist (CRS). The CRS will assess the

potential for adverse effects to historic properties as a result of activities prior to implementation. As specified under the HPMP, a combination of approaches will be used to avoid or minimize impacts to historic properties and potential historic properties and can include:

- Annual employee training for staff (employees and contractors), as defined in the HPMP, which will include information on recognition and management of historic properties.
- Flagging or fencing of historic properties locations prior to and during vegetation management activities, with the removal of flagging or fencing after the work has been completed.
- Implementing protective buffers around sensitive historic properties.
- Notification to key staff and operators regarding the confidential location of historic properties within or adjacent to a proposed vegetation management activity area.

For screened undertakings (outlined in Section 6.3 of the HPMP), utilizing standard protection measures, some project activities may be implemented within and around historic properties following review by the CRS. These are specified below:

- Hazardous trees may be trimmed or felled along roadways, within recreation areas, or near Project facilities, provided they are left in place or cut up with hand tools, including chain saws, and the wood removed by hand. If this activity is to occur within the boundaries of or within 30 meters of a historic property, an archaeological monitor must be present for the duration of the tree cutting/trimming and removal activities. Limbs and associated debris can be chipped into a vehicle and removed.
- Linear sites (e.g., historic trails, roads, ditches) may be crossed at existing breaches or at a point where their features or characteristics clearly lack historic integrity. The decision for the location of a new crossing will include any buffer zone related to setting, they will also be located at a point where the locale does not contribute to site eligibility or values, as previously identified and concurred upon by the State Historic Preservation Officer. These areas will be identified by the CRS.
 - Crossings are not to be made at the points of origin, intersection, or terminus of linear site features.
 - Crossings are to be made perpendicular to linear site features.
 - The number of crossings is to be minimized by project and amongst multiple projects in the same general location.
 - The remainder of the linear site is to be avoided, and traffic is to be clearly routed through designated crossings.

5.5 Special-Status Wildlife Species

YCWA will implement protection measures, including LOPs and work buffers, to reduce or avoid impacts to special-status wildlife species, while conducting vegetation management activities described in this Plan within the FERC Project Boundary. Protection measures are

described for each special-status wildlife species below. Some Project activities may be exempt from the restrictions imposed by the protection measures, for example emergency work that includes, but is not limited to, dam failure; employee injury; powerhouse goes off-line; repairs to facilities caused by storms, fire, etc. However, YCWA will notify the Forest Service (on NFS lands), USFWS, and Cal Fish and Wildlife, as appropriate, within 48 hours of commencement of Project activities that require suspension of protection measures.

YCWA will implement the following protection measures for special-status wildlife species unless otherwise approved through the consultation with the Forest Service (on NFS lands), Cal Fish and Wildlife and USFWS, as appropriate.

Northern goshawk (*Accipiter gentilis*): To protect Northern goshawks during the breeding season, YCWA will implement a LOP within a buffer that includes the Protected Activity Centers (PAC), plus an additional 0.25-mile area around the PAC during the breeding season of February 15 through September 15. If sufficient information exists regarding the location of the nest or activity center, or surveys confirm that Northern goshawks are not nesting, the LOP and/or buffer may be adjusted. Prior to implementing activities within or adjacent to Northern goshawk PACs, where the location of the nest site or activity center is uncertain, YCWA will conduct surveys to establish or confirm the location of the nest or activity center. Where surveys have not been conducted, the LOP will be extended to cover the unsurveyed suitable habitat.

American peregrine falcon (*Falco peregrinus anatum*): To protect American peregrine falcons during the breeding season, YCWA will implement a LOP from January 1 through August 15 within the following buffers. For routine Project vegetation management activities that are limited to human encroachment, a buffer of 0.5-mile around nest sites will be established. For routine Project vegetation management activities that include the use of a helicopter or other aircraft, blasting, chain saws, and other similar loud noises, a buffer of 1-mile around nest sites will be established. LOPs, buffers, and other protective measures (e.g., surveys) will be implemented as described in the *Bald Eagle and American Peregrine Falcon Management Plan*.

Bald eagle (*Haliaeetus leucocephalus*): To protect bald eagles during the breeding season and their wintering sites, YCWA will implement LOPs from January 1 through August 31 and November 15 through March 15, respectively, within the following buffers. For routine Project vegetation management activities that are limited to human encroachment, a buffer of 0.25-mile around nest sites and winter foraging and roost sites will be established. For routine Project vegetation management activities that include the use a helicopter or other aircraft (except for surveys), blasting, chain saws, and other similar loud noises, a buffer of 1-mile around nest sites and winter foraging and roosts sites will be established. LOPs, buffers, and other protective measures (e.g., surveys) will be implemented as described in the *Bald Eagle and American Peregrine Falcon Management Plan*.

Osprey (*Pandion haliaetus*): To protect ospreys during the breeding season, YCWA will implement a LOP from March 15 to August 31 within a buffer of 0.25-mile around nest sites.

California spotted owl (*Strix occidentalis occidentalis*): To protect California spotted owls during the breeding season, YCWA will implement a LOP within a buffer that includes the PAC,

plus an additional 0.25-mile area around the PAC during the breeding season of March 1 through August 15. If sufficient information exists regarding the location of the nest or activity center, or surveys confirm that California spotted owls are not nesting, the LOP and/or buffer may be adjusted. Prior to implementing activities within or adjacent to California spotted owl PACs, where the location of the nest site or activity center is uncertain, YCWA will conduct surveys to establish or confirm the location of the nest or activity center. Where surveys have not been conducted, the LOP will be extended to cover the unsurveyed suitable habitat.

Great gray owl (*Strix nebulosa*): To protect great gray owls during the breeding season, YCWA will implement a LOP from March 1 through August 15 within a buffer that includes the PAC, plus an additional 0.25-mile area around the PAC. If sufficient information exists regarding the location of the nest or activity center, or surveys confirm that great gray owls are not nesting, the LOP and/or buffer may be adjusted. Prior to implementing activities within or adjacent to great gray owl PACs, where the location of the nest site or activity center is uncertain, YCWA will conduct surveys to establish or confirm the location of the nest or activity center. Where surveys have not been conducted, the LOP will be extended to cover the unsurveyed suitable habitat.

Great blue heron (*Ardea herodias*): To protect great blue heron rookeries during the breeding season, YCWA will implement a LOP from March 15 to July 31 within a buffer of 0.25-mile around rookeries.

Other breeding birds: To protect species of breeding birds not listed above, YCWA will avoid vegetation removal during the general breeding bird season of February 1 through August 31. If vegetation removal cannot be avoided during this time period, YCWA will conduct a focused survey for active nests within the area proposed for vegetation removal, plus a 500-ft buffer, within 5 days of commencement of vegetation removal activities. If no breeding raptors or special-status bird species and/or their nests are found within 500 ft of the work area and no other breeding birds (non-special-status species) and/or their nests are found within 250 ft of the work area, vegetation removal may proceed. If any breeding birds and/or their nests are found within the survey areas described above, YCWA will consult with the Forest Service (on NFS lands), Cal Fish and Wildlife, and USFWS, as appropriate, prior to commencing any vegetation removal activities. Breeding bird survey results will be submitted to the above agencies for review via electronic mail within 5 days of completion and prior to commencing work.

Special-status amphibians: To protect breeding California red-legged frogs (*Rana draytonii*; CRLF) and foothill yellow-legged frogs (*Rana boylei*, FYLF), YCWA will avoid conducting routine vegetation management activities within 300 ft of breeding sites without prior coordination with the Forest Service, Cal Fish and Wildlife and USFWS, as appropriate. YCWA will implement best management practices when conducting vegetation management activities within 300 ft of unsurveyed/unoccupied streams. Any pesticide use that is deemed necessary to use on NFS lands within 500 ft of known locations of CRLF or FYLF, will be designed to avoid adverse effects to individuals and their habitats. YCWA will be responsible for conducting appropriate monitoring of these populations, as determined by the Forest Service (on NFS lands), if pesticides need to be used within 500 ft of a known occurrence of a CRLF and/or FYLF. Pesticide use within 260 ft of aquatic features (e.g. river, stream, lake, impoundment, and floodplain) is generally prohibited. If YCWA proposes to use pesticides within 260 ft of aquatic

features, for Project safety purposes, prior coordination with the Forest Service, Cal Fish and Wildlife and USFWS, as appropriate, is required.

Western pond turtle (*Actinemys marmorata*): Western pond turtles are known to occur throughout the Project; however, nesting sites have not been identified to date. Should these sites be identified in the future, YCWA will coordinate with the Forest Service (on NFS lands) and Cal Fish and Wildlife to determine appropriate protection measures.

Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*): Prior to any vegetation disturbance at an elevation of 500 ft or below, per current USFWS guidelines (USFWS 2017), YCWA will conduct surveys for elderberry plants [*Sambucus* spp.] within 165 feet of the activity area and consult with the USFWS if elderberry plants with stems 1 inch or greater in diameter are found, to determine if additional protective measures are necessary.

SECTION 6.0

PESTICIDE USE

Over the term of the New License, YCWA will consult with the Forest Service regarding the use of pesticides on NFS land, as described in YCWA's proposed Condition GEN4 Pesticide Use Restrictions. Consultation activities will include an annual agency and tribes meeting, as described in YCWA's proposed Condition GEN1 – Meet with Agencies and Indian Tribes Annually.

Currently, YCWA does not apply pesticides on NFS land. Pesticides may not be used on NFS land or in areas affecting NFS land to control undesirable woody and herbaceous vegetation, aquatic plants, insects, rodents, non-native fish, etc., without the prior written approval of the Forest Service. During the annual meeting described in YCWA's proposed Condition GEN1 – Meet with Agencies and Indian Tribes Annually, YCWA shall submit a request for approval of planned uses of pesticides for the upcoming year. YCWA shall provide at a minimum the following information essential for review:

- Whether pesticide applications are essential for use on NFS land;
- Specific locations of use;
- Specific pesticides proposed for use;
- Application rates;
- Dose and exposure rates; and
- Safety risk and timeframes for application.

Exceptions to this schedule may be allowed only when unexpected outbreaks of pests require control measures that were not anticipated at the time the report was submitted. In such an instance, an emergency request and approval may be made.

Any pesticide use that is deemed necessary to use on NFS land within 500 ft of known locations of Western pond turtles, Sierra Nevada yellow-legged frog (*Rana sierrae*), FYLF, or known locations of Forest Service special-status or culturally significant plant populations will be designed to avoid adverse effects to individuals and their habitats. Application of pesticides must be consistent with Forest Service riparian conservation objectives.

On NFS land, YCWA shall only use those materials registered by the federal Environmental Protection Agency and consistent with those applied by Forest Service and approved through Forest Service review for the specific purpose planned. YCWA must strictly follow label instructions in the preparation and application of pesticides and disposal of excess materials and containers. YCWA shall submit Pesticide Use Proposal(s) (FS 2100-2, Attachment E) with accompanying risk assessment and other Forest Service required documents to the TNF or PNF Pesticide Use Coordinator, as appropriate. These forms are typically submitted annually. The Forest Service may allow longer approval periods depending on the specific proposed pesticide

use (e.g., for stump treatments to reduce Heterobasidion Root Disease, pesticide use approval may cover a three year time period). Any herbicides applied within or adjacent to any river, stream, lake, impoundment, and/or associated riparian habitat and/or floodplain shall be registered for aquatic use by the California Department of Pesticide Regulation.

A National Pollutant Discharge Elimination System permit (Regional Water Quality Control Board) may be required for any use of pesticides in our near water bodies. Water quality monitoring may be required by either the State or Federal permits.

6.1 Pesticide Use on Non-NFS Lands

YCWA will report all pesticide use on non-federal lands as required under state and federal regulations.

On non-federal lands within the FERC Project Boundary, pesticides will only be applied by State-certified applicators in Project areas. YCWA will typically apply herbicides in spring at Project facilities and roads located on private land. Table 6.1-1 summarizes YCWA's herbicide use on non-federal lands in 2012, a typical year.

Table 6.1-1. Location, types and amounts of herbicides applied to non-federal land by Yuba County Water Agency for the Yuba River Development Project in 2012.

Facility Where Applied	Herbicide							
	Hoss Ultra®	Garlon® 3A/4	Surflan®	Roundup®	Goal®	Milestone™	Oust®	Telar®
	Liquid (gal) ¹	Liquid (gal) ¹	Liquid (gal) ¹	Liquid (gal) ¹	Liquid (gal) ¹	Liquid (oz) ²	Solid (oz) ²	Solid (oz) ²
New Colgate Right-of-Way	5	32.5	25	35	30	190	48	12
Narrows 2 Access Road	--	--	5	5	5	--	--	--

¹ gal = gallons

² oz = ounces

SECTION 7.0

ANNUAL EMPLOYEE TRAINING

Each year during the term of the license YCWA will provide for Annual Employee Training for O&M staff that is scheduled at that time to work that calendar year within the FERC Project Boundary. The training will include a NNIP component that emphasizes YCWA's policies on NNIP, as well as the prevention guidelines listed below. In particular, employees will receive training on the location of known occurrences and identification of Target NNIP known to occur in the FERC Project Boundary. Any new Target NNIP from CDFA or Forest Service lists will be added to the training. The NNIP component of annual environmental training will include, at minimum:

- YCWA's NNIP policy and NNIP prevention guidelines, as identified in this Plan, with emphasis on prevention of spread of existing occurrences (including guidelines that address vehicle use off roads and within known infestations) and early detection with rapid treatment.
- Environmental impacts of NNIP.
- Recognition of Target NNIP (Education and prevention measures will be reviewed and adjusted, as needed, to ensure that employees have received the proper training.) to help prevent spread and to facilitate early detection and rapid treatment. Note: Project O&M staff are not expected to be experts in plant identification or to perform plant surveys. However, the training is provided to help them recognize Target NNIP should they encounter them.
- Location of existing NNIP occurrences and guidelines for management activities in those areas.
- NNIP reporting procedures.

Employees will receive training on the location of known sensitive areas. The sensitive area component of the annual environmental training will include:

- Areas of sensitive habitat, such as riparian zones and wetlands, and guidelines for conducting project activities within those areas.
- Location of known special-status and culturally significant plant species.
- Information on recognition and management of cultural resources. Discussion of needed protection measures for newly discovered cultural resource sites; discussion of this topic is subject to appropriate confidentiality and privilege rules and limits.
- Location of known sensitive wildlife areas and LOPs and buffers in those areas.
- Other pre-determined areas with significant sensitive resources.
- Guidelines for routine vegetation management within sensitive areas in the FERC Project Boundary, including adjacent to facilities, along Project roads and in recreation sites (as described in Section 5.0).

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SECTION 8.0

REPORTING, CONSULTATION AND PLAN REVISIONS

8.1 Consultation and Permitting

Each year during the term of the license, YCWA shall arrange to meet with the Forest Service for an annual meeting to discuss vegetation management activities on NFS land within the FERC Project Boundary. It is the intent that this meeting will occur in conjunction with the annual agency and tribes meeting, as described in YCWA's proposed Condition GEN1 – Meet with Agencies and Indian Tribes Annually. As part of the meeting, YCWA shall note any changes from the previous year that YCWA is aware of to the CDFA weed list, and/or the TNF's and PNF's lists and current management directions. YCWA shall also note any changes from the previous year that YCWA is aware of, in regards to the TNF and/or PNF special-status plant lists (threatened, endangered, proposed, sensitive and/or Watchlist). Information will also be shared regarding locations of new Target NNIP infestations and/or new special-status plant occurrence locations. YCWA will consult, as needed, with appropriate agencies regarding vegetation management activities on private land.

Beginning the second full calendar year of license implementation and at least 30 days prior to the annual agency and tribes meeting described in YCWA's proposed Condition GEN1 – Meet with Agencies and Indian Tribes Annually, YCWA will prepare maps showing the locations of any planned activities on NFS land in proximity to special-status species, within known NNIP infestations, and other sensitive resource locations.

If changes to YCWA's planned activities on NFS land occur after it has provided the planned activities maps to the Forest Service, YCWA will contact the Forest Service for approval prior to implementation. If YCWA becomes aware of new information regarding Target NNIP locations and special-status species on NFS land within the FERC Project Boundary, YCWA will notify the Forest Service, within 30 days of discovery. YCWA will consult, as needed, with appropriate agencies regarding Target NNIPs. The previous year's Target NNIP treatment report will also be discussed. When revegetation is identified as needed, either as a component for Target NNIP treatment or at a work site on NFS land within the FERC Project Boundary, the appropriate seed mix, mulch, and/or fill will also be discussed.

During the annual agency and tribes meeting, described in YCWA's proposed Condition GEN1 – Meet with Agencies and Indian Tribes Annually, YCWA will also discuss the location and extent of any emergency activities (e.g., emergency removal of imminent hazard trees) that involved disturbance within sensitive areas located on any known sensitive area on NFS land, especially including the use of machine-powered equipment within sensitive biological resources areas on NFS land that otherwise would have followed a LOP. Other management activities and updates on NFS land will also be discussed, including acres treated, type of treatment and other applicable information.

Vegetation activities conducted by YCWA within the FERC Project Boundary as described in this Plan, including routine vegetation management activities related to O&M and NNIP

management, that occur in the riparian vegetation associated with the bed, channel, or bank of any river, stream, or lake or the floodplain of a body of water, may be subject to California Fish and Game Code Sections 1600 et seq. Pursuant to Sections 1602 and 1603 of California Fish and Game Code, YCWA is required to notify Cal Fish and Wildlife and may need to obtain an agreement from Cal Fish and Wildlife prior to conducting vegetation activities in the areas described above within the FERC Project Boundary.

8.2 Reporting

In years without activities listed below, YCWA shall share at the annual agency and tribes meeting, described in YCWA's proposed Condition GEN1 – Meet with Agencies and Indian Tribes Annually, information with the Forest Service about any newly discovered Target NNIP, special-status plants, and/or culturally significant plants on NFS land within the FERC Project Boundary.

8.2.1 Years in which Pesticides Are Used

By September 30 of each year in which pesticides are used on NFS land, YCWA will provide to the TNF or PNF, as appropriate, a report of pesticide applications on NFS land within the FERC Project Boundary conducted from October 1 of the previous year to September 30 of the current year; including any Target NNIP treatments that include pesticide application. The report will attach the completed Pesticide Use Proposal Form (e.g., FS-2100-2) (Attachment F) and approval letter, as well as include the following information: maps of locations where pesticide applications occurred with GPS spatial and attribute data collected in the field and entered into a GIS geodatabase, name of chemicals used, application rate, amount applied, acres treated, and any other applicable information, such as use of pesticides within 500 ft of known sensitive amphibian locations, within buffers for special-status plant species, or within culturally significant areas. If no pesticides application on NFS land occurred in the previous calendar year, YCWA does not need to provide a report to the Forest Service.

8.2.2 Years in which NNIP and/or Special-status Plants Surveys and/or Monitoring Occurs

When YCWA conducts surveys for NNIP and/or special-status plant species or monitors known occurrences on NFS land, a draft report will be prepared and submitted to the Forest Service and Cal Fish and Wildlife 30 days prior to the annual agency and tribes meeting, described in YCWA's proposed Condition GEN1 – Meet with Agencies and Indian Tribes Annually, in those years when monitoring was conducted. The report will describe survey and/or monitoring results by species, location, population size and note any changes or trends. The report will include GPS spatial and attribute data collected in the field and entered into a GIS geodatabase. The information will describe survey results by species, location, population size, and note any changes or trends. If no surveys or monitoring on NFS land occurred in the previous calendar year, YCWA does not need to provide a report to the Forest Service.

8.2.3 Years in which Target NNIP are Treated

In years when Target NNIP are treated on NFS land, information on NNIP treatments will be provided to the Forest Service. The information will include:

- Name and number of species of NNIP treated
- Treatment method, including, for chemical management, application rate and amount applied
- Acres treated for manual, mechanical and chemical
- Map of area(s) treated
- Proposed future treatments
- Analysis of treatment efficacy
- Proposed recommended changes to the treatment strategy
- Any other applicable information

8.2.4 Years in which Vegetation Activities Occur

As outlined in proposed measure GEN1 – Meet with Agencies and Indian Tribes Annually, YCWA will provide the Forest Service with a list of maintenance activities planned on NFS land for the upcoming year by December 31. YCWA will also provide to the Forest Service a report on all vegetation activities (i.e., clearing) that occurred on NFS land during the current calendar year and are planned for the next. As noted in Section 8.2.2, the report will include results of surveys performed on NFS land, including information on occurrences of NNIP and special-status plant discovered during those surveys, in those years when surveys are done.

8.2.5 Years in which Revegetation Monitoring Occurs

In years when revegetation monitoring occurs on NFS land, YCWA will report on the revegetation monitoring results from the most recent year, including a comparison with the previous year's results, where applicable.

8.2.6 Years in which Routine O&M/Emergency/Planned Activities Impact Sensitive Areas

In years when routine O&M, emergency or planned activities impact resources located within sensitive areas on NFS land within the FERC Project Boundary, YCWA will provide to the Forest Service and Cal Fish and Wildlife a report including the following information, as applicable:

- Name and number of species impacted
- Treatment method implemented within the sensitive areas
- Map of area(s) impacted

- Proposed future monitoring of impacts
- Any other applicable information

As per proposed measure GEN6, if YCWA finds that disturbance within a sensitive area located on NFS land is unavoidable; YCWA will consult with the Forest Service and Cal Fish and Wildlife to jointly develop mitigations that minimize adverse effects to the sensitive resource.

8.3 Plan Revisions

YCWA, in consultation with the Forest Service for NFS land and Cal Fish and Wildlife within the FERC Project Boundary, will review, update, and/or revise the Plan as needed when significant changes in the existing conditions occur. Changes or revisions to the Plan would be expected if conditions change, as a result of unforeseen effects, either from new or existing Project-related activities or from natural events, changes to CDFA's weed list, or the TNF's NNIP or PNF's Noxious Weed list and current management directions. Changes may also be implemented if monitoring feedback indicates that resource objectives are not being met. Sixty days will be allowed for the Forest Service to provide written comments and recommendations before YCWA files the revised Plan with FERC for FERC's approval. YCWA will include all relevant documentation of coordination and consultation with the revised Plan filed with FERC. If YCWA does not adopt a particular recommendation by the Forest Service, the filing will include the reasons for not doing so, based on Project-specific information. YCWA will implement the Plan as approved by FERC.²⁸

²⁸ The Plan will not be considered revised until FERC issues its formal approval.

SECTION 9.0

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Integrated Vegetation Management Plan

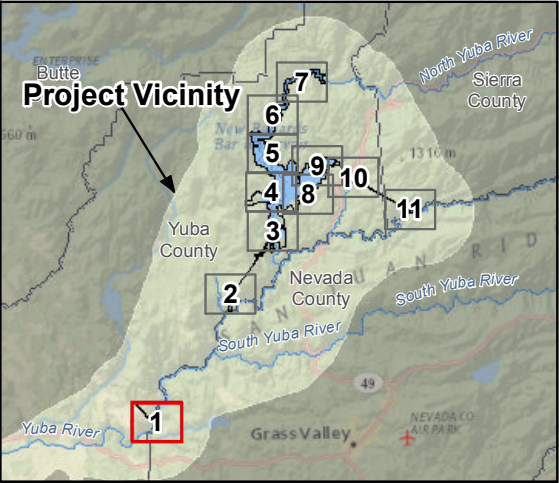
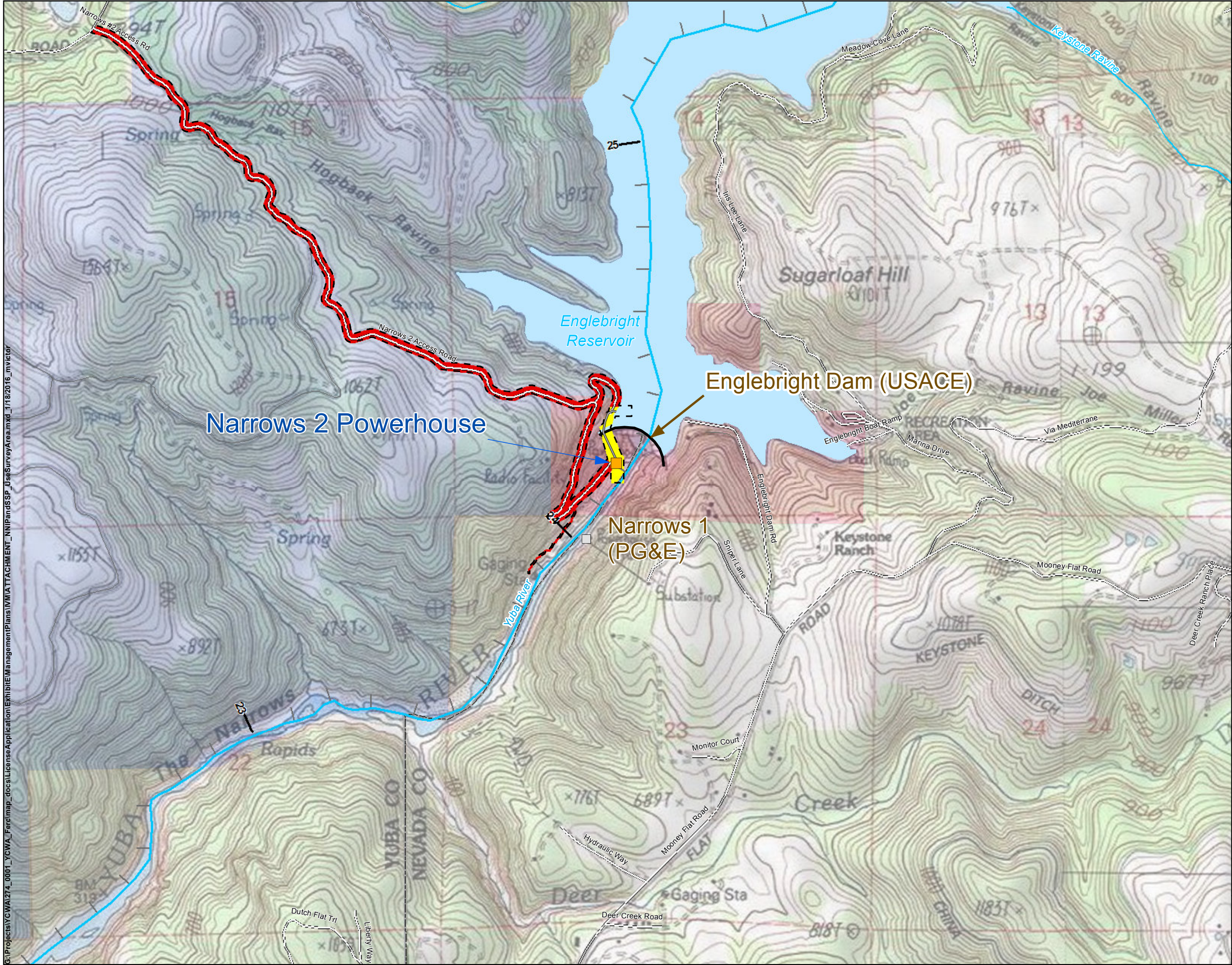
Attachment A

Special-Status Plant and Target Non-Native Invasive Plant Survey Area: Figures 1 through 11

Yuba River Development Project FERC Project No. 2246

October 2019

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Botanical Survey Area

- High use survey area
- Low use survey area

Base Map

- River Mile
- Named Road
- Non-Project Reservoir
- Forest Service Road
- County Line
- Un-Named Road

Project Features

- Project Powerhouse
- Project Reservoir
- Project Dam
- Penstock
- Tunnel
- FERC Boundary (No. 2246)

Non-Project Features

- Powerhouse
- Dam

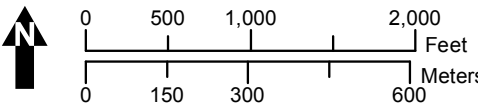
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Yuba River Development Project
(FERC Project No. 2246)
Non-Project Facility

Land Ownership

- Private (or Other)
- State of California
- Yuba County Water Agency

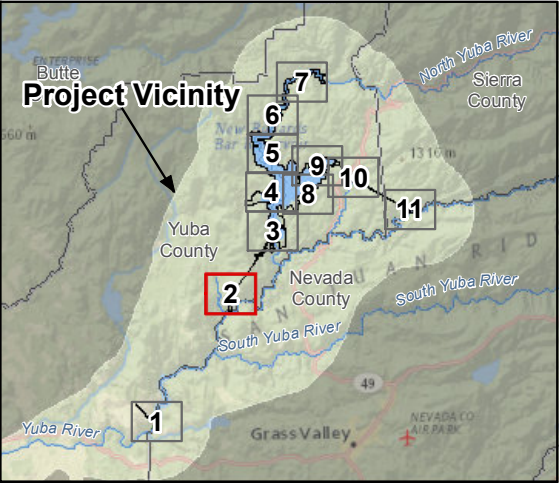
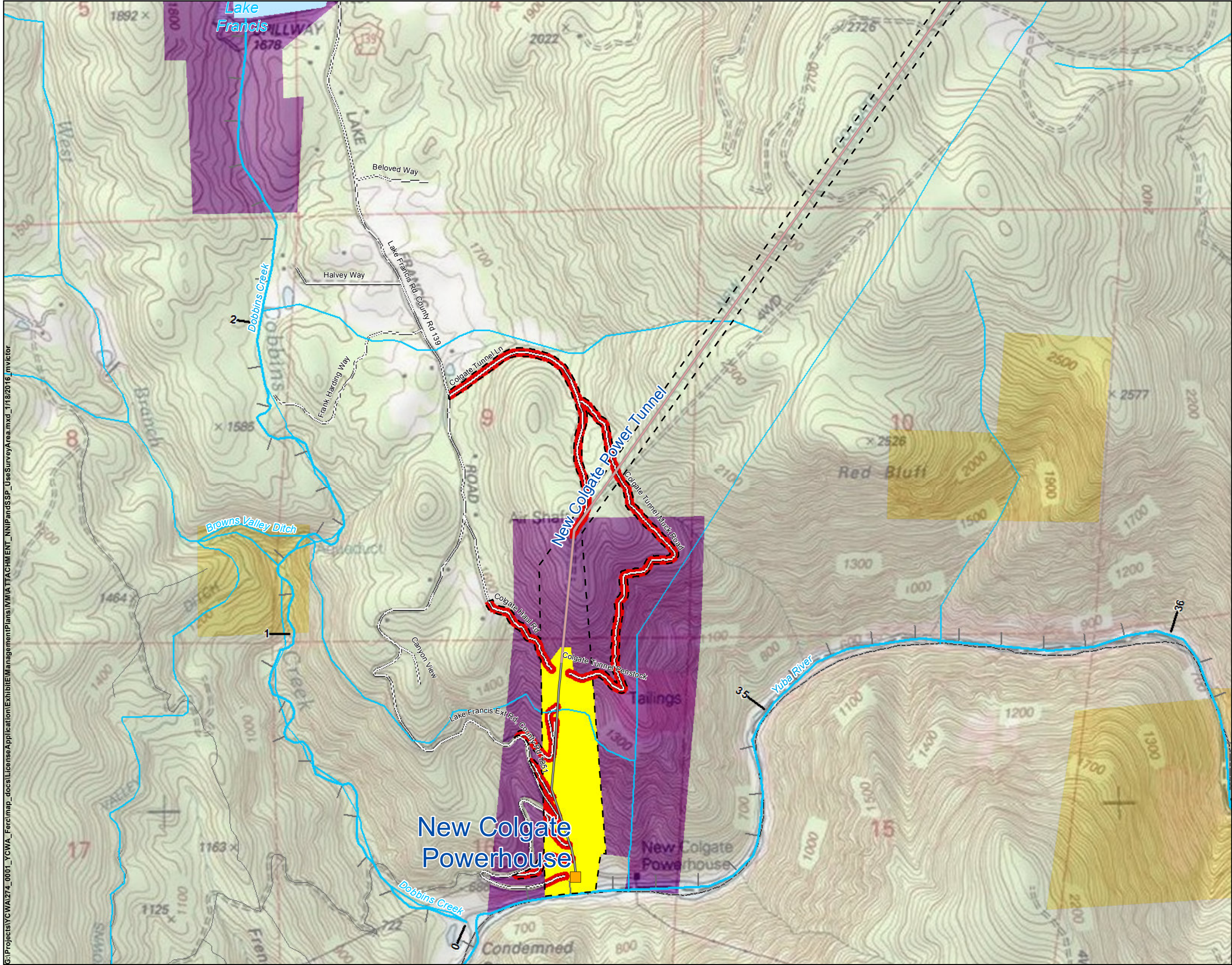
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- Army Corps of Engineers



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FERC Project No. 2246**

Data Sources: Base Map-Esri ArcGIS online streaming map service (USA Topo); FERC Boundary-Yuba County GIS; Botanical Survey Area, Survey Coverage, HDR.
Map information was compiled from the best available sources. No warranty is made for its accuracy or completeness.



Botanical Survey Area

- High use survey area
- Low use survey area

Base Map

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Non-Project Features

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- Dam

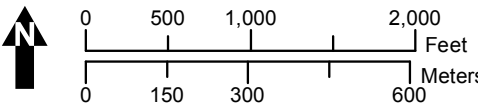
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Non-Project Facility

Land Ownership

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- Yuba County Water Agency

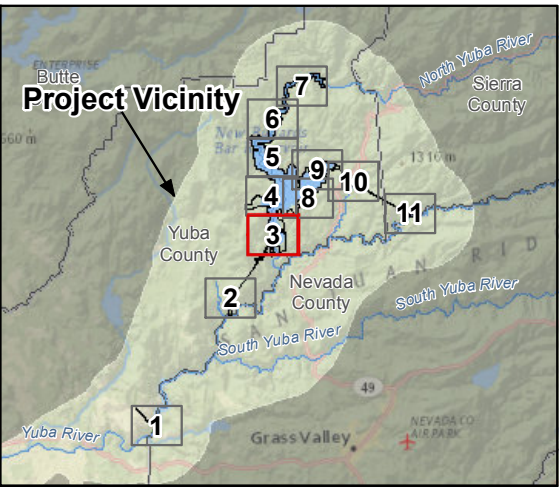
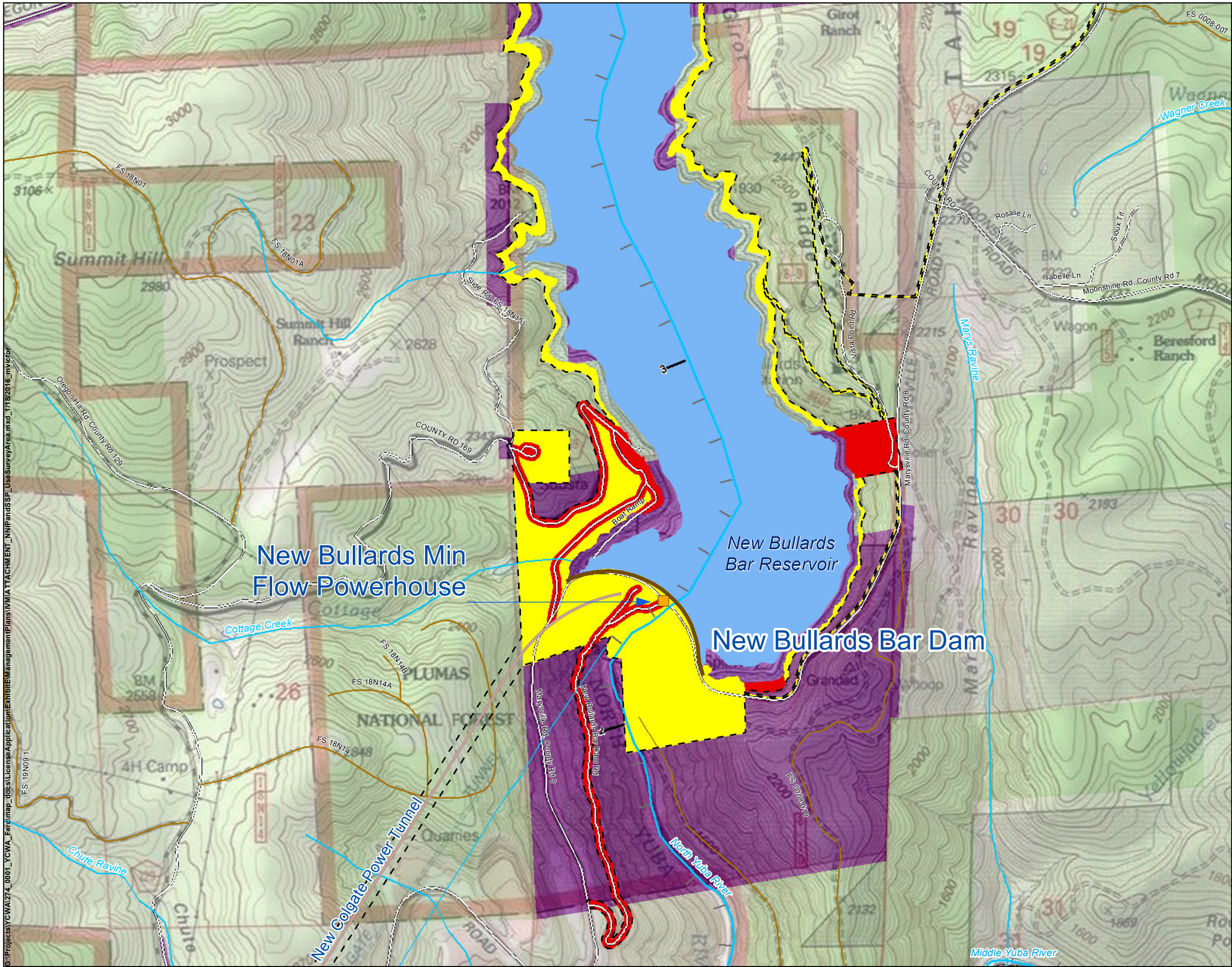
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Non-Project Features

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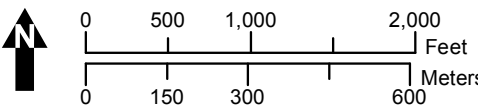
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Land Ownership

- Private (or Other)
- Yuba County Water Agency

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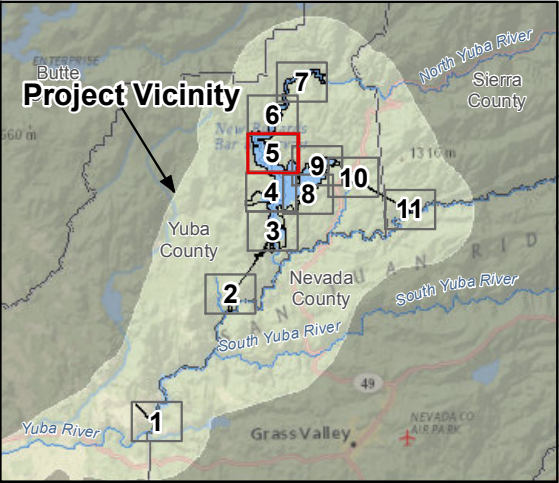
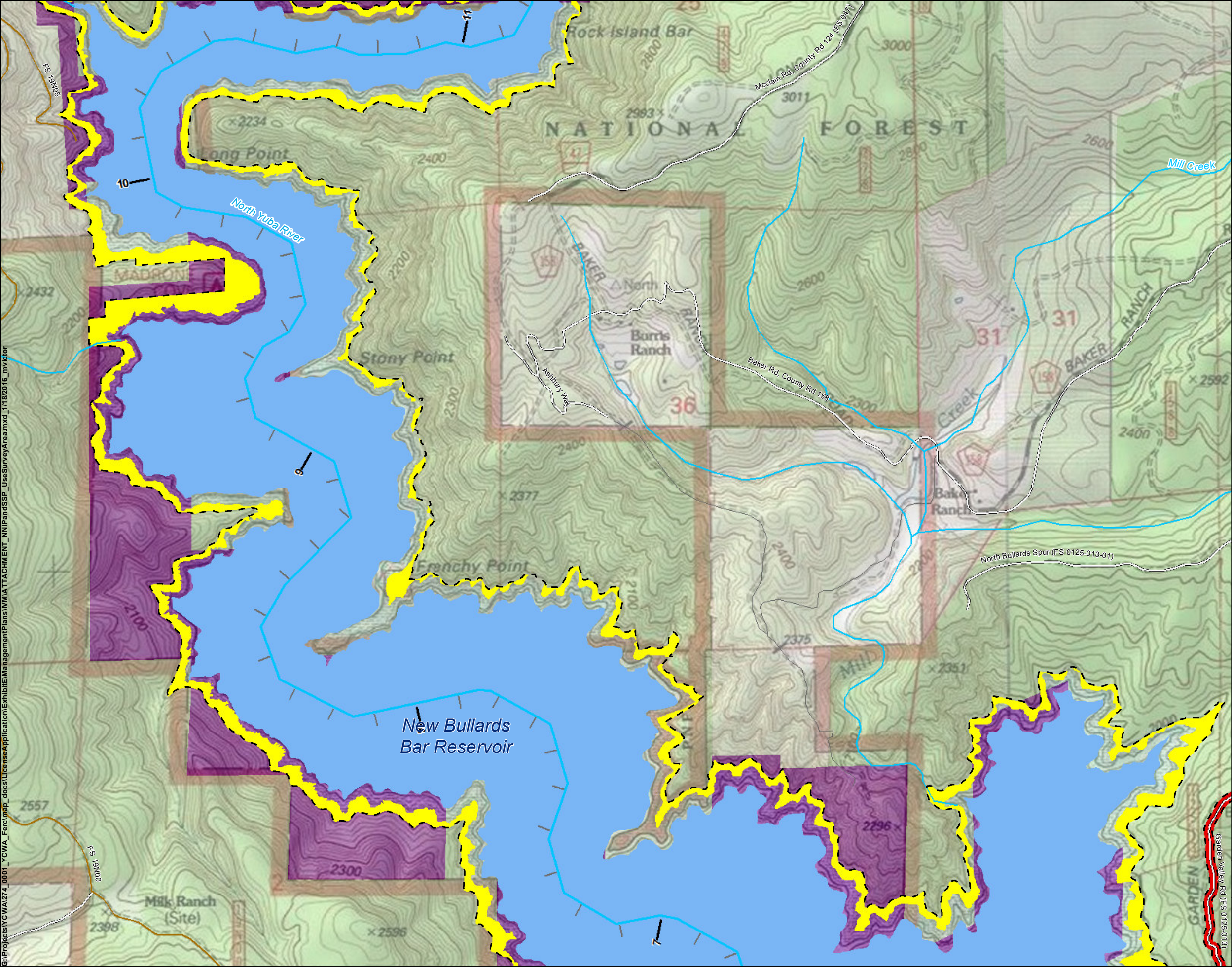
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Botanical Survey Area

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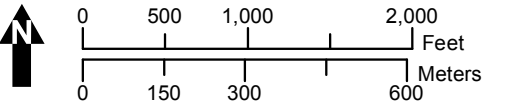
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Land Ownership

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- Yuba County Water Agency

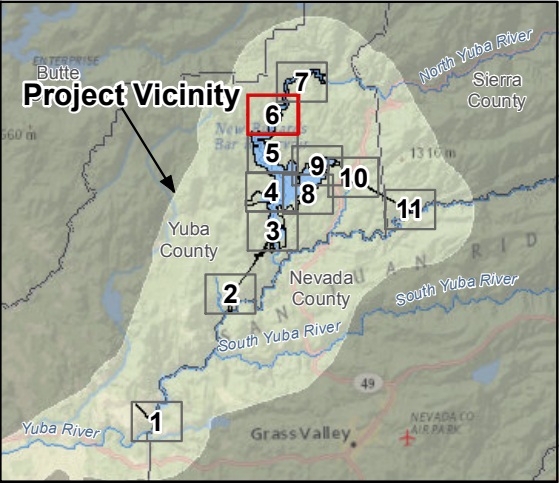
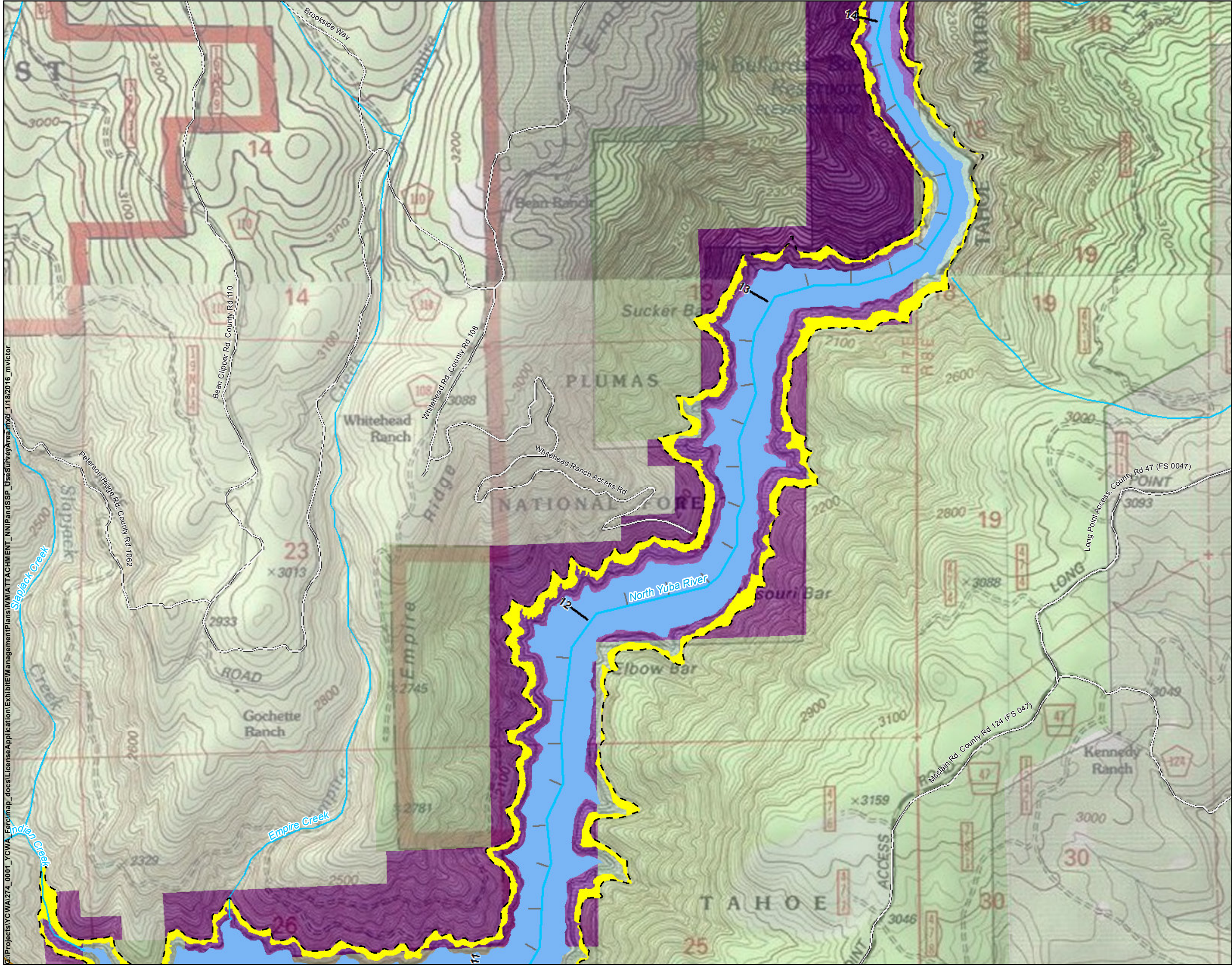
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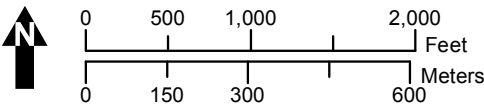
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Non-Project Facility

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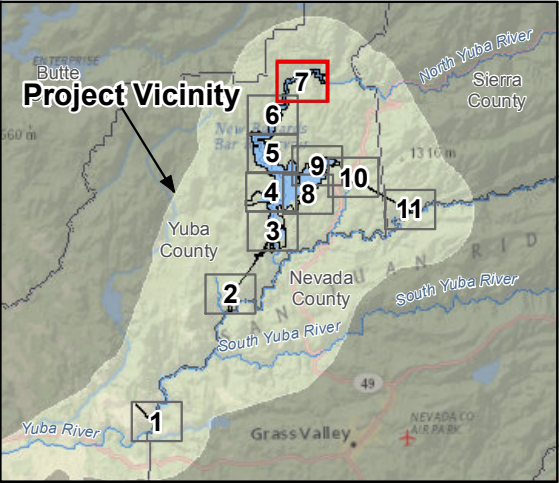
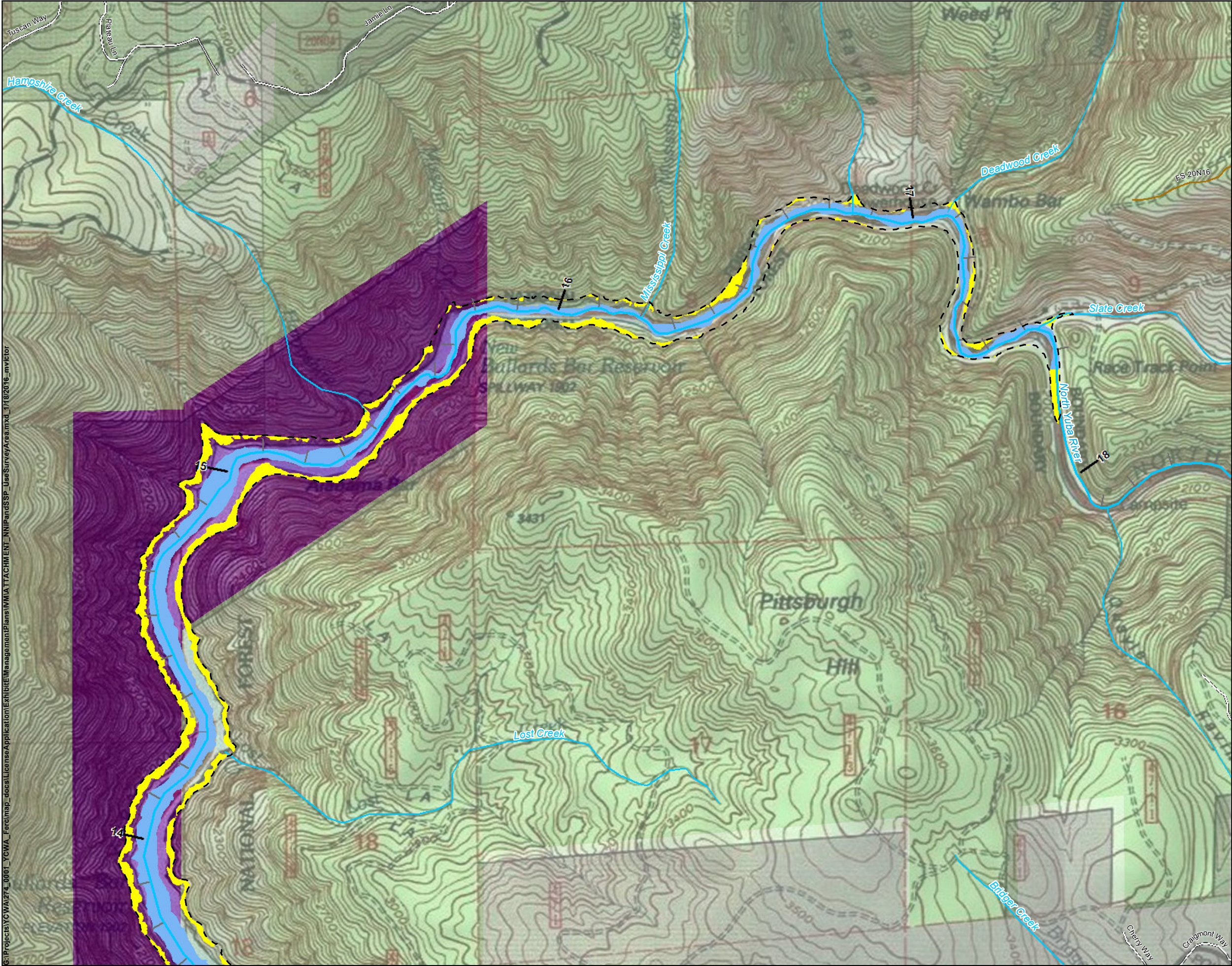
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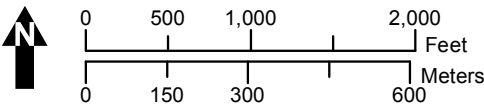
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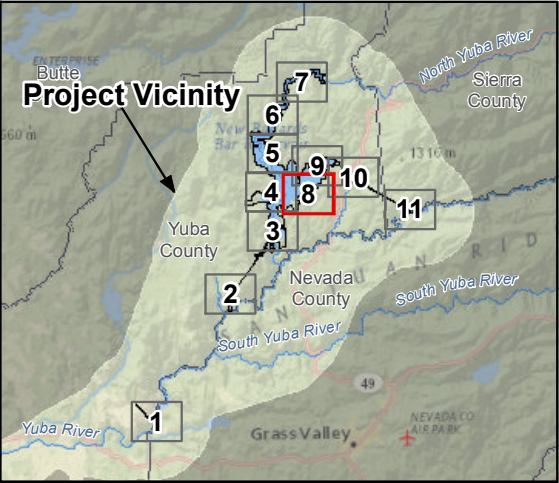
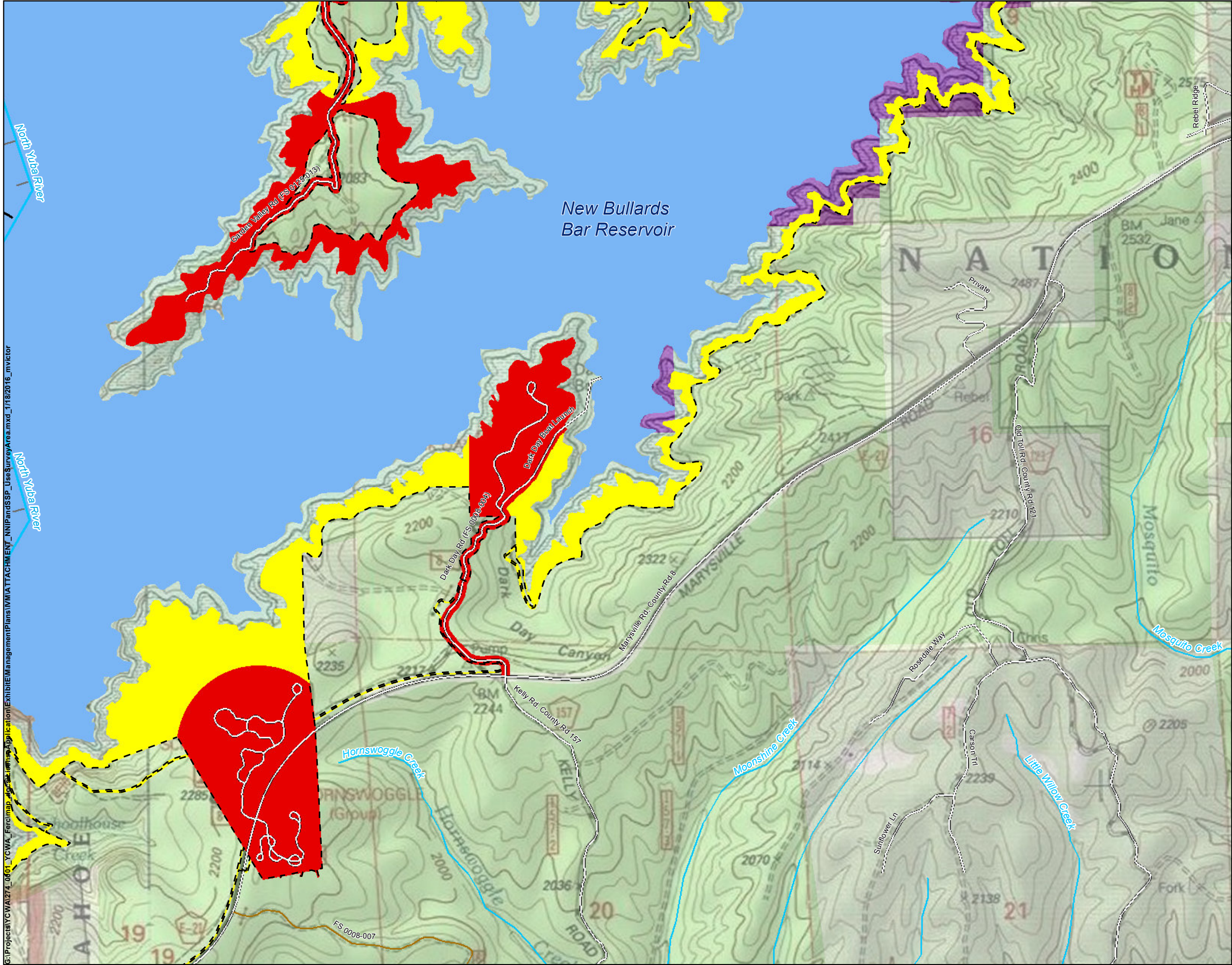
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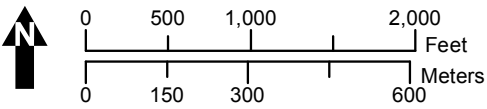
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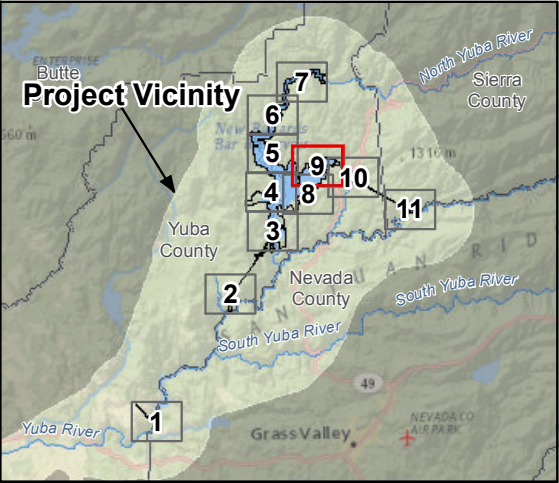
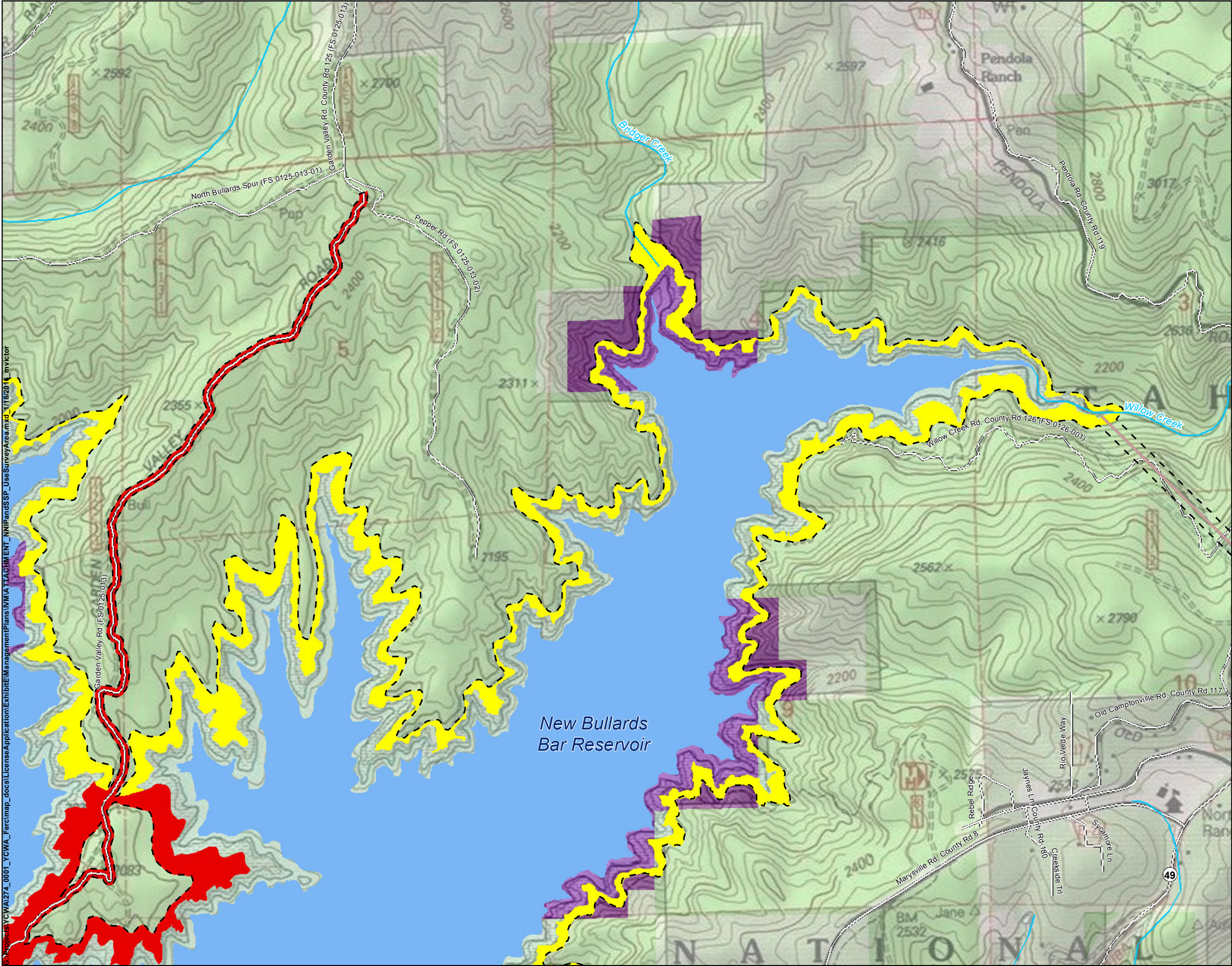
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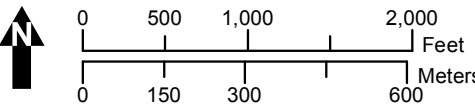
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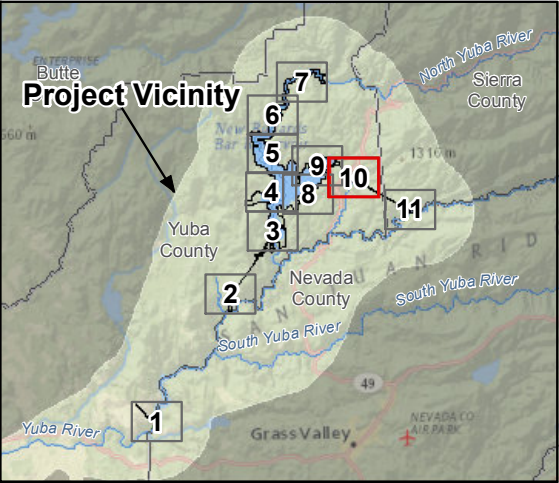
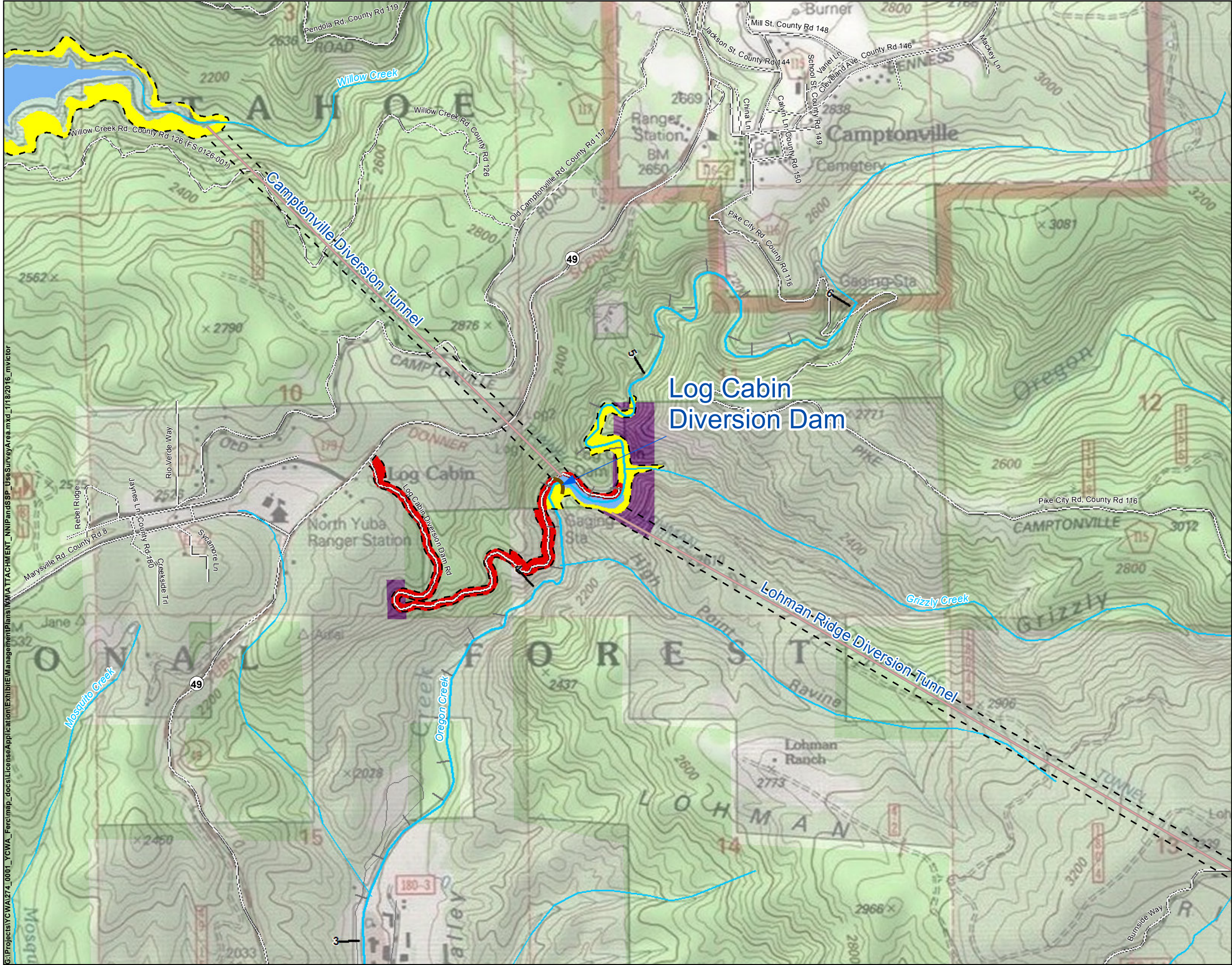
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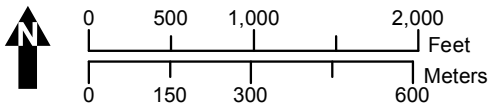
Land Ownership

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- Yuba County Water Agency

Label Color Key
Yuba County Water Agency
Yuba River Development Project
(FERC Project No. 2246)
Non-Project Facility

USA, Administered By:

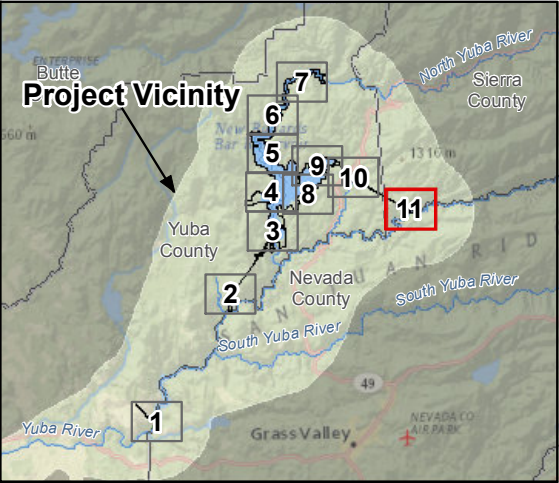
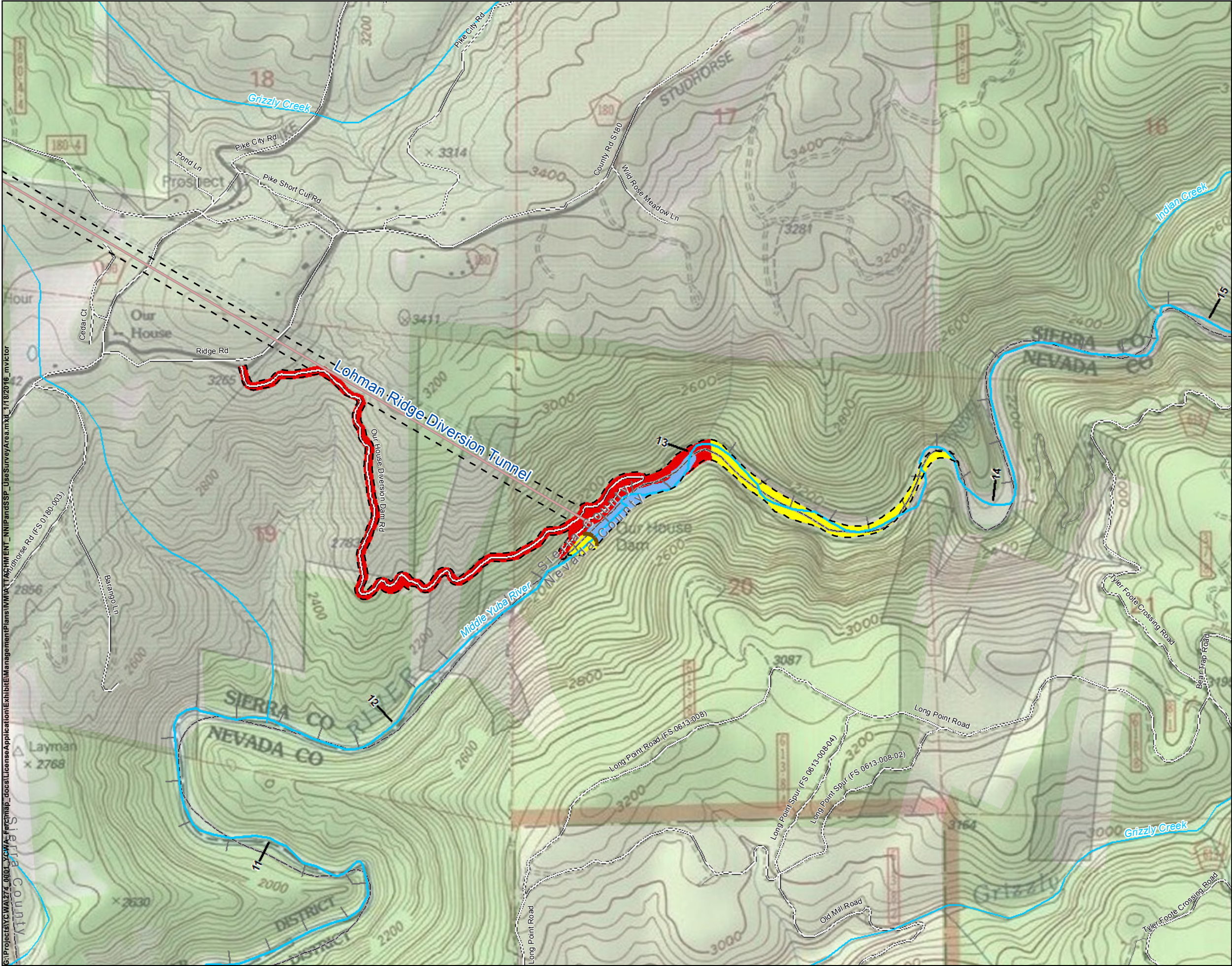
- US Forest Service



**Yuba River Development Project
FERC Project No. 2246**

Data Sources: Base Map-Esri ArcGIS online streaming map service (USA Topo); FERC Boundary-Yuba County GIS; Botanical Survey Area, Survey Coverage, HDR.
Map information was compiled from the best available sources. No warranty is made for its accuracy or completeness.

Map Prepared by: HDR | © 2013 Yuba County Water Agency



Botanical Survey Area

- High use survey area
- Low use survey area

Base Map

- River Mile
- Named Road
- Non-Project Reservoir
- Forest Service Road
- County Line
- Un-Named Road

Project Features

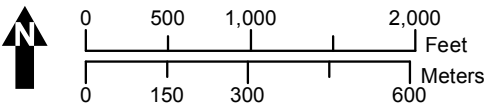
- Project Powerhouse
- Project Dam
- Tunnel
- Penstock
- Project Reservoir
- FERC Boundary (No. 2246)

Non-Project Features

- Powerhouse
- Dam

Land Ownership

- Private (or Other)
- USA, Administered By: US Forest Service



**Yuba River Development Project
FERC Project No. 2246**

Data Sources: Base Map-Esri ArcGIS online streaming map service (USA Topo); FERC Boundary-Yuba County GIS; Botanical Survey Area, Survey Coverage, HDR.
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Map Prepared by: HDR | © 2013 Yuba County Water Agency

Integrated Vegetation Management Plan

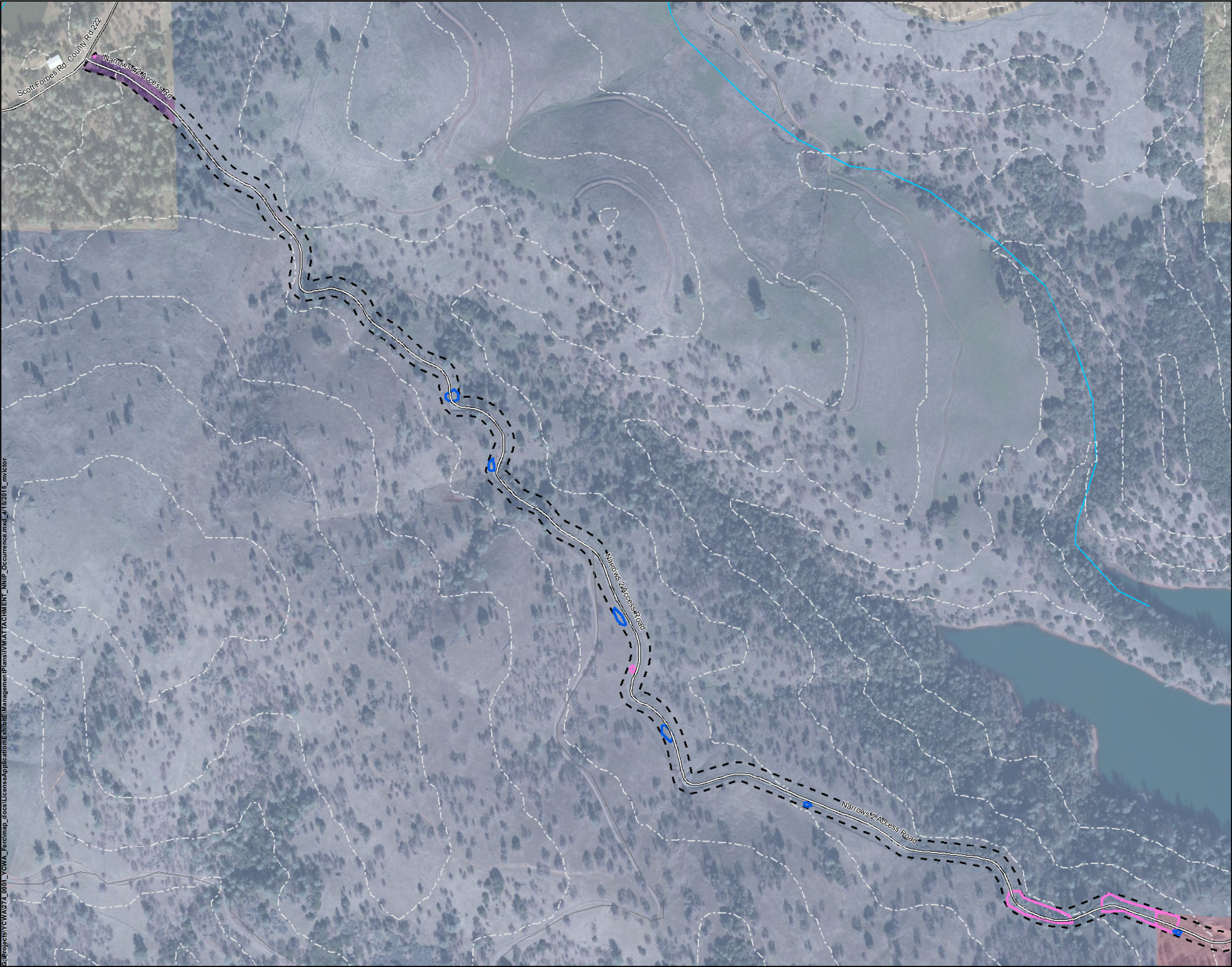
Attachment B

Target Non-Native Invasive Plant Occurrences: Figures 1 through 6

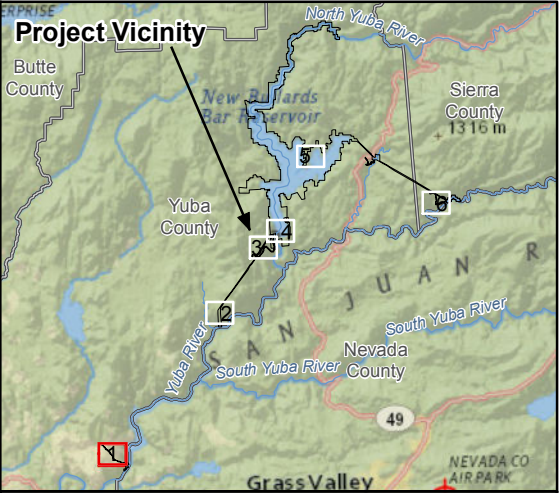
Yuba River Development Project FERC Project No. 2246

October 2019

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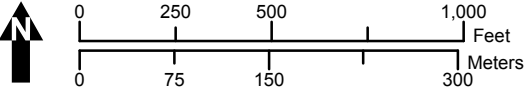


Page 1 of 6

- | | |
|--------------------------|-----------------------------|
| Project Features | Base Map |
| Recreation Site | Stream |
| Project Powerhouse | RiverMile |
| Project Dam | 100ft Contour |
| Tunnel | County Line |
| Penstock | Non-Project Features |
| FERC Boundary (No. 2246) | Powerhouse |
| | Dam |

- Land Ownership**
- | | |
|---------------------|------------------------------|
| Private (or Other) | Yuba County Water Agency |
| State of California | USA, Administered By: |
| | Army Corp of Engineers |

- Target Non-Native Invasive Plants**
- | | |
|-------------------------------|-------------------------|
| Aegilops triuncialis (AEGTRI) | <i>Barbed goatgrass</i> |
| Chondrilla juncea (CHOJUN) | <i>Skeletonweed</i> |

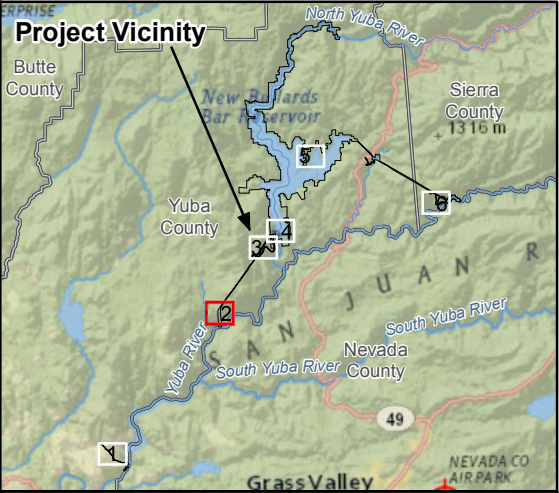


**Attachment B:
Target Non-Native Invasive Plants**

**Yuba River Development Project
FERC Project No. 2246**

Data Sources: Base Map - ArcGIS Online Streaming Layer (Imagery); FERC Boundary-Yuba County GIS; Land Ownership-Yuba County and CD-Data; Botanical Survey Area, Non-Native Invasive Species Occurrence - HDR. Map information was compiled from the best available sources. No warranty is made for its accuracy or completeness.

Map Prepared by: HDR | © 2014 Yuba County Water Agency



- Project Features**

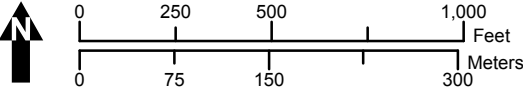
 - Recreation Site
 - Project Powerhouse
 - Project Dam
 - Tunnel
 - Penstock
 - FERC Boundary (No. 2246)
- Base Map**

 - Stream
 - RiverMile
 - 100ft Contour
 - County Line
- Non-Project Features**

 - Powerhouse
 - Dam

- Land Ownership**
- Private (or Other)
 - Yuba County Water Agency

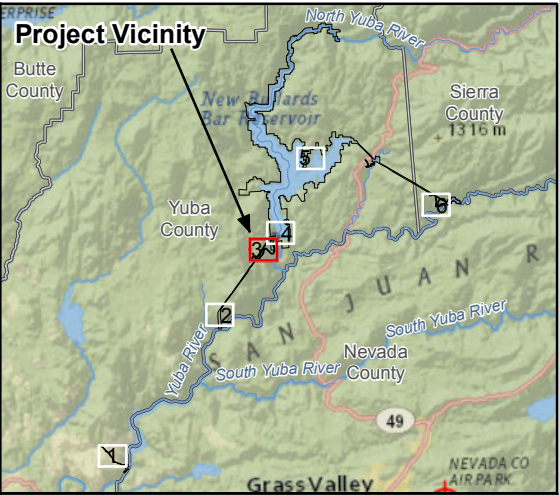
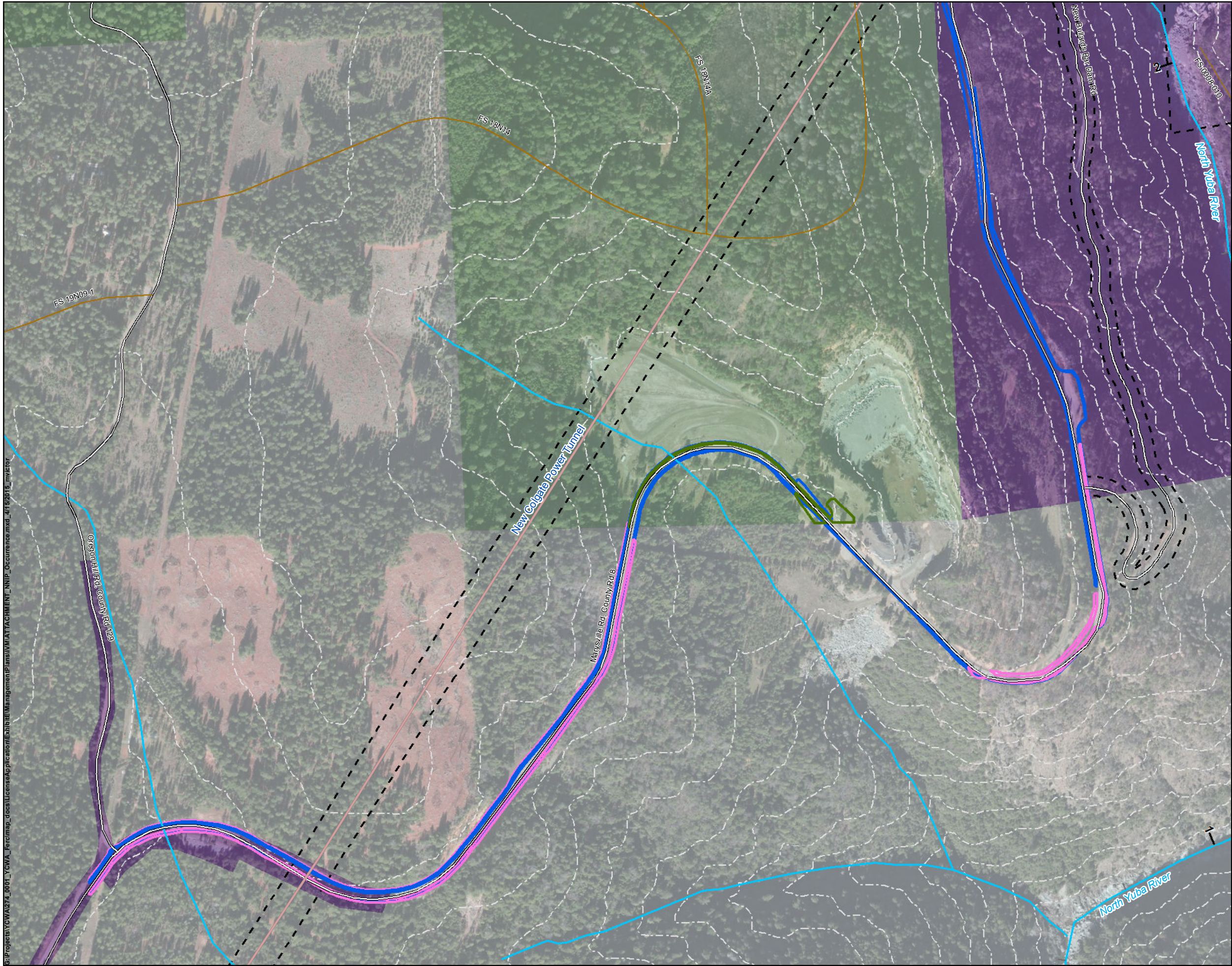
- Target Non-Native Invasive Plants**
- Aegilops triuncialis (AEGTRI)
 - Barbed goatgrass



**Attachment B:
Target Non-Native Invasive Plants**

**Yuba River Development Project
FERC Project No. 2246**

Data Sources: Base Map - ArcGIS Online Streaming Layer (Imagery); FERC Boundary-Yuba County GIS; Land Ownership-Yuba County and CD-Data; Botanical Survey Area, Non-Native Invasive Species Occurrence - HDR. Map information was compiled from the best available sources. No warranty is made for its accuracy or completeness.



- Project Features**

 - Recreation Site
 - Project Powerhouse
 - Project Dam
 - Tunnel
 - Penstock
 - FERC Boundary (No. 2246)
- Base Map**

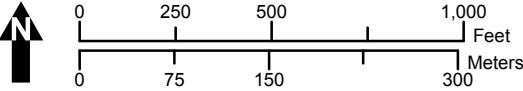
 - Stream
 - RiverMile
 - 100ft Contour
 - County Line
- Non-Project Features**

 - Powerhouse
 - Dam
- Land Ownership**

 - Private (or Other)
 - Yuba County Water Agency
 - US Forest Service
- USA, Administered By:**

 - USA

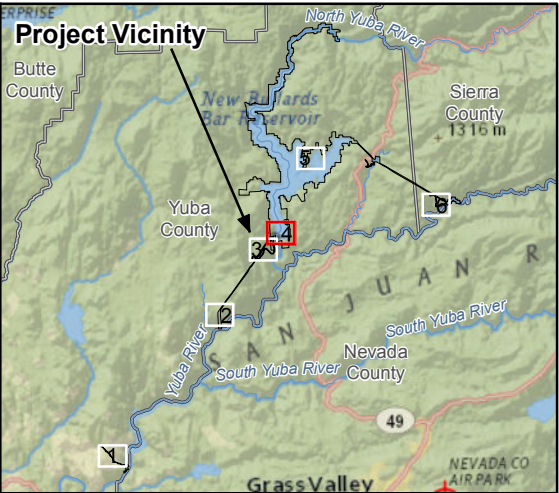
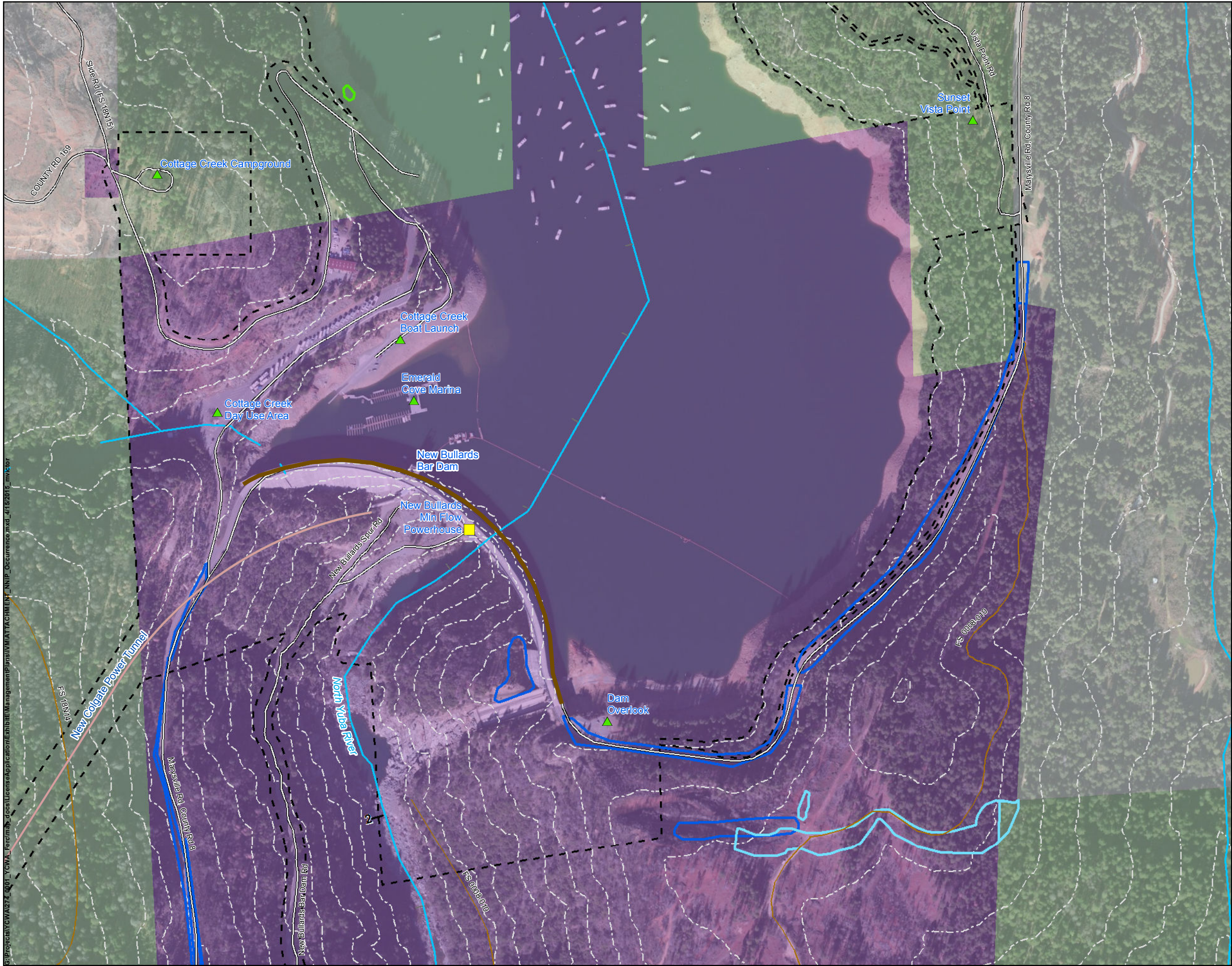
- Target Non-Native Invasive Plants**
- Elymus caput-medusae (ELYCAP) *Medusahead grass*
 - Aegilops triuncialis (AEGTRI) *Barbed goatgrass*
 - Chondrilla juncea (CHOJUN) *Skeletonweed*



**Attachment B:
Target Non-Native Invasive Plants**

**Yuba River Development Project
FERC Project No. 2246**

Data Sources: Base Map - ArcGIS Online Streaming Layer (Imagery); FERC Boundary-Yuba County GIS; Land Ownership-Yuba County and CD-Data; Botanical Survey Area, Non-Native Invasive Species Occurrence - HDR. Map information was compiled from the best available sources. No warranty is made for its accuracy or completeness.



- Project Features**

 - Recreation Site
 - Project Powerhouse
 - Project Dam
 - Tunnel
 - Penstock
 - FERC Boundary (No. 2246)
- Base Map**

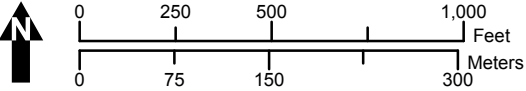
 - Stream
 - RiverMile
 - 100ft Contour
 - County Line
- Non-Project Features**

 - Powerhouse
 - Dam
- Land Ownership**

 - Private (or Other)
 - Yuba County Water Agency
 - US Forest Service
- USA, Administered By:**

 - US Forest Service

- Target Non-Native Invasive Plants**
- | | |
|--------------------------------|-----------------|
| Carduus pycnocephalus (CARPYC) | Italian thistle |
| Genista monspessulana (GENMON) | French broom |
| Chondrilla juncea (CHOJUN) | Skeletonweed |

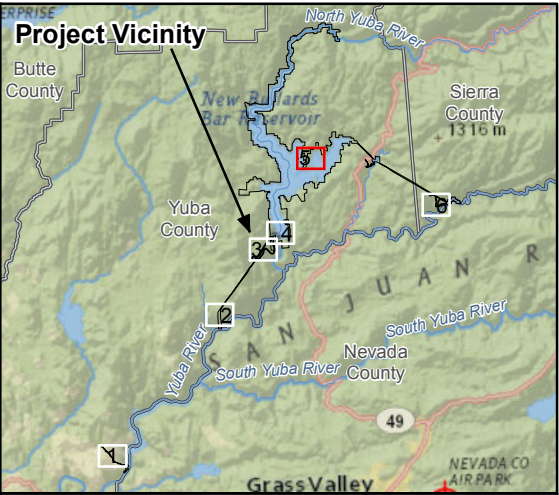


**Attachment B:
Target Non-Native Invasive Plants**

**Yuba River Development Project
FERC Project No. 2246**

Data Sources: Base Map - ArcGIS Online Streaming Layer (Imagery); FERC Boundary-Yuba County GIS; Land Ownership-Yuba County and CD-Data; Botanical Survey Area, Non-Native Invasive Species Occurrence - HDR. Map information was compiled from the best available sources. No warranty is made for its accuracy or completeness.

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- Project Features**

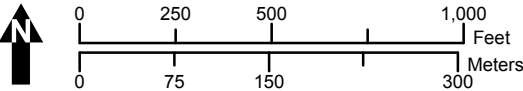
 - Recreation Site
 - Project Powerhouse
 - Project Dam
 - Tunnel
 - Penstock
 - FERC Boundary (No. 2246)
- Base Map**

 - Stream
 - RiverMile
 - 100ft Contour
 - County Line
- Non-Project Features**

 - Powerhouse
 - Dam

- Land Ownership**
- Yuba County Water Agency
 - USA, Administered By: US Forest Service

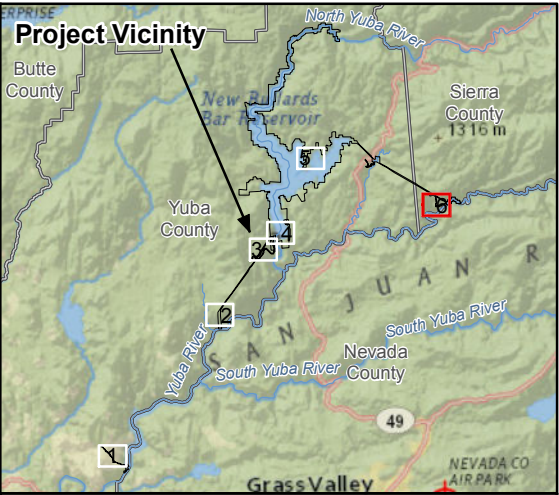
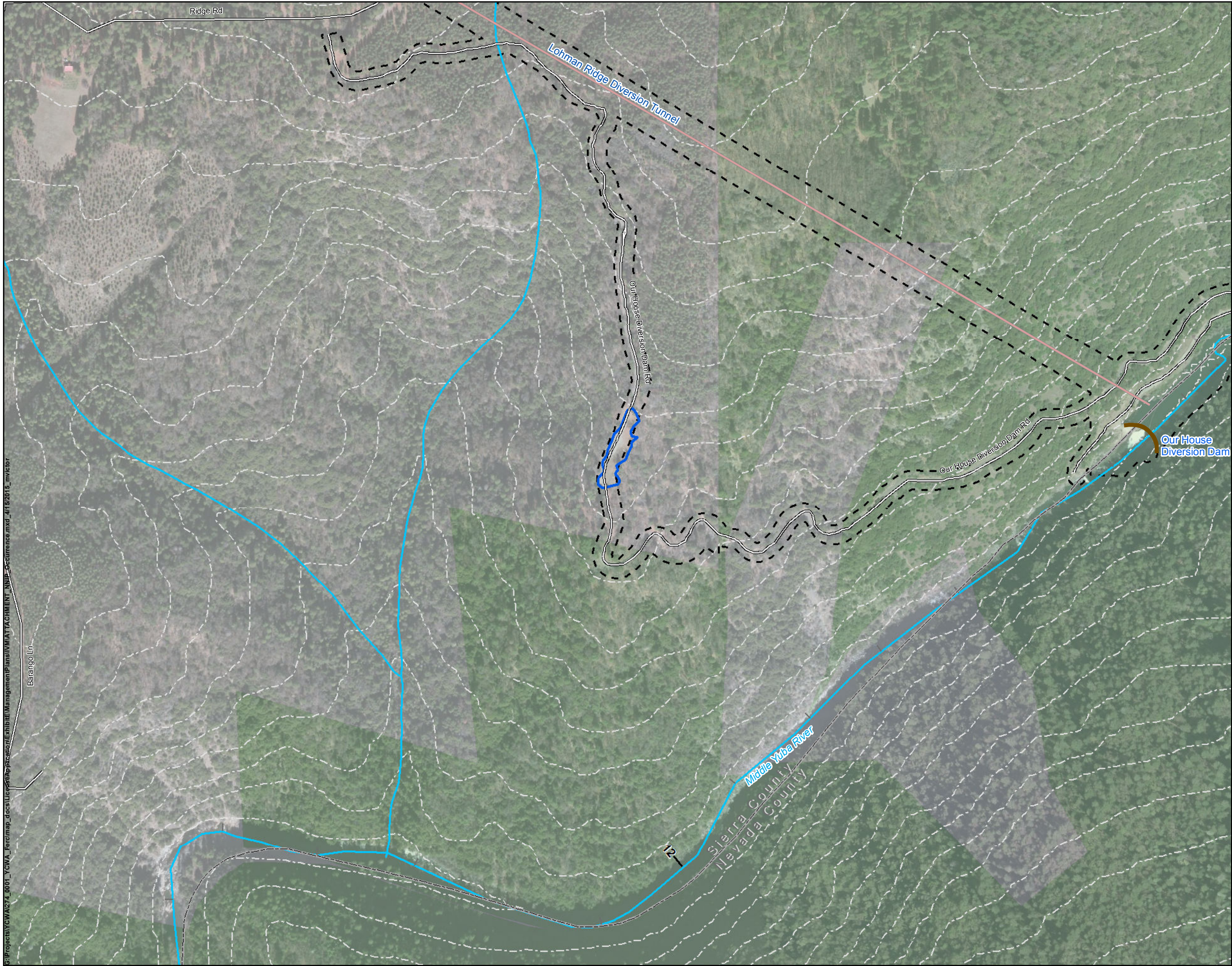
- Target Non-Native Invasive Plants**
- Genista monspessulana (GENMON) *French broom*



**Attachment B:
Target Non-Native Invasive Plants**

**Yuba River Development Project
FERC Project No. 2246**

Data Sources: Base Map - ArcGIS Online Streaming Layer (Imagery); FERC Boundary-Yuba County GIS; Land Ownership-Yuba County and CD-Data; Botanical Survey Area, Non-Native Invasive Species Occurrence - HDR. Map information was compiled from the best available sources. No warranty is made for its accuracy or completeness.



- Project Features**

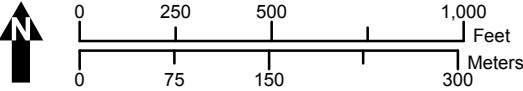
 - Recreation Site
 - Project Powerhouse
 - Project Dam
 - Tunnel
 - Penstock
 - FERC Boundary (No. 2246)
- Base Map**

 - Stream
 - RiverMile
 - 100ft Contour
 - County Line
- Non-Project Features**

 - Powerhouse
 - Dam

- Land Ownership**
- Private (or Other)
 - USA, Administered By: US Forest Service

- Target Non-Native Invasive Plants**
- Chondrilla juncea (CHOJUN)
 - Skeletonweed



**Attachment B:
Target Non-Native Invasive Plants**

**Yuba River Development Project
FERC Project No. 2246**

Data Sources: Base Map - ArcGIS Online Streaming Layer (Imagery); FERC Boundary-Yuba County GIS; Land Ownership-Yuba County and CD-Data; Botanical Survey Area, Non-Native Invasive Species Occurrence - HDR. Map information was compiled from the best available sources. No warranty is made for its accuracy or completeness.

Integrated Vegetation Management Plan

Attachment C

Forest Service Soil Cover Standards

Yuba River Development Project **FERC Project No. 2246**

October 2019

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55. Maintain Soil Productivity

Forest soil is considered a nonrenewable resource because an inch of soil takes thousands of years to form. Land management activities can alter the soil in varying degrees. These changes may or may not significantly affect the long-term productivity of the soil.

This standard and guideline has been designed to maintain long-term soil productivity on-site. Long-term soil productivity can be affected by changes in three soil characteristics: soil porosity, soil cover, and soil organic matter. When this standard and guideline for these three soil characteristics is met on at least 85 percent of an activity area (at least 95 percent where ground-based equipment is not used within the activity area), the soil is considered to be in an acceptable condition, without significant impairment to its long-term productivity. An activity area is the area on which a soil-impacting activity has occurred or is planned. An activity area includes temporary roads, landings, skid roads, and skid trails; system roads are not included.

Although implementation of this standard and guideline will also reduce sedimentation and off-site impacts on water quality, this is not its primary purpose. Other standards and guidelines and the implementation of Best Management Practices (BMPs) are designed to minimize the off-site impacts of erosion.

It may not be possible to meet this standard and guideline during fire salvage, rehabilitation, or recovery activities, including reforestation of brush fields. It may also be difficult to achieve in areas where existing plant communities have developed inadequate cover or duff, or where resource objectives are in direct conflict. In these situations, a soil scientist will work with the project interdisciplinary team to develop site-specific management prescriptions that approximate this standard and guideline, and do not result in a significant reduction (see FSH 2509.18) in soil productivity.

For a detailed discussion of the logic used to develop this standard and guideline, see Appendix H of the EIS.

Standard for Soil Porosity:

The soil is considered to be in an acceptable condition when compaction or puddling reduce total soil porosity by no more than 10 percent as compared to the undisturbed soil.

When less than 85 percent of an activity area is in an acceptable soil condition as defined above, tillage will be used to rehabilitate the soil. Either erosion control measures shall be installed or tillage completed prior to any seasonal period of precipitation or runoff. The objective of tillage is to fracture the full depth of the compacted layer to produce friable soil as defined in FSH 2509.22.

Refer to FSH 2509.22 for details in applying this standard and guideline.

Standard for Soil Cover:

Soil loss tolerance limits have not been established for individual upland soils because specific rates of soil formation from bedrock are not known. However, research has shown that the rate of soil formation from consolidated bedrock is in the range of 0.5 to 1.0 tons per acre per year. The following soil cover standards have been developed to prevent erosion rates from exceeding soil formation rates.

The soil is considered to be in acceptable condition after a land-disturbing activity when the effective soil cover on an activity area is: (1) the minimum amount shown in the following table, or (2) the minimum amount prescribed for a specific site by a qualified earth science specialist after an on-site investigation. The minimum effective soil cover prescribed for a specific site will vary from the values shown in the table due to local differences in slope, microrelief, surface rock fragments, detachability, and other factors that vary within soil types.

Effective soil cover as defined in the following paragraph is not the same as effective ground cover defined for streamside management zones in Appendix F. The function of effective ground cover is to trap sediment that has been mobilized and moved off-site, and thereby keep it from entering a stream; the function of effective soil cover is to prevent the detachment and mobilization of soil particles, keeping the soil on-site.

Effective soil cover includes all materials that will dissipate the energy of falling raindrops. Included are plant litter and forest duff (which can be intact, displaced, or disturbed), woody material in contact with the soil, living vegetation (see Appendix H of the EIS for definition of living vegetation), and rock fragments with a diameter of 1/2 to 3 inches. Woody material and forest duff described under the guideline for soil organic matter both contribute to effective soil cover. The intent is for the effective soil cover to be evenly distributed across the activity area.

When less than 85 percent of an activity area is in an acceptable soil condition as defined above, restoration treatments will be implemented to bring effective soil cover levels up to the minimum standard. Restoration treatments will be completed prior to any seasonal period of precipitation or runoff. Treatment may include, but is not limited to, mulching with straw or woodchips, scattering concentrations of slash, or seeding grasses or forbs.

MINIMUM EFFECTIVE SOIL COVER (PERCENT) BY SLOPE GROUP AND SOIL GROUP

Slope (percent)	< 35	35 to 50	> 50
Soil Group A.	70	80	90
Soil Group B.	60	60	75
Soil Group C.	40	50	65
Soil Group D.	30	40	55

Soil Group A. These soils are highly erodible, have developed from granitic parent material, have a short timber rotation length, and are at lower elevations on the westside of the Forest. Included are the Hoda, Holland, Hotaw, and Musick series.

Soil Group B. These soils have developed from a variety of parent materials. Their erodibility, geographic location, and climate varies, and they have short to moderate timber rotation lengths. Included are the Alken, Boomer, Boomer Variant, Chaix, Cohasset, Delleker, Dubakella, Euer, Euer Variant, Forbes, Fugawee, Horseshoe, Hotaw Variant, Huysink, Jocal, Jocal Variant, Jorge, Kinkel Variant, Lorack Variant, Mariposa, McCarthy, Ponto Variant, Putt, Sattley, Sierraville, Sites, and Trojan series.

Soil Group C. These soils have developed from a variety of parent materials. Their erodibility, geographic location, and climate varies, and they have moderate to long timber rotation lengths. Included are the Aspen Variant, Bucking Variant, Chaix Variant, Crozier, Haypress, Hurlbut, Jorge Variant, Kyburz, Ledford, Ledford Variant, Neer, Smokey, Tahoma Variant, Tallac, Tinker, and Zeibright series.

Soil Group D. These soils occur primarily in the true fir zone, have low erodibilities, and have long timber rotations. Included are the Ahart, Bucking, Celio Variant, Lorack, Smokey Variant, Tahoma, Umpa, Wata, and Windy series.

Guideline for Soil Organic Matter.

1 Maintain Large Woody Material

The objective of this guideline is to maintain soil productivity and nutrient cycling by maintaining woody residues in timber harvest units while allowing the merchantable logs to be removed.

The goal is to maintain an average of at least 5 logs per acre in an activity area. Up to 20 logs per acre may be left if there are no other resource conflicts. Preference is for large cull logs 20 inches or more in diameter and more than 40 cubic feet in volume. Where possible, logs should be evenly distributed throughout the activity area and in contact with the soil. Logs should be in a range of decomposition classes (defined in USDA Handbook 553, page 80), except that at least two logs per acre should be in class 1 or 2. A total volume of 200 to 800 cubic feet of smaller logs, merchantable wood, or other woody material may be substituted when sufficient large logs are not available. Hardwood residues, which have a much shorter residence time, should be considered for retention when conifer residues are absent or in short supply.

The activity area for the large woody material guideline does not include roadsides and ridges designated for fuel reduction in Practice P1.

Large woody materials considered part of effective soil cover under the Standard for Soil Cover.

2 Maintain Forest Duff

Forest duff helps maintain long-term soil productivity by: (1) providing a source of organic matter and nutrients, (2) providing habitat for soil microorganisms, and (3) providing a mulch that conserves soil moisture.

The goal is to maintain a minimum of 20 percent of the undisturbed forest duff evenly distributed throughout the activity area. Undisturbed duff is duff that has not been displaced or moved, its natural structure is intact, including a well-decomposed layer at the interface with mineral soil, the thickness of its well-decomposed layer has not been reduced, and its surface may be charred by fire, but not consumed.

Undisturbed forest duff has the capacity to absorb soil being displaced and transported by sheet erosion. Undisturbed forest duff is also a source of organic matter, nutrients, and microbial habitat.

Forest duff is considered part of effective soil cover under the Standard for Soil Cover. Because of its special qualities, forest duff may be used to reduce the requirements of the soil cover standard as follows:

Where more than 20 percent of undisturbed forest duff is maintained, the effective soil cover required under the soil cover standard may be reduced by 5 percent for each 10 percent of undisturbed duff over 20 percent. This applies only to Soil Groups B, C, and D in the Standard for Soil Cover.

Integrated Vegetation Management Plan

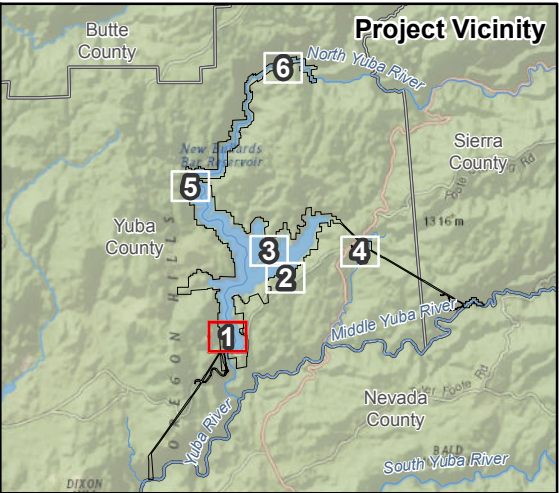
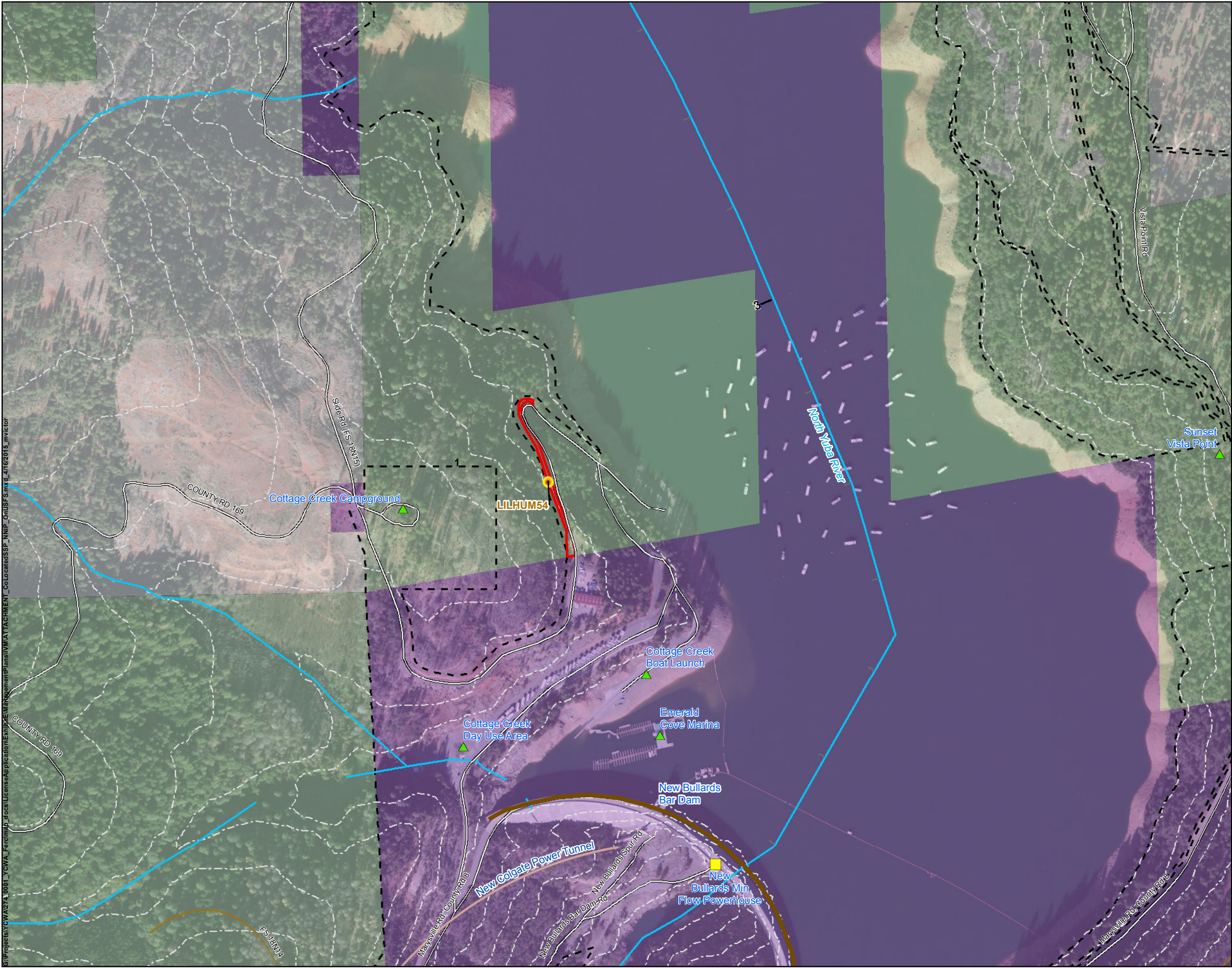
Attachment D

Special-Status Plants Collocated with Non-Native Invasive Plants: Figures 1 through 8

Yuba River Development Project FERC Project No. 2246

October 2019

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- Project Features**

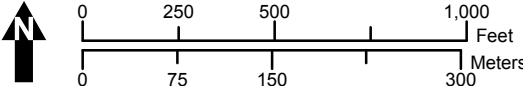
 - Recreation Site
 - Project Powerhouse
 - Project Dam
 - Tunnel
 - Penstock
 - FERC Boundary (No. 2246)
- Base Map**

 - Stream
 - RiverMile
 - 100ft Contour
 - County Line
- Non-Project Features**

 - Powerhouse
 - Dam

- Land Ownership**
- Private (or Other)
 - Yuba County Water Agency
- USA, Administered By:**
- US Forest Service

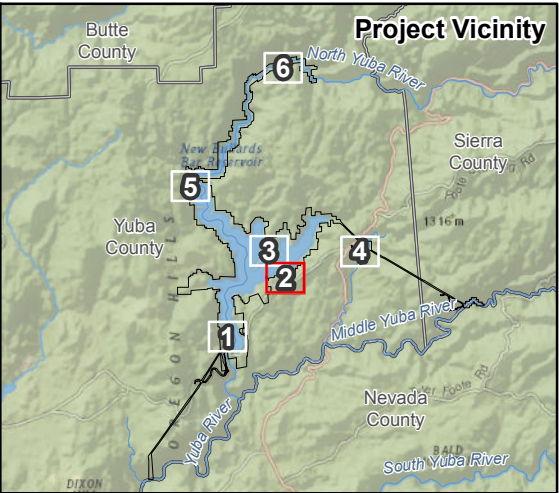
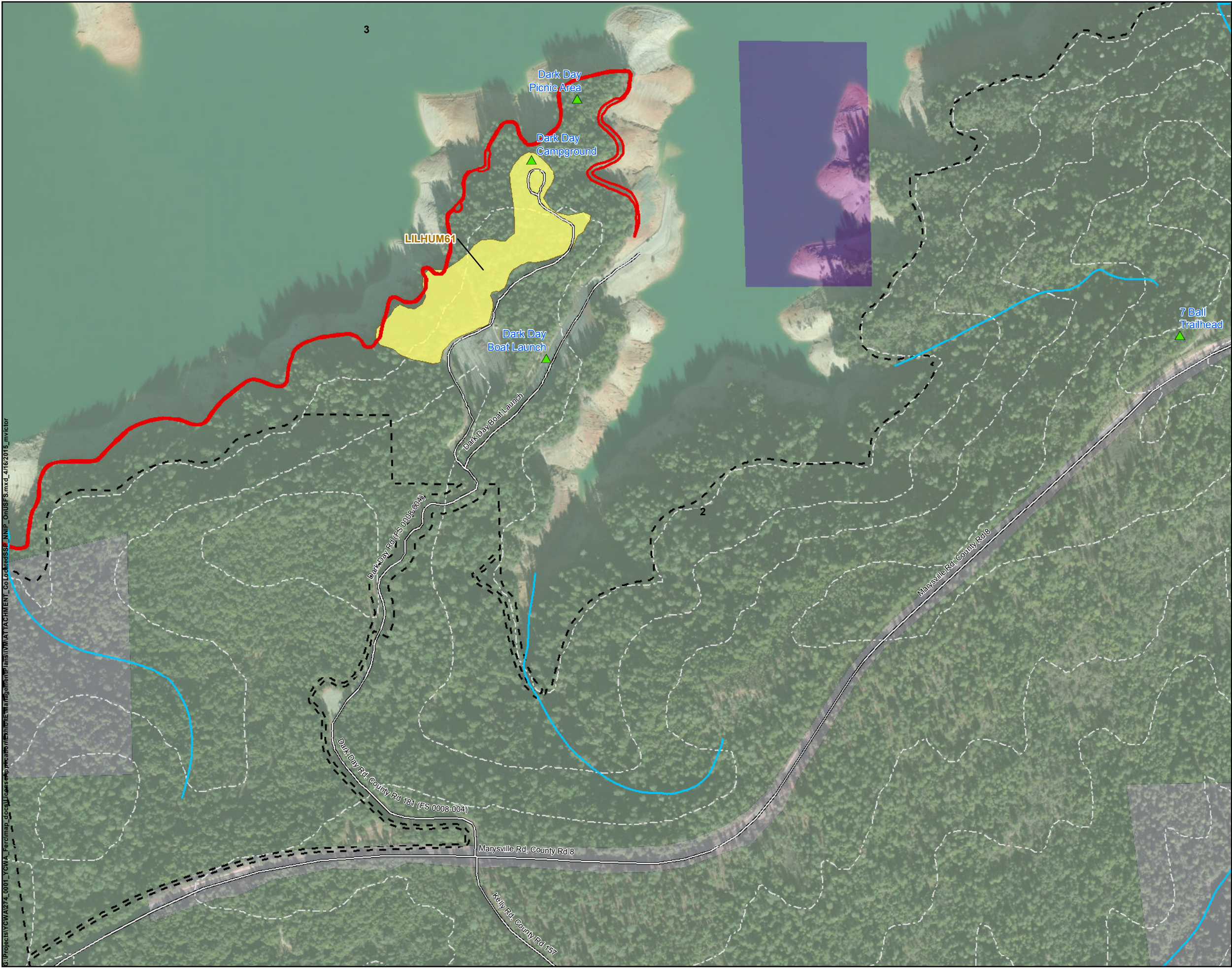
- Non-Native Invasive Plants**
- Cytisus scoparius (CYTSKO) - Scotch broom
 - Rubus armeniacus (RUBARM) - Himalayan blackberry
- Special-Status Plants**
- Lewisia cantelovii (LEWCAN) - Cantelow's lewisia
 - Lilium humboldtii ssp. humboldtii (LILHUM) - Humboldt lily
 - Lilium humboldtii ssp. humboldtii (LILHUM) - Humboldt lily
 - Lilium humboldtii ssp. humboldtii (LILHUM) - Humboldt lily



Attachment D: Special-Status Plants Collocated with Non-Native Invasive Species

Yuba River Development Project FERC Project No. 2246

Data Sources: Base Map - ArcGIS Online Streaming Layer (Imagery); FERC Boundary-Yuba County GIS; Land Ownership-Yuba County and CD-Data; Botanical Survey Area, Non-Native Invasive Species Occurrence - HDR. Map information was compiled from the best available sources. No warranty is made for its accuracy or completeness.

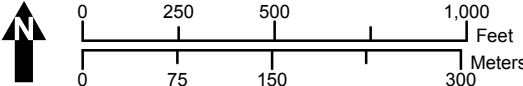


- Project Features**
 - Recreation Site
 - Project Powerhouse
 - Project Dam
 - Tunnel
 - Penstock
 - FERC Boundary (No. 2246)
- Base Map**
 - Stream
 - RiverMile
 - 100ft Contour
 - County Line
- Non-Project Features**
 - Powerhouse
 - Dam

- Land Ownership**
- Private (or Other)
 - Yuba County Water Agency
- USA, Administered By:**
- US Forest Service

- Non-Native Invasive Plants**
- Cytisus scoparius (CYTSKO) Scotch broom
 - Rubus armeniacus (RUBARM) Himalayan blackberry

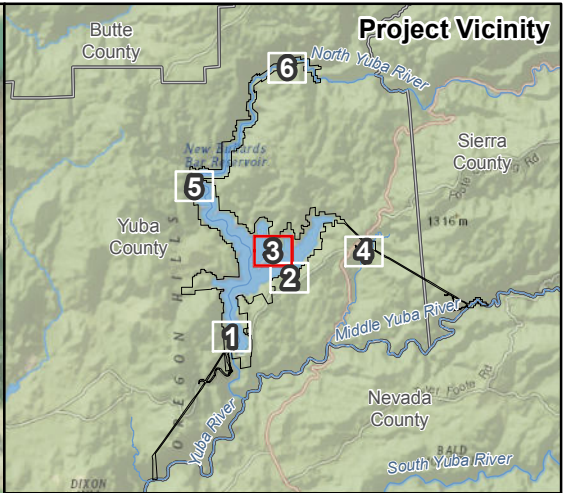
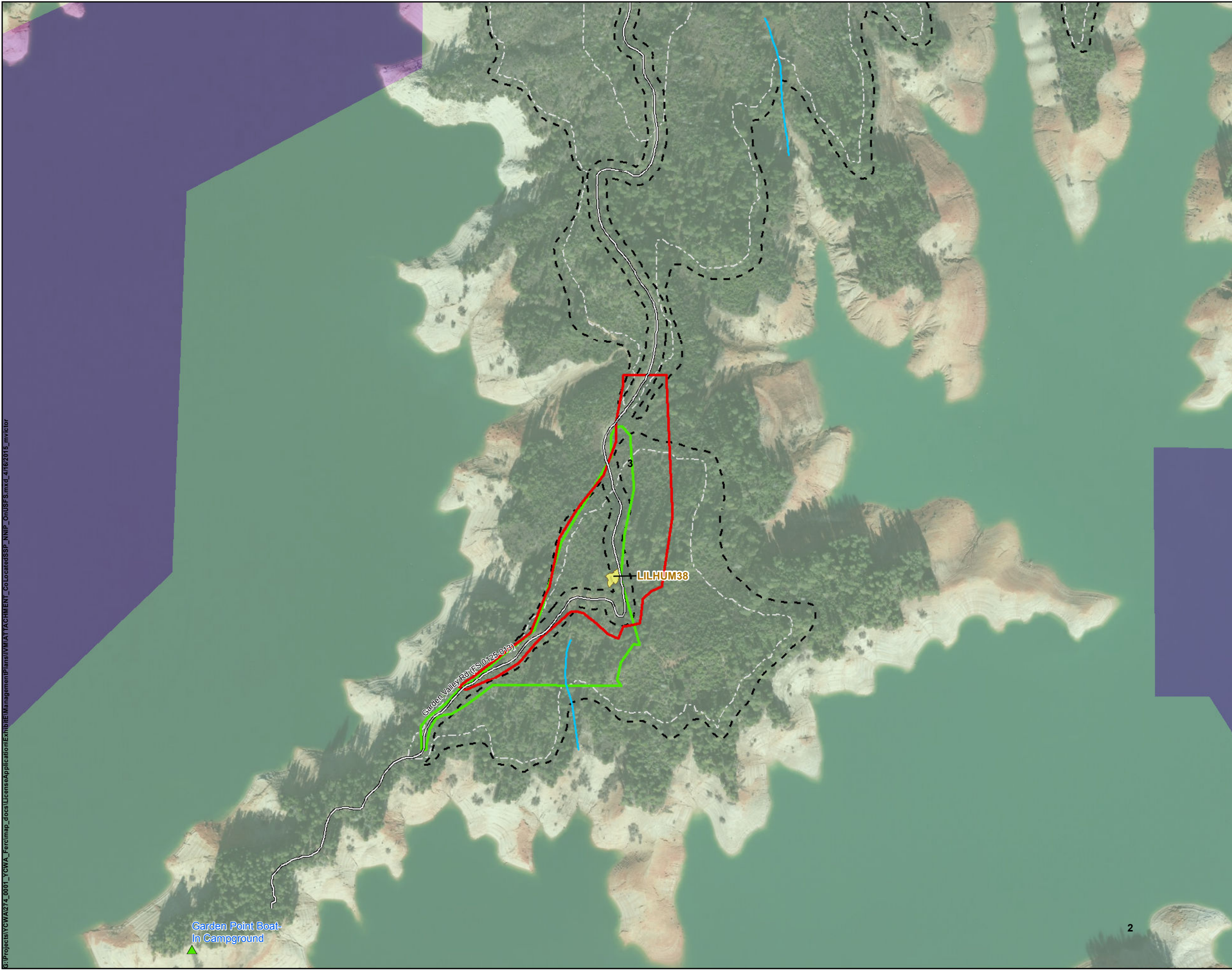
- Special-Status Plants**
- Lewisia cantelovii (LEWCAN) Cantelow's lewisia
 - Lilium humboldtii ssp. humboldtii (LILHUM) Humboldt lily
 - Lilium humboldtii ssp. humboldtii (LILHUM) Humboldt lily
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Attachment D: Special-Status Plants Collocated with Non-Native Invasive Species

Yuba River Development Project FERC Project No. 2246

Data Sources: Base Map - ArcGIS Online Streaming Layer (Imagery); FERC Boundary-Yuba County GIS; Land Ownership-Yuba County and CD-Data; Botanical Survey Area, Non-Native Invasive Species Occurrence - HDR. Map information was compiled from the best available sources. No warranty is made for its accuracy or completeness.



- Project Features**

 - Recreation Site
 - Project Powerhouse
 - Project Dam
 - Tunnel
 - Penstock
 - FERC Boundary (No. 2246)
- Base Map**

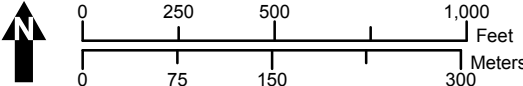
 - Stream
 - RiverMile
 - 100ft Contour
 - County Line
- Non-Project Features**

 - Powerhouse
 - Dam
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 - Yuba County Water Agency
 - US Forest Service
- USA, Administered By:**

 - US Forest Service

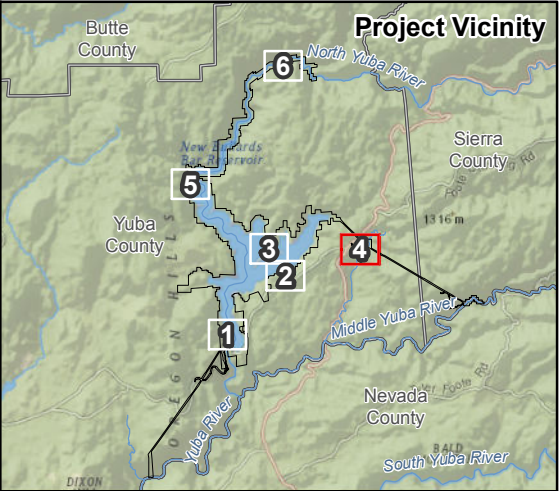
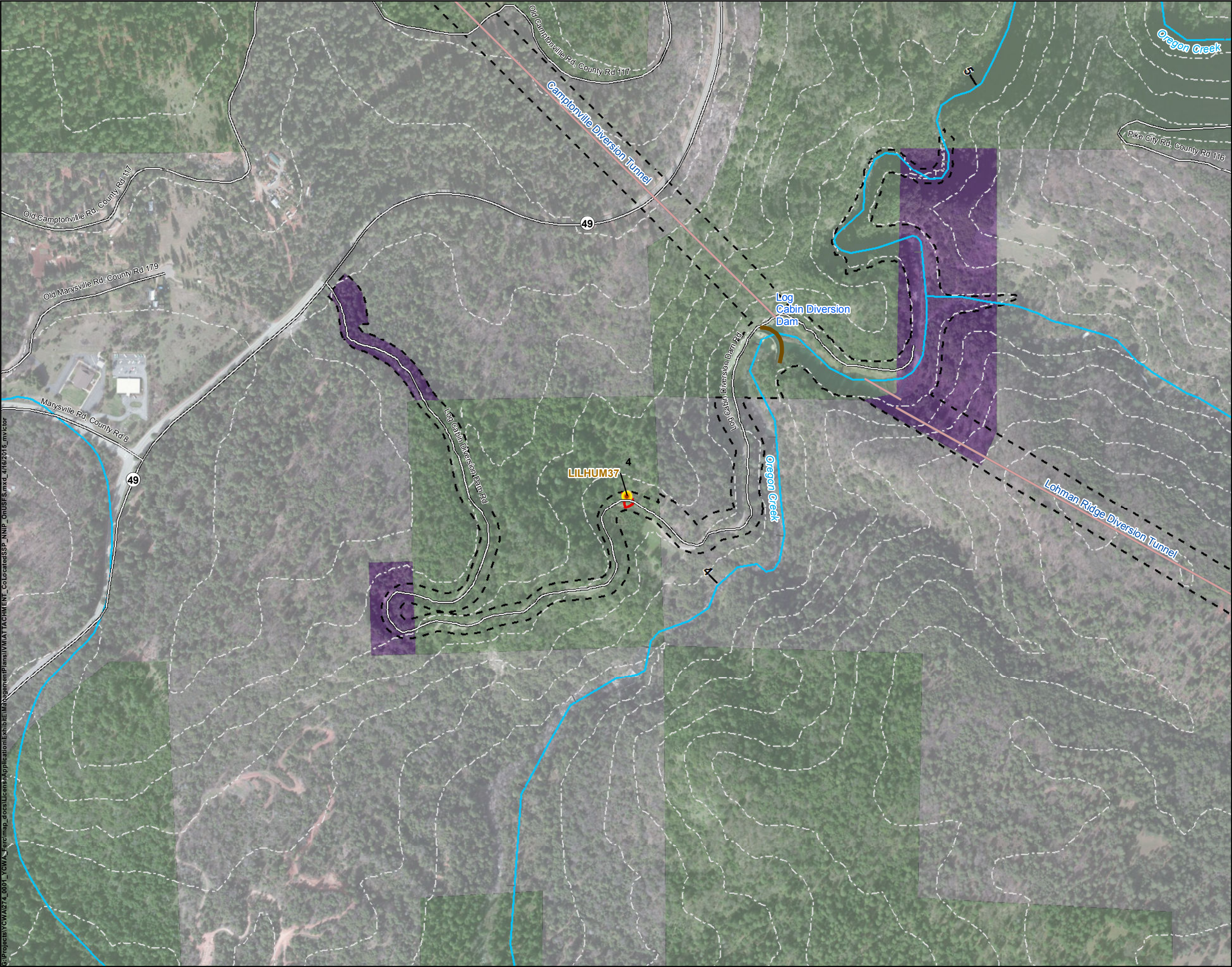
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- Lewisia cantelovii (LEWCAN) Cantelow's lewisia
 - Lilium humboldtii ssp. humboldtii (LILHUM) Humboldt lily
 - Lilium humboldtii ssp. humboldtii (LILHUM) Humboldt lily
 - Lilium humboldtii ssp. humboldtii (LILHUM) Humboldt lily



Attachment D: Special-Status Plants Collocated with Non-Native Invasive Species

Yuba River Development Project FERC Project No. 2246

Data Sources: Base Map - ArcGIS Online Streaming Layer (Imagery); FERC Boundary-Yuba County GIS; Land Ownership-Yuba County and CD-Data; Botanical Survey Area, Non-Native Invasive Species Occurrence - HDR. Map information was compiled from the best available sources. No warranty is made for its accuracy or completeness.



Project Features

- Recreation Site
- Project Powerhouse
- Project Dam
- Tunnel
- Penstock
- FERC Boundary (No. 2246)

Base Map

- Stream
- RiverMile
- 100ft Contour
- County Line

Non-Project Features

- Powerhouse
- Dam

Land Ownership

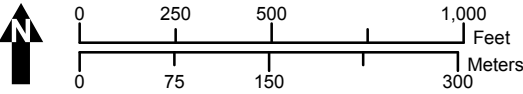
- Private (or Other)
- Yuba County Water Agency
- USA, Administered By:
- US Forest Service

Non-Native Invasive Plants

- Cytisus scoparius (CYTSKO) - Scotch broom
- Rubus armeniacus (RUBARM) - Himalayan blackberry

Special-Status Plants

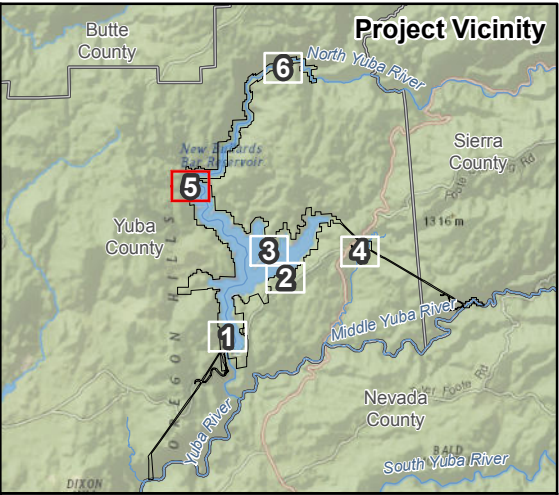
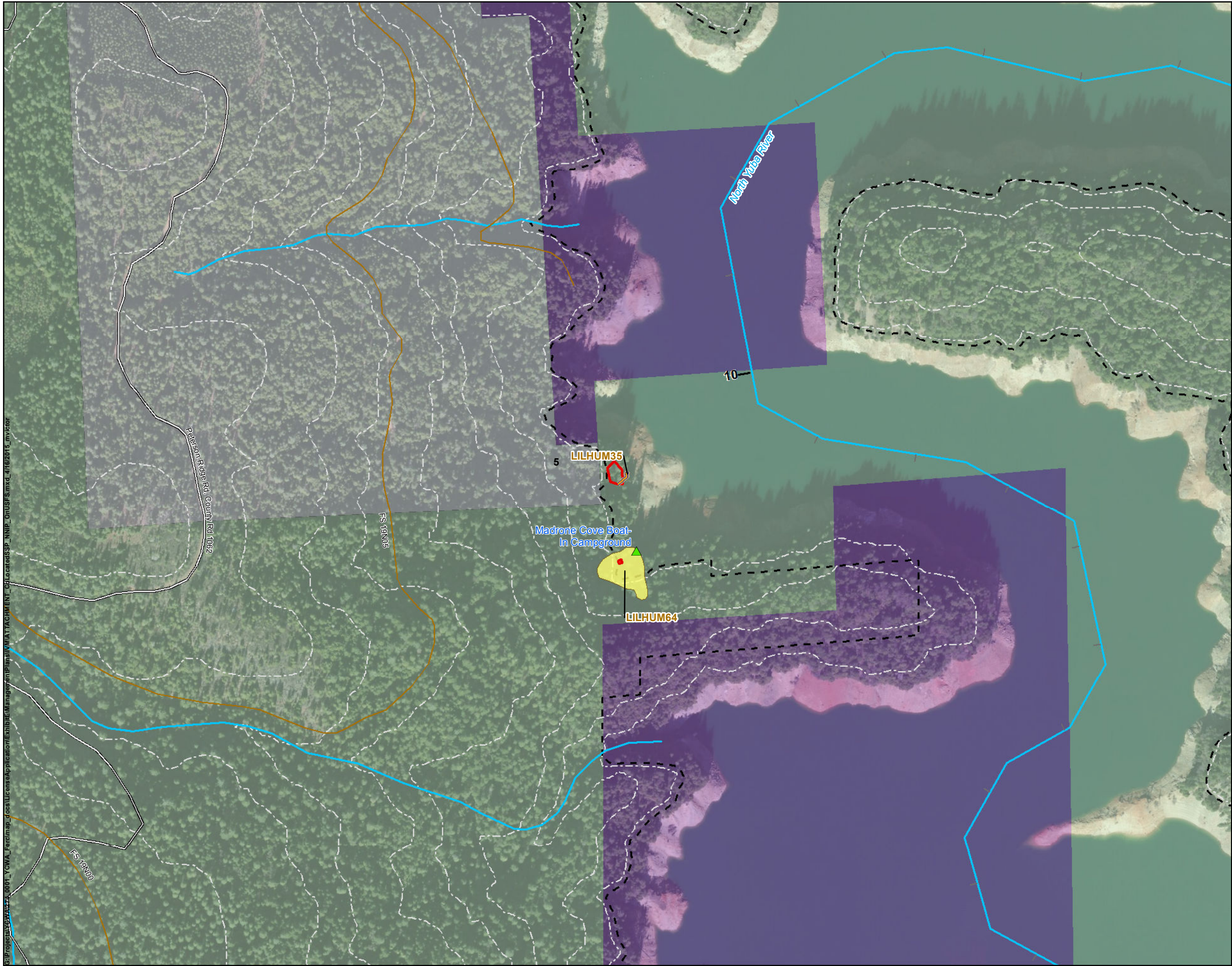
- Lewisia cantelovii (LEWCAN) - Cantelow's lewisia
- Lilium humboldtii ssp. humboldtii (LILHUM) - Humboldt lily
- Lilium humboldtii ssp. humboldtii (LILHUM) - Humboldt lily
- Lilium humboldtii ssp. humboldtii (LILHUM) - Humboldt lily



Attachment D: Special-Status Plants Collocated with Non-Native Invasive Species

**Yuba River Development Project
FERC Project No. 2246**

Data Sources: Base Map - ArcGIS Online Streaming Layer (Imagery); FERC Boundary-Yuba County GIS; Land Ownership-Yuba County and CD-Data; Botanical Survey Area, Non-Native Invasive Species Occurrence - HDR. Map information was compiled from the best available sources. No warranty is made for its accuracy or completeness.



Project Features

- Recreation Site
- Project Powerhouse
- Project Dam
- Tunnel
- Penstock
- FERC Boundary (No. 2246)

Base Map

- Stream
- RiverMile
- 100ft Contour
- County Line

Non-Project Features

- Powerhouse
- Dam

Land Ownership

- Private (or Other)
- Yuba County Water Agency

USA, Administered By:

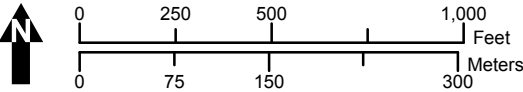
- US Forest Service

Non-Native Invasive Plants

- Cytisus scoparius (CYTSCO) Scotch broom
- Rubus armeniacus (RUBARM) Himalayan blackberry

Special-Status Plants

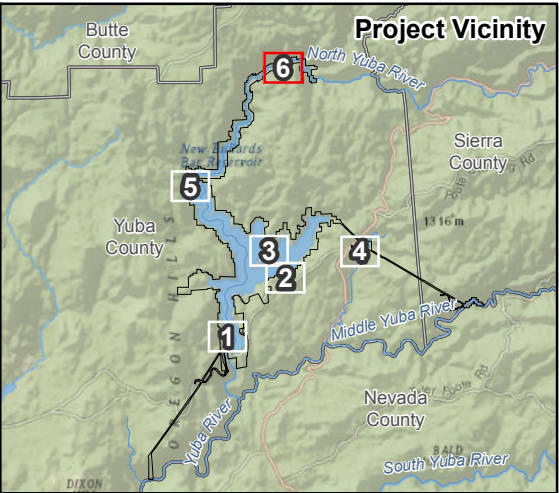
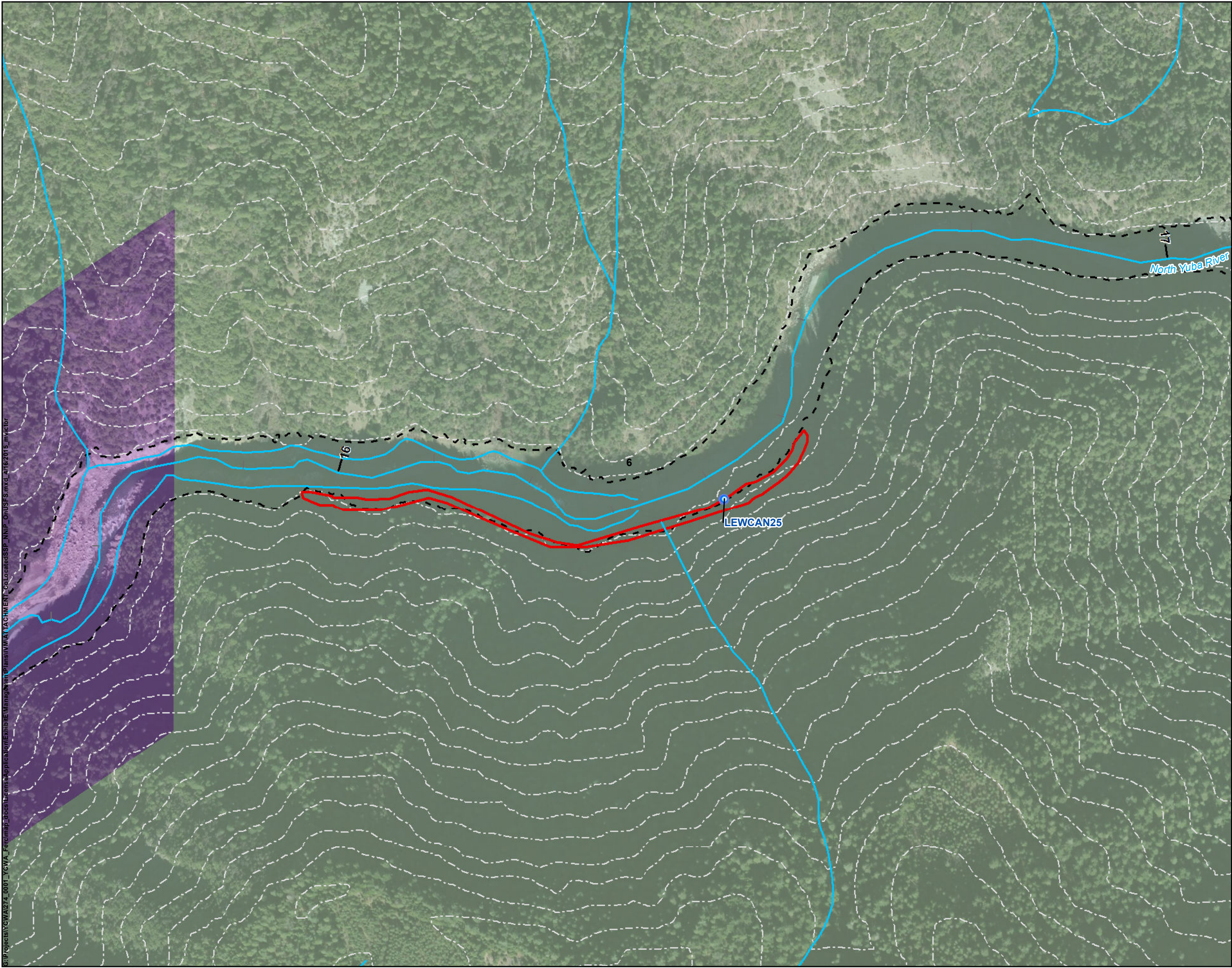
- Lewisia cantelovii (LEWCAN) Cantelow's lewisia
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Attachment D: Special-Status Plants Collocated with Non-Native Invasive Species

**Yuba River Development Project
FERC Project No. 2246**

Data Sources: Base Map - ArcGIS Online Streaming Layer (Imagery); FERC Boundary-Yuba County GIS; Land Ownership-Yuba County and CD-Data; Botanical Survey Area, Non-Native Invasive Species Occurrence - HDR. Map information was compiled from the best available sources. No warranty is made for its accuracy or completeness.



- Project Features**

 - Recreation Site
 - Project Powerhouse
 - Project Dam
 - Tunnel
 - Penstock
 - FERC Boundary (No. 2246)
- Base Map**

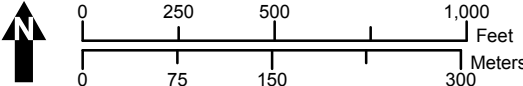
 - Stream
 - RiverMile
 - 100ft Contour
 - County Line
- Non-Project Features**

 - Powerhouse
 - Dam
- Land Ownership**

 - Yuba County Water Agency
 - US Forest Service
- USA, Administered By:**

 - US Forest Service

- Non-Native Invasive Plants**
- Cytisus scoparius (CYTSKO) Scotch broom
 - Rubus armeniacus (RUBARM) Himalayan blackberry
- Special-Status Plants**
- Lewisia cantelovii (LEWCAN) Cantelow's lewisia
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Attachment D: Special-Status Plants Collocated with Non-Native Invasive Species

Yuba River Development Project FERC Project No. 2246

Data Sources: Base Map - ArcGIS Online Streaming Layer (Imagery); FERC Boundary-Yuba County GIS; Land Ownership-Yuba County and CD-Data; Botanical Survey Area, Non-Native Invasive Species Occurrence - HDR. Map information was compiled from the best available sources. No warranty is made for its accuracy or completeness.

Integrated Vegetation Management Plan

Attachment E

Pesticide Use Proposal

Yuba River Development Project

FERC Project No. 2246

October 2019

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PESTICIDE-USE PROPOSAL (Reference FSM 2150)To complete this form, see **Instructions for Form FS-2100-2, Pesticide-Use Proposal**

AGENCY/ COOPERATOR	CONTACT NAME, PHONE NUMBER, and E-MAIL	REGION	FOREST/ DISTRICT	DATE SUBMITTED
1) OBJECTIVE a) Project name and/or identifier b) Specific target pest(s) c) Purpose				
2) PESTICIDE PRODUCT(S) a) Trade name b) Formulation as purchased c) Restricted-use pesticide (yes/no) d) EPA registration number e) Common name of chemical(s) f) AI, AE, IU, or PIB expressed as % or concentration				
3) TYPE OF APPLICATION a) Method b) Equipment				
4) FIELD APPLICATION INFORMATION a) Formulation of material to be applied b) Planned application rate c) Dilution rate d) Diluent e) Pounds of AI or AE per acre (or other applicable rate) f) Other pesticides being applied to proposed treatment site(s)				
5) TREATMENT AREA DESCRIPTION a) Targeted treatment area b) State and county c) Site description d) Estimate of acres (or other unit) to be treated e) Number of applications f) Month(s) and year(s) of application				
6) SENSITIVE AREAS a) Special designated area (if applicable) b) Areas to be avoided c) Areas to be treated with caution				
7) PROJECT IMPLEMENTATION a) Trained/certified personnel to be used b) Personal safety c) State and local coordination d) Best management practices e) Monitoring f) Additional project information				
8) REVIEWER(S) SIGNATURE(S) a) Pesticide use coordinator Date: b) Other reviewer(s) (as necessary) Date:				
9) APPROVAL (signature of approving official) Date:				

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Integrated Vegetation Management Plan

Attachment F

Agency Concurrence

Yuba River Development Project

FERC Project No. 2246

October 2019

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Robinson, Shakara

From: Lynch, Jim
Sent: Wednesday, October 16, 2019 7:53 AM
To: Robinson, Shakara; Tansey-Rodarmel, Jenna
Subject: FW: USFWS Approval of IVM Plan and Eagle/Falcon Plan

James Lynch
D 916.679.8740 M 916.802.6247

hdrinc.com/follow-us

From: Welsh, Daniel [mailto:daniel_welsh@fws.gov]
Sent: Wednesday, October 16, 2019 7:30 AM
To: caikens@yubawater.org
Cc: grabone@yubawater.org; Lynch, Jim <Jim.Lynch@hdrinc.com>; Millsap, Stephanie <stephanie_millsap@fws.gov>
Subject: USFWS Approval of IVM Plan and Eagle/Falcon Plan

Curt,

The US Fish and Wildlife Service (USFWS) supports Yuba Water Agency's (YWA) finalization of the Integrated Vegetation Management Plan and the Bald Eagle and the American Peregrine Falcon Management Plan (collectively, Plans) for the Yuba River Development Project (FERC Project # P-2246) dated October 2019.

USFWS, YWA, and other agencies have collaboratively revised these Plans, consistent with the changes identified by FERC in the Final Environmental Impact Statement. The revised plans will be submitted to FERC by YWA.

If you have any questions about our support for the revised plans, please contact me or Stephanie Millsap.

Sincerely,

Dan Welsh, Deputy Field Supervisor
U.S. Fish and Wildlife Service
San Francisco Bay-Delta Fish and Wildlife Office
[650 Capitol Mall, Suite 8-300](#)
[Sacramento, CA 95814](#)
(916) 930-5639 (office)
(916) 468-8470 (cell)
Daniel_Welsh@fws.gov

Robinson, Shakara

From: Traci Sheehan <traci@foothillswaternetwork.org>
Sent: Wednesday, October 23, 2019 7:48 AM
To: Lynch, Jim
Cc: Lind, Amy -FS; Thomas.holley@noaa.gov; alison_willy@fws.gov; Stephanie Millsap (USFWS); Cornell, MaryLisa@Wildlife; Lawson, Beth@Wildlife; Lose, Sarah@Wildlife; Smith, Jordan@Waterboards; Chris Shutes; Dan.Teater@usda.gov; Purchase, Carol E -FS; rachel@yubariver.org; Ashley Overhouse; traci.sheehan@gmail.com; sean.hoobler@wildlife.ca.gov; Geoff Rabone; Willie Whittlesey; Avinash Sandher; Jacob Vander Meulen; Marie Rainwater; Vertucci, Charles; Tansey-Rodarmel, Jenna; Robinson, Shakara
Subject: Re: Yuba Relicensing: Follow-up from 10/2 Conference Call - NEED EMAIL SIGN-OFFS BY COB 10/31

The Network has no changes to the letter or plans. You can include the Network. Thank you.

Traci Sheehan

On Oct 9, 2019, at 9:45 AM, Lynch, Jim <Jim.Lynch@hdrinc.com> wrote:

All – As mentioned in the email below, I have attached for your review a draft letter to FERC filing the five plans, with evidence of consultation. If you would, let me know if you have any suggested changes to the letter.

Also, Stephanie pointed out some things we missed correcting on the IVMP, which we have now corrected, and a clean version is posted at the link below. Thanks, Stephanie.

James Lynch
D 916.679.8740 M 916.802.6247

hdrinc.com/follow-us

From: Lynch, Jim
Sent: Friday, October 4, 2019 7:04 AM
To: 'Lind, Amy -FS' <amy.lind@usda.gov>; 'Thomas.holley@noaa.gov' <Thomas.holley@noaa.gov>; 'alison_willy@fws.gov' <alison_willy@fws.gov>; 'Stephanie Millsap (USFWS)' <stephanie_millsap@fws.gov>; 'Cornell, MaryLisa@Wildlife' <MaryLisa.Cornell@wildlife.ca.gov>; 'Lawson, Beth@Wildlife' <Beth.Lawson@wildlife.ca.gov>; 'Lose, Sarah@Wildlife' <Sarah.Lose@wildlife.ca.gov>; 'Smith, Jordan@Waterboards' <Jordan.Smith@Waterboards.ca.gov>; 'Chris Shutes' <blancapaloma@msn.com>; 'traci@foothillswaternetwork.org' <traci@foothillswaternetwork.org>; 'Dan.Teater@usda.gov' <Dan.Teater@usda.gov>; 'Purchase, Carol E -FS' <carol.purchase@usda.gov>; 'rachel@yubariver.org' <rachel@yubariver.org>; 'Ashley Overhouse' <ashley@yubariver.org>; 'traci.sheehan@gmail.com' <traci.sheehan@gmail.com>; 'sean.hoobler@wildlife.ca.gov' <sean.hoobler@wildlife.ca.gov>
Cc: 'Geoff Rabone' <grabone@yubawater.org>; 'Willie Whittlesey' <wwhittlesey@yubawater.org>; 'Avinash Sandher' <asandher@yubawater.org>; 'Jacob Vander Meulen'

Robinson, Shakara

From: Lose, Sarah@Wildlife <Sarah.Lose@wildlife.ca.gov>
Sent: Thursday, October 31, 2019 9:47 AM
To: Lind, Amy -FS; Lynch, Jim; 'Thomas.holley@noaa.gov'; 'alison_willy@fws.gov'; Stephanie Millsap (USFWS; Cornell, MaryLisa@Wildlife; Lawson, Beth@Wildlife; Smith, Jordan@Waterboards; blancapaloma@msn.com; 'traci@foothillswaternetwork.org'; Teater, Dan -FS; Purchase, Carol E -FS; rachel@yubariver.org; Ashley Overhouse; traci.sheehan@gmail.com; Hoobler, Sean@Wildlife
Cc: Geoff Rabone; Willie Whittlesey; Avinash Sandher; Jacob Vander Meulen; Marie Rainwater; Vertucci, Charles; Tansey-Rodarmel, Jenna; Robinson, Shakara; Alvarez, Dawn -FS
Subject: RE: Yuba Relicensing: Follow-up from 10/2 Conference Call - NEED EMAIL SIGN-OFFS BY COB 10/31

CDFW is ok with the revisions to these plans. Please file with FERC and thank you for your collaboration.

Sarah C. Lose
Senior Environmental Scientist (Specialist)
CA. Dept of Fish and Wildlife/North Central Region
Water Program-FERC Coordinator
1701 Nimbus Rd.
Rancho Cordova, CA. 95670
(916) 747-5226: cell

From: Lind, Amy -FS <amy.lind@usda.gov>
Sent: Wednesday, October 23, 2019 2:28 PM
To: Lynch, Jim <Jim.Lynch@hdrinc.com>; 'Thomas.holley@noaa.gov' <Thomas.holley@noaa.gov>; 'alison_willy@fws.gov' <alison_willy@fws.gov>; Stephanie Millsap (USFWS <stephanie_millsap@fws.gov>; Cornell, MaryLisa@Wildlife <MaryLisa.Cornell@wildlife.ca.gov>; Lawson, Beth@Wildlife <Beth.Lawson@wildlife.ca.gov>; Lose, Sarah@Wildlife <Sarah.Lose@wildlife.ca.gov>; Smith, Jordan@Waterboards <Jordan.Smith@Waterboards.ca.gov>; blancapaloma@msn.com; 'traci@foothillswaternetwork.org' <traci@foothillswaternetwork.org>; Teater, Dan -FS <dan.teater@usda.gov>; Purchase, Carol E -FS <carol.purchase@usda.gov>; rachel@yubariver.org; Ashley Overhouse <ashley@yubariver.org>; traci.sheehan@gmail.com; Hoobler, Sean@Wildlife <Sean.Hoobler@wildlife.ca.gov>
Cc: Geoff Rabone <grabone@yubawater.org>; Willie Whittlesey <wwhittlesey@yubawater.org>; Avinash Sandher <asandher@yubawater.org>; Jacob Vander Meulen <jvandermeulen@yubawater.org>; Marie Rainwater <marie@rainwater-associates.com>; Vertucci, Charles <Charles.Vertucci@hdrinc.com>; Tansey-Rodarmel, Jenna <Jenna.Tansey-Rodarmel@hdrinc.com>; Robinson, Shakara <Shakara.Robinson@hdrinc.com>; Alvarez, Dawn -FS <dawn.alvarez@usda.gov>
Subject: RE: Yuba Relicensing: Follow-up from 10/2 Conference Call - NEED EMAIL SIGN-OFFS BY COB 10/31

Jim/HDR and YCWA – Thank for getting these edits completed (and thanks to Stephanie for catching the issues in the IVMP). Our comments on the cover letter are attached.

Forest Service staff are in agreement on these revisions to these five management plans - Aquatic Invasive Species, Hazardous Material Management Plan, Bald Eagle, Integrated Vegetation Management Plan, and New Bullards Bar Fish Stocking.

Robinson, Shakara

From: Lind, Amy -FS <amy.lind@usda.gov>
Sent: Wednesday, October 23, 2019 2:28 PM
To: Lynch, Jim; 'Thomas.holley@noaa.gov'; 'alison_willy@fws.gov'; Stephanie Millsap (USFWS; Cornell, MaryLisa@Wildlife; Lawson, Beth@Wildlife; Lose, Sarah@Wildlife; Smith, Jordan@Waterboards; blancapaloma@msn.com; 'traci@foothillswaternetwork.org'; Teater, Dan -FS; Purchase, Carol E -FS; rachel@yubariver.org; Ashley Overhouse; traci.sheehan@gmail.com; 'sean.hoobler@wildlife.ca.gov'
Cc: Geoff Rabone; Willie Whittlesey; Avinash Sandher; Jacob Vander Meulen; Marie Rainwater; Vertucci, Charles; Tansey-Rodarmel, Jenna; Robinson, Shakara; Alvarez, Dawn -FS
Subject: RE: Yuba Relicensing: Follow-up from 10/2 Conference Call - NEED EMAIL SIGN-OFFS BY COB 10/31
Attachments: 2019 - Filing of Five Amended Management Plans - Draft - JML100919_FS.docx

Jim/HDR and YCWA – Thank for getting these edits completed (and thanks to Stephanie for catching the issues in the IVMP). Our comments on the cover letter are attached.

Forest Service staff are in agreement on these revisions to these five management plans - Aquatic Invasive Species, Hazardous Material Management Plan, Bald Eagle, Integrated Vegetation Management Plan, and New Bullards Bar Fish Stocking.

I checked in with our Regional Office on the process for revising these Plans previously filed as Forest Service FPA Final 4e Conditions. As I understand it at this point, YCWA would refile the plans with FERC, and then the Forest Service would do a limited refiling of our Final 4e Conditions referencing the new filing dates and FERC eLibrary accession numbers for the five plans. Please provide an update on your timeline for filing the revised plans, so that I can work with our Regional Office to follow with the revised 4e's in a timely manner.

Thank you,
Amy



Amy Lind
Hydroelectric Coordinator
Forest Service
Tahoe and Plumas National Forests

p: 530-478-6298
amy.lind@usda.gov

631 Coyote St.
Nevada City, CA 95959
www.fs.fed.us



Caring for the land and serving people

Please note my new email, and update your address books.

From: Lynch, Jim [mailto:Jim.Lynch@hdrinc.com]
Sent: Wednesday, October 9, 2019 9:45 AM
To: Lind, Amy -FS <amy.lind@usda.gov>; 'Thomas.holley@noaa.gov' <Thomas.holley@noaa.gov>;