Study 5.1

SPECIAL-STATUS PLANTS

November 2010

1.0 Project Nexus

Yuba County Water Agency's (YCWA or Licensee) continued operation and maintenance (O&M) of the Yuba River Development Project (Project) may have an effect on special-status[1] plants.

2.0 Resource Management Goals of Agencies with Jurisdiction Over the Resource to be Studied

The following was provided to Licensee by the United States Department of Agriculture, Forest Service (Forest Service) as a description of the Forest Service's management goals for special-status plants on National Forest System (NFS) land as identified in the National Forest Management Act (NFMA, public Law 94-588 1976) and the Tahoe National Forest TNF) Land and Resource Management Plan (TNF LRMP), as amended by the Sierra Nevada Forest Plan Amendment (USDA Forest Service 2001a and 2001b) and the Supplemental Sierra Nevada Forest Plan Amendment (USDA Forest Service 2004a and 2004b):

- Region 5, Regional Forester Sensitive Species: Manage Region 5 Regional Forester's sensitive species to ensure that species do not become federally listed as threatened or endangered. Coordinate with YCWA so that management activities within the FERC boundary evaluate the potential impacts of projects to sensitive species, and address measures for maintaining viable populations and possible alternatives to mitigate or avoid impacts.

- TNF Watch List Plants and Plant Communities: Manage TNF Watch List plants and plant communities so they are conserved and contribute to the diversity of plants and plant habitats on the Forest.

[1] For the purposes of this Relicensing, special-status plants are considered those plants that are: 1) found on National Forest Service (NFS) land managed by the United States Department of Agriculture, Forest Service (Forest Service) and formally listed on the Forest Service's List of Sensitive Plant Species for the Plumas National Forest (FSS-P) or the Tahoe National Forest (FSS-T) or as a Watch List Species by the Plumas National Forest (FW-P) or the Tahoe National Forest (FW-T); 2) found on the CDFG's list of California Rare (SR) species, listed under the Native Species Protection Act of 1977; 3) listed under the federal ESA as Proposed or a Candidate for listing as endangered or threatened; 4) listed under the CESA as proposed for listing as endangered or threatened; or 5) found on the California Native Plant Society (CNPS) Inventory of Rare Plants and formally listed as a CNPS 1, 2 3 or 4 plant (CNPS 1, CNPS 2, CNPS 3, CNPS 4). Special-status plants do not include plants that are listed as threatened or endangered under the ESA or CESA, which are addressed separately for the purpose of the Relicensing.

3.0 Study Goals and Objectives

The goal of this study is to provide information to determine whether continued Project O&M or recreational use of Project facilities may have an adverse effect on special-status plant species.

The objective of this study is to gather the information necessary to perform this analysis.

4.0 Existing Information and Need for Additional Information

As discussed in section 7.5 of Licensee's Preliminary Information Package (YCWA 2009), existing and relevant information regarding known and potentially occurring special-status plants in the Project Vicinity[2] is available from the California Natural Diversity Database (CNDDB) (CDFG 2009), and California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants database (CNPS 2009), as well as TNF and Plumas National Forest (PNF) records. Based on this information, Licensee identified 36 plants species that are listed as special-status and have a reasonable potential to occur on the Project. Table 4.0-1 provides for each of the special-status plant species: 1) status; 2) flowering period; 3) elevation range; 4) habitat requirements; and 5) documented occurrence in the Project Vicinity.

Table 4.0-1. Special-status plants known or with the potential to occur in the Project Vicinity.

Common Name/ Scientific Name	Status[1]	Flowering Period	Elevation Range (ft)	Habitat Requirements	Occurrence in Project Vicinity[2]
Henderson's bent grass *Agrostis hendersonii*	FW-P CNPS 3	Apr-Jun	200-1,000	Valley and foothill grasslands, vernal pools	Present in the Project Vicinity, including Brush Creek quadrangle
Webber's milk-vetch *Astragalus webberi*	FSS	May-Jul	2700-4000	Lower montane coniferous forest	Potential to occur in the Project Boundary
Big-scale balsamroot *Balsamorhiza macrolepis* var. *macrolepis*	CNPS 1B	Mar-Jun	300-4,600	Chaparral, cismontane woodland, and valley and foothill grassland (sometimes serpentine)	Present in the Project Vicinity, including the Brush Creek quadrangle
Dissected-leaved toothwort *Cardamine pachystigma* var. *dissectifolia*	CNPS 3	Feb-May	800-6,900	Chaparral, lower montane coniferous forest	Present in the Project Vicinity, including Cascade , Brush Creek and Forbestown quadrangles
Red Hills soaproot *Chlorogalum grandiflorum*	FSW BLM	May-Jun	800-3800	Chaparral, cismontane woodland, lower montane coniferous forest, serpentine/gabbro	Potential to occur in Project Boundary.
Brandegee's clarkia *Clarkia biloba* ssp. *brandegeeae*	FSS-P FSS-T CNPS 1B	May-Jul	200-3,000	Chaparral, cismontane woodland, often roadcuts	Present in the Project Vicinity, including Pike, Camptonville, Challenge, French Corral, and Oregon House quadrangles
White-stemmed clarkia *Clarkia gracilis* ssp. *albicaulis*	FSS-P CNPS 1B	May-Jul	800-3,500	Chaparral, cismontane woodland/sometimes serpentine	Present in the Project Vicinity, including the Forbestown quadrangle
Mildred's clarkia *Clarkia mildrediae* ssp. *mildrediae*	FSS-P CNPS 1B	May-Aug	800-5,600	Cismontane woodland, lower montane coniferous forest/sandy, usually granitic	Present in the Project Vicinity, including the Brush Creek quadrangle
Mosquin's clarkia *Clarkia mosquinii*	FSS-P CNPS 1B	May-Jul	600-4,000	Cismontane woodland, lower montane coniferous forest/rocky, roadsides	Present in the Project Vicinity, including Clipper Mills, Strawberry Valley, Cascade, and Brush Creek quadrangles

[2] For the purposes of the Relicensing, the Project Vicinity is defined as the area surrounding the Project in the order of a county or USDOI, United States Geological Survey (USGS) 1:24,000 topographic quadrangle.

Table 4.0-1. (continued)

Common Name/ Scientific Name	Status[1]	Flowering Period	Elevation Range (ft)	Habitat Requirements	Occurrence in Project Vicinity[2]
Clustered lady's-slipper *Cypripedium fasciculatum*	FSS	Mar-Aug	500-7200	Lower montane coniferous forest, North Coast coniferous forest, mixed conifer	Potential to occur in Project Boundary
Mountain lady's-slipper *Cypripedium montanum*	FSS	Mar-Aug	600-7500	Broadleafed upland forest, cismontane woodland, lower montane coniferous forest, North Coast coniferous forest, mixed conifer	Potential to occur in the Project Boundary
Northern yellow lady's-slipper *Cypripedium parviflorum var. makasin*	CNPS 3	May-Aug	0-4,900	Bogs and fens, meadows and seeps	Present in Project Vicinity, including the Strawberry Valley quadrangle
Norris' beard moss *Didymodon norrisii*	FW-P CNPS 2	---	1,950-6,400	Cismontane woodland, lower montane coniferous forest	Potential to occur in Project Boundary
Dwarf downingia *Downingia pusilla*	CNPS 2	Mar-May	-0-1,400	Valley and foothill grassland, vernal pools	Potential to occur in Project Boundary
Clifton's eremogone *Eremogone cliftonii*	FW-P CNPS 1B	Apr-Sep	1,500-5,800	Chaparral, lower and upper montane coniferous forest/openings, usually granitic	Present in the Project Vicinity, including Cascade and Brush Creek quadrangles
Northern Sierra daisy *Erigeron petrophilus var. sierrensis*	FSW	Jun-Oct	900-5700	Cismontane woodland, lower montane coniferous forest, upper montane coniferous forest, rocky soils	Potential to occur in the Project Boundary; present in the TNF
Minute pocket moss *Fissidens pauperculus*	FSS-P CNPS 1B	---	0-3,600	Not well known	Present in the Project Vicinity, including Cascade, Brush Creek, and Forbestown quadrangles
Butte County fritillary *Fritillaria eastwoodiae*	FSS-P FSS-T CNPS 3	Mar-Jun	150-4,900	Chaparral, cismontane woodland, lower montane coniferous forest, sometimes serpentinite	Present in Project Vicinity, including Challenge, French Corral, Clipper Mills, North Bloomfield, Washington, Rackerby, Cascade, Brush Creek, Forbestown, and Nevada City quadrangles
Ahart's dwarf rush *Juncus leiospermus var. ahartii*	CNPS 1B	Mar-May	100-750	Valley and foothill grassland	Present in Project Vicinity, including the Loma Rica quadrangle
Dubious pea *Lathyrus sulphureus var. argillaceus*	CNPS 3	Apr-May	500-1,000	Cismontane woodland, upper and lower montane coniferous forest	Present in the Project Vicinity, including Rough and Ready and Wolf quadrangles
Legenere *Legenere limosa*	CNPS 1B	Apr-Jun	0-2,900	Vernal pools	Potential to occur in Project Boundary
Cantelow's lewisia *Lewisia cantelovii*	FSS-P FSS-T CNPS 1B	May-Oct	1,000-4,500	Broadleaf upland forest, chaparral, cismontane woodland, lower montane coniferous forest/mesic, granitic, sometimes serpentinite seeps	Present in the Project Vicinity including Pike, French Corral, Strawberry Valley, Alleghany, North Bloomfield, Washington, Goodyears Bar, Downieville, and Brush Creek quadrangles
Humboldt lily *Lilium humboldtii ssp. humboldtii*	FSW	May-Jul	1500-3500	Chaparral, cismontane woodland, lower montane coniferous forest, openings	Present in the Project Vicinity, including the Washington quadrangle
Quincy lupine *Lupinus dalesiae*	FSS	May-Aug	3000-8000	Chaparral, cismontane woodland, lower montane coniferous forest, upper montane coniferous forest	Present in the Project Vicinity, including La Port and Goodyears Bar quadrangles
Bog club-moss *Lycopodiella inundata*	CNPS 2	Jun-Sept	0-3,300	Bogs and fens, lower montane coniferous forest, marshes and swamps	Present in the Project Vicinity, including the North Bloomfield quadrangle
Elongate copper moss *Mielichhoferia elongata*	FSS-T CNPS 2	---	1,600-4,300	Vernally wet rock in cismontane woodland (metamorphic rock, usually vernally mesic)	Present in the Project Vicinity, including Washington and Nevada City quadrangles

Table 4.0-1. (continued)

Common Name/ Scientific Name	Status[1]	Flowering Period	Elevation Range (ft)	Habitat Requirements	Occurrence in Project Vicinity[2]
Cut-leaved monkey flower *Mimulus lacinatus*	FSW	Apr-Jun	1500-9000	Chaparral, lower montane coniferous forest, upper montane coniferous forest, seeps in granite	Potential to occur in Project Boundary
Follett's monardella *Monardella follettii*	FSS-P FSS-T CNPS 1B	Jun-Sep	1,900-6,600	Lower montane coniferous forest (rocky, serpentinite)	Present in the Project Vicinity, including the Grass Valley quadrangle
Bacigalupi's yampah *Perideridia bacigalupi*	FSW	Jun-Aug	1700-3500	Chaparral, lower montane coniferous forest, serpentine	Potential to occur in Project Boundary; present in the TNF
Cedar Crest popcorn flower *Plagiobothrys glyptocarpus var. modestus*	CNPS 3	Apr-Jun	2,850	Cismontane woodland, valley and foothill grassland	Present in the Project Vicinity, including Oregon House and Grass Valley quadrangles
Slender-leaved pondweed *Potamogeton filiformis*	FSW	May-Jul	950-7050	Marshes and swamps, lakes and ponds	Potential to occur in Project Boundary
Green- flowered wintergreen *Pyrola chloantha*	CNPS 1A	Jun-Jul	2,950	Lower montane coniferous forest	Present in the Project Vicinity, including the Downieville quadrangle
White beaked-rush *Rhynchospora alba*	FSW	Jul-Aug	200-6700	Meadows and seeps, marshes and swamps, wet places	Potential to occur in Project Boundary; present in the TNF
Brownish beaked-rush *Rhynchospora capitellata*	FW-P FW-T CNPS 2	Jul-Aug	1,500-6,600	Upper and lower montane coniferous forest, meadows and seeps, marshes and swamps	Present in Project Vicinity, including Pike, Clipper Mills, Grass Valley, North Bloomfield, Cascade, Brush Creek, and Nevada City quadrangles
Tracy's sanicle *Sanicula tracyi*	CNPS 4	Apr-Jul	300-5,200	Cismontane woodland, lower montane coniferous forest, upper montane coniferous forest	Present in Project Vicinity, including the Clipper Mills quadrangle
Cylindrical trichodon *Trichodon cylindricus*	FW-P CNPS 2	---	150-6,600	Broadleaf upland forest, meadows and seeps, upper montane coniferous forest/sandy, exposed soil, roadbanks	Present in the Project Vicinity, including the La Porte quadrangle

[1] Special-status:
FE: Federal Endangered Species
FT: Federal Threatened Species
SE: California Endangered Species
SR: California Rare Species
ST: California Threatened Species
CNPS: California Native Plant Society listed species
1A: Species presumed extinct in California
1B: Species considered rare or endangered in California and elsewhere (no legal protection)
2: Species considered rare or endangered in California but more common elsewhere (no legal protection)
3: More information needed about this species
4: Limited distribution; watch list
FSS: Forest Service Sensitive (FSS-P-Plumas National Forest; FSS-T-Tahoe National Forest) (USDA-FS 2010)
FW: Forest Watchlist (FW-P- Plumas National Forest FW-T-Tahoe National Forest) (USDA-FS 2010)

[2] Occurrence in Project Vicinity results based on a CNPS quadrangle search.

None of the available CNDDB reports are from surveys within the existing FERC Project Boundary.[3]

Additional information is needed to address the study goal is the specific location of special-status plants in relation to Project facilities, normal Project O&M activities, Project recreation, and any other Project-related activities that might affect special-status plants.

[3] The existing FERC Project Boundary is the area that Licensee uses for normal Project operations and maintenance, and is shown on Exhibits J, K, and G of the current license.

5.0 Study Methods and Analysis

5.1 Study Area

The study area consists of the area within the existing FERC Project Boundary. This includes all Project facilities and features (*e.g.*, dams, powerhouses and reservoirs) as well as Project recreation areas. The study area will also include a buffer of 100 feet extending upslope from the high-water mark of the Project reservoirs and from the FERC Project Boundary around Project recreation facilities.

If YCWA proposes an addition to the Project, the study area will be expanded if necessary to include areas potentially affected by the addition.

5.2 General Concepts and Procedures

The following general concepts and practices apply to the study:

- Personal safety is the most important consideration of each fieldwork team.
- Licensee will make a good faith effort to obtain permission to access private property where needed well in advance of entering the property.
- Field crews may make minor variances to the FERC-approved study in the field to accommodate actual field conditions and unforeseen problems. When minor variances are made, Licensee's field crew will follow the protocols in the FERC-approved study.
- When Licensee becomes aware of major variances to the FERC-approved study, Licensee will issue an e-mail to the Relicensing Contact List describing the variance and reason for the variance. Licensee will contact by phone the Forest Service (if the variance is on National Forest System land), USFWS, SWRCB and CDFG to provide an opportunity for input regarding how to address the variance. Licensee will issue an e-mail to the Relicensing Contact List advising them of the resolution of the variance. Licensee will summarize in the final study report all variances and resolutions.
- Licensee's performance of the study does not presume that Licensee is responsible in whole or in part for measures that may arise from the study.
- Global Positioning System (GPS) data will be collected using either a Map Grade Trimble GPS (sub-meter data collection accuracy under ideal conditions), a Recreation Grade Garmin GPS unit (3 meter data collection accuracy under ideal conditions), or similar units. GPS data will be post-processed and exported from the GPS unit into Geographic Information System (GIS) compatible file format in an appropriate coordinate system using desktop software. The resulting GIS file will then be reviewed by both field staff and Licensee's relicensing GIS analyst. Metadata will be developed for deliverable GIS data sets.
- Licensee's field crews will record incidental observations of aquatic and wildlife species observed during the performance of this study. All incidental observations will be reported in the appropriate Licensee report (e.g., incidental observations of special-status fish recorded

during fieldwork for the Special-Status Turtles – Western Pond Turtle Study will be reported in Licensee's Stream Fish Populations Study report). The purpose of this effort is not to conduct a focus study (i.e., no effort in addition the specific field tasks identified for the specific study) or to make all field crews experts in identifying all species, but only to opportunistically gather data during the performance of the study.

- Field crews will be trained on and provided with materials (e.g. Quat) for decontaminating their boots, waders, and other equipment between study sites. Major concerns are amphibian chytrid fungus, and invasive invertebrates (e.g. zebra mussel, *Dreissena polymorpha*). This is of primary importance when moving: 1) between tributaries and mainstem reaches; 2) moving between basins (e.g. Middle Yuba River, Yuba River, and North Yuba River); and 3) moving between isolated wetlands or ponds and river or stream environments.

5.3 Methods

Study methods will consist of the following five steps: 1) gather data and prepare for field effort; 2) conduct field surveys; 3) prepare data and quality assure/quality control (QA/QC) data; 4) consult with Licensee's project operations staff; and 5) prepare report. Each step is described below.

5.3.1 Step 1 – Gather Data and Prepare for Field Efforts

Licensee will identify and map known occurrences of special-status plants within the study area, and prepare field maps for use by survey teams. The maps will include aerial imagery, Project features, and known special-status plant occurrences. Survey timing will be planned based on herbarium collection dates.

5.3.2 Step 2 – Conduct Field Surveys

Licensee's surveyors will conduct special-st**a**tus plant surveys as outlined in the "Botanical Survey" section of the California Department of Fish and Game's (CDFG) *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFG 2009)[4]. Surveys will be comprehensive over the entire Project Area using systematic field techniques to ensure thorough coverage, with additional efforts focused in habitats with a higher probability of supporting special-status plants (e.g., serpentine outcrops). Surveys will be floristic in nature, documenting all species observed; taxonomy and nomenclature will be based on *The Jepson Manual* (Hickman 1993).

When special-status plants are documented within the study area, the following information will be collected:

[4] Replaces the CDFG's *Guidelines for Assessing the Effects of Proposed Project on Rare, Threatened, and Endangered Plants and Natural Communities* (CDFG 2000).

- Digital photographs, if needed, to describe the occurrence, its habitat, and any potential threats (at least 1 digital photograph will be collected for each occurrence, with other photographs to document potential threats, or as needed)
- Estimated area (approximate length and width) covered by the special-status plant population and estimated number of individual plants in the population. If plant population is estimated to cover an area greater than 0.1 acres, surveyors will delineate the occurrence boundary using a handheld GPS, collecting either polygon data, or sufficient point data that a realistic occurrence polygon can be constructed from the point data using GIS. For occurrences less than 0.1 acre in size, location of the approximate center of the occurrence taken as point data using a handheld GPS unit
- Dominant and subdominant vegetation in the area
- Estimated distance to nearest Project facility, feature, or Project-related activity
- Activities observed in the vicinity of the population that have a potential to adversely affect the population (*e.g.*, recreational trails and uses)
- Estimated phenology and descriptions of reproductive state

Licensee's noxious weed field surveys will be conducted in conjunction with special-status plants surveys when feasible, but are expected to require separate survey work as well, to account for differences in plant phenology. For the purpose of the study, noxious weeds are defined as those plant species listed as "A," "B" or "C" by the California Department of Food and Agriculture (CDFA). Other invasive species to be recorded include species of concern to TNF and PNF that are not rated by the CDFA.

Two forms of noxious weed data will be collected and maintained, depending on the type and distribution of weeds located during survey efforts:

- Quantitative data: for discrete occurrences of weeds, data collected will include GPS-derived location, nearby sources of dispersal (e.g., roads), surrounding vegetation composition, and any nearby resource concerns (e.g., special-status plant occurrences), and an estimate of area covered, within the following classes: <0.01 acre; <0.1 acre; <1 acre; <5 acres; >5 acres.
- Qualitative data: for widespread weeds, or for those weeds for which detailed mapping is unlikely to remain accurate (e.g., annual grasses, which change distributions yearly), the Licensee will describe general distribution and extent within the study area.

Known and potential noxious weed occurrences are listed in Table 5.3-1 (USDA-NRCS 2009, Cal-IPC 2006). A total of 33 noxious weeds are known to occur or have the potential to occur within the Project Vicinity.

Table 5.3.2-1. Target list of weeds for which occurrences[1] will be recorded during performance of the Special-Status Plants Study

Common Name/ Scientific Name	CDFA Status[1]	Flowering Period	Elevation(ft)	Habitat
Russian knapweed *Acroptilon repens* [*Centaurea repens*]	B	May-Sept	Below 6,200	Fields, roadsides, cultivated ground, disturbed areas
Barb goatgrass *Aegilops triuncialis*	B	May-Aug	Below 3,300	Disturbed sites, cultivated fields, roadsides
Giant reed *Arundo donax*	B	Mar-Nov	Below 1,700	Riparian areas, floodplains, and ditches
Cheatgrass *Bromus tectorum*	Not rated	May-June	Below 6,000	Fields, roadsides, cultivated ground, disturbed areas
Plumeless thistle *Carduus acanthoides*	A	May-Aug	Below 4,300	Roadsides, pastures, waste areas
Musk thistle *Carduus nutans*	A	Jun-Jul	330-4,000	Roadsides, pastures, waste areas
Italian thistle *Carduus pycnocephalus*	C	May-Jul	Below 3,300	Roadsides, pastures, waste areas
Woolly distaff thistle *Carthamus lanatus*	B	July-Aug	Below 3,600	Disturbed sites
Purple starthistle *Centaurea calcitrapa*	B	Jul-Oct	Below 3,300	Disturbed areas
Diffuse knapweed *Centaurea diffusa*	A	Jun-Sep	Below 7,600	Fields, roadsides
Spotted knapweed *Centaurea maculosa*	A	July-Aug	Below 8,500	Open disturbed sites, grasslands, forested areas, roadsides
Maltese starthistle *Centaurea melitensis*	C	Apr-July	Below 7,200	Open disturbed sites, grasslands, roadsides, waste places
Yellow starthistle *Centaurea solstitialis*	C	Jun-Dec	Below 4,300	Pastures, roadsides, disturbed grassland or woodland
Rush skeletonweed *Chondrilla juncea*	A	May-Dec	Below 2,000	Disturbed areas
Canada thistle *Cirisum arvense*	B	Jun-Sep	Below 5,900	Disturbed areas
Bermudagrass *Cynodon dactylon*	C	Jun-Aug	Below 3,000	Disturbed areas
Scotch broom *Cytisus scoparius*	C	Mar-Jun	Below 3,300	Disturbed areas
Common Name/ Scientific Name	CDFA Status1	Flowering Period	Elevation(ft)	Habitat
Oblong spurge Euphorbia oblongata	B	Apr-Aug	Below 3,300	Waste areas, disturbed sites, roadsides, fields
Japanese knotweed Fallopia japonica	B	Aug-Oct	Below 3,300	Disturbed areas
Sakhalin knotweed, giant knotweed Fallopia sachalinensis	B	Jul-Oct	Below 1,650	Disturbed areas
French broom Genista monspessulana	C	Mar-May	Below 1,600	Disturbed areas
Hydrilla Hydrilla verticillata	A	Jun-Aug	Below 650	Ditches, canals, ponds, reservoirs, lakes
Dyer's woad Isatis tinctoria	B	Apr-Jun	Below 3,300	Roadsides, fields, disturbed sites
Lens-podded white-top Lepidium draba ssp chalepense	B	Apr-Aug	Below 5,000	Disturbed, generally saline soils, fields
Perennial pepperweed, tall white-top Lepidium latifolium	B	Apr-Aug	Below 6,300	Beaches, tidal shores, saline soils, roadsides
Dalmation toadflax Linaria genistifolia ssp. dalmatica	A	May-Sep	Below 3,300	Disturbed places, pastures, fields
Purple loosestrife Lythrum salicaria	B	Jun-Sep	Below 5,300	Seasonal wetlands, ditches, cultivated fields
Eurasian water milfoil Myriophyllum spicatum	C	July-Sep	Below 6,300	Fresh to brackish water, slow-moving streams

Common Name/ Scientific Name	CDFA Status[1]	Flowering Period	Elevation(ft)	Habitat
Scotch thistle Onopordum acanthium	A	Jul-Sep	Below 5,300	Disturbed areas
Himalayan blackberry Rubus discolor	Not rated	May-Sep	Below 5,300	Disturbed moist sites, fields, roadsides, riparian areas
Spanishbroom Spartium junceum	Not rated	Mar-Jun	Below 2,000	Open disturbed sites, grasslands, oak woodlands, riparian corridors, open forests
Medusahead Taeniatherum caput-medusae	C	Apr-Jul	Below 6,900	Disturbed sites, grassland, openings in oak woodlands and chaparral
Gorse Ulex europaeus	B	Nov-Jul	Below 1,300	Disturbed areas

Sources: CDFA 2009; United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS); California Invasive Plant Council (Cal-IPC) 2006; and DiTamaso 2007

[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 (CDFA 2009).

5.3.3 Step 3 – Prepare Data and Quality Assure/Quality Control Data

Following field surveys, Licensee will develop GIS maps depicting special-status plant occurrences, Project facilities, features, and specific Project-related impacts (*e.g.*, dispersed use camping) and other related information collected during the study. Field data will then be subject to QA/QC procedures, including spot-checks of transcription and comparison of GIS maps with field notes to verify locations of special-status plant occurrences.

5.3.4 Step 4 – Consult with Licensee's Project Operations Staff

Once the location of special-status plants in the study area is defined, Project operations staff will be consulted to identify Project O&M and Project-related activities that typically occur in the area of the special-status plant populations that have a potential to adversely affect the population.

5.3.5 Step 5 – Prepare Report

Licensee will prepare a report that includes the following sections: 1) Study Goals and Objectives; 2) Methods; 3) Results; 4) Discussion; and 5) Description of Variances from the FERC-approved study proposal, if any. Study results will be displayed in GIS maps that show by special-status plant population the location in respect to project facilities and features. The GIS layer of special-status plants will be made available to the appropriate land management agencies. In addition, Licensee will develop a GIS layer for noxious weeds and make this available to the appropriate land management agencies.

For all special-status plant observations, Licensee will complete the appropriate CNDDB form and transmit the form to the CNDDB. For any special-status plant observations on National Forest System land, Licensee will provide a copy of the CNDDB form to the Forest Service at the same time as it is submitted to CNDDB.

6.0 Study-Specific Consultation

This study does not require any study-specific consultation.

7.0 Schedule

Licensee anticipates the schedule to complete the study as follows assuming the PAD is filed on November 1, 2010, and FERC issues its Study Determination by October 4, 2011:

Planning (Step 1).....November 2011- February 2011
Collect Data (Step 2).....March 2011- July 2011
QA/QC Review (Step 3).....August 2011
Operations Staff Consultation (Step 4).....August 2011
Study Report Preparation (Step 5).....September 2011- October 2012

8.0 Consistency of Methodology with Generally Accepted Scientific Practices

This study is consistent with the goals, objectives, and methods outlined for most recent FERC hydroelectric relicensing efforts in California, and uses standard botanical survey methods as defined by the CDFG.

9.0 Level of Effort and Cost

[Relicensing Participants – Licensee will include a cost range estimate for this study in its Proposed Study Plan. Licensee]

10.0 References Cited

California Department of Agriculture (CDFA). 2009. Pest Ratings of Noxious Weed Species and Noxious Weed Seed. Accessed December 7, 2009. Available online: < http://www.cdfa.ca.gov/phpps/ipc/weedinfo/winfo_pestrating_2009.pdf>

California Department of Fish and Game (CDFG). 2000. Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities. Available online: <http://www.dfg.ca.gov/biogeodata/cnddb/plants.asp>

_____. 2009. Biogeographic Data Branch. California Natural Diversity Database (CNDDB). Data updated November 2009.

_____. 2009. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. Available online: <www.fws.gov/sacramento/es/.../Listed_plant_survey_guidelines.PDF>

California Invasive Plant Council (Cal-IPC). 2006. California Invasive Plant Inventory. Cal-IPC Publication 2006-02. California Invasive Plant Council: Berkeley, CA. Available online: <http://www.cal-ipc.org/ip/inventory/weedlist.php>

California Native Plant Society (CNPS). 2009. Inventory of Rare and Endangered Plants (online edition, v7-08a). California Native Plant Society. Sacramento, California. Accessed on November 5, 2009. Available online: <http://www.cnps.org/inventory>

DiTomaso, Joseph and Evelyn Healy. 2007. Weeds of California. University of California-Agriculture and Natural Resources Publication. Oakland, CA.

Hickman, J.C., editor. 1993. The Jepson Manual, 3rd Edition. University of California Press, Berkeley, California.

United States Department of Agriculture, Forest Service, Pacific Southwest Region, Plumas National Forest. 2010. Noxious Plant Species.

_____. Plumas National Forest. 2010. Plumas National Forest Sensitive and Watchlist Plant Species.

_____. Tahoe National Forest. 2010. Tahoe National Forest Sensitive Plants and Fungi.

_____. Tahoe National Forest. 2010. Tahoe National Forest Watchlist- Plants.

_____. Tahoe National Forest. 2010. Tahoe National Forest Weed List.

United States Department of Agriculture, Natural Resources Conservation Service (NRCS). California State-listed Noxious Weeds. 2009. Available online: <http://plants.usda.gov/java/noxious?rptType=State&statefips=06>

United States Department of the Interior, Bureau of Land Management (BLM). 2009. California BLM Special Status Plants. March 2009. Accessed on December 7, 2009. Available online: <http://www.blm.gov/ca/pa/ssp/lists/by_species/ssplist_all.html>

Yuba County Water Agency (YCWA). 2009. Yuba River Development Project relicensing Preliminary Information Package. http://www.ycwa-relicensing.com/default.aspx

Page Left Blank