

# **SPECIAL-STATUS PLANTS**

(May 12, 2008)

## **1.0 Project Nexus**

Continued operation and maintenance (O&M) of the Yuba-Bear Hydroelectric Project, Drum-Spaulding Project and Rollins Transmission Line Project may have an effect on special-status<sup>1</sup> plants. These effects may be direct (i.e., result of ground disturbing activities such as mechanical or chemical clearing of vegetation or trampling of plants), indirect (i.e., due to activities such as soil compaction which limits plant growth) or cumulative (i.e., caused by a Project activity in association with a non-Project activity such as loss of habitat due to the introduction of invasive plants from a non-Project vector). This study focuses on these potential Project effects to protected plants.

Tables 1, 2 and 3 located at the end of this study proposal provides the target list of special-status plants for this study including the following general information for each plant: 1) status; 2) flowering period; 3) elevation range; 4) habitat requirements; and 5) recorded occurrence in the Project Region.<sup>2</sup>

## **2.0 Resource Agency Management Goals**

Licenses have conferred with resource agencies that participated in development of this study proposal, and those resource agencies have not yet identified specific management goals relevant to this study proposal.

## **3.0 Potential License Conditions**

The study results may be used in the development of protection, mitigation, and enhancement (PM&E) measures relating to the effects of the projects O&M activities have on special-status plants, and may include:

- Avoid locations of populations of special-status plants or, if avoidance is not possible, consult with appropriate agency to develop site/work-specific PM&E measures.

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<sup>1</sup> Special-status plants are considered those plants that are: 1) found on United States Department of Interior, Bureau of Land Management (BLM) land and formally listed by BLM as a Sensitive Species; 2) found on National Forest System land and formally listed by the United States Department of Agriculture, Forest Service as a Sensitive Species, Management Indicator Species or Watch List species; 3) listed under the federal Endangered Species Act (ESA) as Proposed or a Candidate for listing as endangered or threatened or proposed for delisting; 4) listed under the California Endangered Species Act (CESA) as Proposed or a Candidate for listing as endangered or threatened or proposed for delisting; or 5) found on the California Native Plant Society (CNPS) Inventory of Rare Plants and formally listed as a CNPS 1 or 2 plant (CNPS1 or CNPS2). Plants listed as threatened or endangered under the ESA or CESA are addressed separately and not considered special-status for the purpose of the this study proposal.

<sup>2</sup> The Project Vicinity is defined as the area around the Project generally in the order of a county or Tahoe National Forest in size.

- If a plant becomes special-status after the new license is issued and it has a possibility of occurring in the area of the projects and being affected by the project, Licensees develop and implement a study similar to this one to assess potential effects.

#### **4.0 Study Goals and Objectives**

The goal of this study is to determine what existing protected plants occur and if continued Project O&M and recreation will have an effect on special-status plants. The criteria that will be used to determine a Project effect is if both of the following are found:

- a special-status plant is found to occur within the FERC Project Boundary and
- a specific Project activity, including all Project O&M and recreational use within the FERC boundary, has a reasonable possibility of having an effect on a special-status plant species that is found.

The objective of this study is to gather information in support of this, and additionally, to perform the analysis.

#### **5.0 Existing Information and Need for Additional Information**

Existing and relevant information regarding known and potentially occurring special-status plants in the vicinity of the projects is available from the California Natural Diversity Database (CNDDDB), California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants database (CNPS 2007) the United States Department of Agriculture, Forest Service and United States Department of Interior, Bureau of Land Management (BLM) Geographic Information System (GIS) databases. Forest Service and BLM data also include various biological evaluations and plant survey reports addressing special-status plants. This information is useful in developing a target list of special-status plants and identifying their flowering periods and habitat. Some of these reports provide site specific information on special status plant occurrences. However, only a small portion of the study area has been surveyed for special-status plants; in addition some of the surveys are not current. Additionally, only a portion of the area within the FERC project boundaries has been surveyed for special-status plant species; some of the surveys may not be current. Information 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 these special-status plants populations.

## **6.0 Study Methods and Analysis**

### **6.1 Study Area**

The study area consists of the area within the FERC Project Boundaries.

If additional Project facilities, features, recreation facilities, or dispersed concentrated use areas outside the study area are identified, the study area will be expanded, if necessary, in collaboration with Relicensing Participants, to include these areas. If, at a later time, Licensees propose Project activities that are outside of the study area that may affect sensitive plants, the study area will be expanded, if necessary, to include these areas and appropriate studies undertaken.

### **6.2 General Concepts**

The following general concepts apply to the study:

- Personal safety is an important consideration of each fieldwork team. If Licensees determines the information cannot be collected in a safe manner, Licensees will notify FERC and Relicensing Participants as soon as possible via email to discuss alternative approaches to perform the study.
- Licensees shall make a good faith effort to obtain permission to access private property where needed well in advance of performance of the study. If access is not granted or river access is not feasible or safe, Licensees will notify FERC and Relicensing Participants as soon as possible via email to determine if Relicensing Participants can assist in gaining access or to discuss alternative approaches to perform the study.
- The schedule for each proposed study is reasonably flexible to accommodate unforeseen problems that may affect the schedule. If a schedule changes, Licensees will notify FERC and Relicensing Participants as soon as possible via email to discuss alternative approaches to perform the study.
- Field crews may make minor modifications to the study proposal in the field to accommodate actual field conditions and unforeseen problems. When modifications are made, Licensee's field crew will follow the protocols in this study proposal. If minor modifications are made, Licensees will provide a detailed description of the conditions that led to the decision to modify the study to FERC and Relicensing Participants as soon as possible via email to discuss alternative approaches to perform the study.
- Licensees' performance of the study does not presume Licensees are responsible in whole or in part for resource management measures that may arise from that study.

- The estimated level of effort and cost is not a firm commitment by Licensees to expend all the funds. If the study costs more, Licensees are committed to completing the study. If the study costs less, Licensees are not committed to expending the remaining funds on other Relicensing studies or resource management measures.

For all special-status plant occurrences located, Licensees will complete the appropriate form and transmitted the form to the CNDDDB.

### 6.3 Study Methods

The study methods will consist of the following steps:

Step 1 – Gather Data and Prepare for Field Effort. Licensees 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.

Step 2 – Identify Study Sites. Specifically, the study will be performed within the study sites within the study area. The study area/sites would include any associated roads and parking or staging areas. Distances are from the edge of the use area:

- 10 feet on either side of managed trails
- Project facilities, or project-related facilities, that attract and encourage recreational OHV use in proximity to special-status species, especially within, and adjacent to, riparian areas, that have the potential to damage and/or kill individuals
- 25 feet on either side of access roads within the FERC Project Boundaries
- 20 feet around the perimeter of reservoirs and impoundments
- 20 feet around the perimeter of powerhouses and switchyards
- 30 feet around ancillary support facilities including stream gages and weirs
- 30 feet on either side of water conduits
- 30 feet on either side of transmission lines
- 60 feet around intakes, gatehouses, surge tanks, aits, portals and microwave/radar towers
- 100 feet around developed recreation facilities and around dispersed recreation sites, the latter as identified in the Recreation Use and Visitor Survey Study
- Other locations at which Licensees routinely performs ground disturbing activities<sup>3</sup>

Step 3 – Conduct Field Surveys. Licensees' surveyors will conduct special-status plant surveys that generally follow CDFG's *Guidelines for Assessing the Effects of Proposed Project on Rare, Threatened, and Endangered Plants and Natural Communities* (CDFG 2000). Field surveys will be conducted when special-status plants potentially occur in a given survey area and are expected to be evident and identifiable. Surveys will use a random meander technique, focusing

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<sup>3</sup> Felling and removal of hazard trees is not considered a routine activity, but will be addressed on a site-by-site basis, when these activities are planned.

additional efforts in high-quality habitats or those 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). Agencies will be notified of survey dates so agency scientists can participate in surveys on their land. As described in the study proposal entitled “ESA-Listed Wildlife - Valley Elderberry Longhorn Beetle,” valley elderberry will also be noted, described and located using Global Positioning System (GPS) during special-status plant survey efforts. In addition, incidental observations of noxious weeds listed in Table 3 will be documented, with qualitative or quantitative information as specified in Table 3

When special-status plants are documented within the study area, the following information will be collected: 1) digital photographs, if needed, to describe the occurrence, its habitat, and any potential threats; 2) estimated area (approximate length and width) covered by the special-status plant population and number of individual plants in the population; 3) location as derived from a handheld GPS unit, with a target accuracy of 50 feet. GPS data will be used to plot the sites onto the appropriate Relicensing GIS database; 4) dominant and subdominant vegetation in the area; 5) location and proximity of noxious weeds, by species, if any; 6) estimated distance to nearest project facility or feature, or project-related activity, if in evidence; and 7) activities observed in the vicinity of the population that have a potential to adversely affect the population (e.g. recreational trails and uses); 8) estimated phenology and descriptions of reproductive state.

Observations of the following species and communities will also be recorded and mapped:

- *Populus tremuloides* groves
- *Cudonia monticola*
- *Dendrocollybia racemosa*
- *Phaeocollybia olivacea*

Step 4 – Prepare, Format and Quality Assurance/Quality Control Data. Following field surveys, Licensees will develop GIS maps depicting special-status plant occurrences, project facilities, features, and specific project-related impact (i.e. dispersed use camp) and other information collected during the study. Field data will then be subject to quality assurance/quality control (QA/QC) procedures, including spot-checks of transcription and comparison of GIS maps with field notes on locations of any special-status plant occurrences.

Step 5 – 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, or other project-related, activities that typically occur in the area of the special-status plant populations that have a potential to affect the population.

Step 6 – Assess Potential Effects. Based on the above information and in manner consistent with the study criteria described in Section 4.0, the location, nature, degree and timing of project O&M or recreational use within the FERC Project Boundaries will be described relative to the

location and phenology of each special-status plant occurrence. Potential effects will be assessed according to the degree to which project O&M or recreational use within the FERC Project Boundaries overlaps with each occurrence.

Step 7 – Prepare Report. - Licensees 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. Licensees plans to make the report available to Relicensing Participants when completed, and ideally in time to be included in the Initial Study Report. The report will also be included in the appropriate License Applications.

#### **6.4 Study Proposal Consultation**

Licensees will engage in the following study-specific consultation:

- Agency staff will be notified of survey dates so agency scientists can participate in surveys on their land.

Licensees will file with FERC and post on its Relicensing Website periodic reports as required by the FERC in the Study Plan Determination.

Licensees will coordinate with FERC and other Relicensing Participants as described in Section 6.2.

#### **6.5 Schedule**

Licensees anticipates the schedule to complete the study proposal assuming FERC’s Study Plan Determination regarding this proposal is deemed final on March 12, 2009, is as follows:

Planning (Steps 1 & 2) .....March 2, 2009 – April 15, 2009  
Field Work (3).....April 15, 2009 - September 1, 2009  
Office Work (4, 5 & 6).....September 1, 2009 – December 31, 2009  
Study Proposal Consultation.....As needed and Quarterly Reports  
Report Preparation (7).....September 1, 2009 - March 2, 2010

#### **6.6 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.

### **7.0 Products**

Besides the reports described above, the study results will be displayed in GIS maps that show by special-status plant population the population location in respect to project facilities and features.

## **8.0 Level of Effort and Cost**

The preliminary cost estimate for the study in 2008 dollars is as follows:

Planning (Steps 1 & 2) .....	\$
Field Work (3).....	\$
Office Works (4, 5 & 6).....	\$
Study Proposal Consultation.....	\$
Report Preparation (7).....	\$
<b>TOTAL</b> .....	<b>\$</b>

**[Relicensing Participants – This section will be completed by the Licensees when the study proposal is completed. Licensee 4/27/08]**

## **9.0 References Cited**

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. Online document: <http://www.dfg.ca.gov/biogeodata/cnddb/plants.asp>.

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

**Table 1. Target list of special-status plants for the Yuba-Bear Hydroelectric Project.**

Scientific Name; Common Name	Status <sup>1</sup>	Flowering Period	Elevation Range (ft)	Habitat Requirements	Occurrence in Project Vicinity <sup>2</sup>
<i>Allium sanbornii</i> var. <i>congdonii</i> Congdon's onion	FSW	Apr-Jun	1000-5000	Chaparral, cismontane woodland, serpentine soils	<b>Washington, Dutch Flat,</b> Westville, Occurs within TNF
<i>Allium sanbornii</i> var. <i>sanbornii</i> Sanborn's onion	FSW	May-Sep	1000-5000	Chaparral, cismontane woodland, lower montane coniferous forest, serpentine soils	Suspected, but not known within TNF
<i>Androsace</i> <i>occidentalis</i> var. <i>simplex</i> simple androsace	FSW, CNPS 2	Jun-July	5494-5576	Upper montane coniferous forest	<b>Blue Canyon,</b> occurs within TNF
<i>Arabis rigidissima</i> var. <i>demota</i> Carson Range rock cress	FSS	Aug	7500-8500	Broadleaved upland forest, upper montane coniferous forest, openings	Occurs on lands adjacent to TNF
<i>Asplenium</i> <i>trichomanes-ramosum</i> green spleenwort	FSW, CNPS 290	Jun-Aug	6724	Subalpine coniferous forest, limestone crevices	<b>Sierra City,</b> occurs within TNF
<i>Astragalus webberi</i> Webber's milk-vetch	FSS, CNPS 1B	May-Jul	2700-4000	Lower montane coniferous forest	Suspected, but not known within TNF
<i>Botrychium ascendens</i> upswept moonwort	FSS, CNPS 2	Jul-Aug	4000+	Lower montane coniferous forest, moist/riparian areas	Occurs within TNF
<i>Botrychium</i> <i>crenulatum</i> scalloped moonwort	FSS, CNPS 2	Jun-Sep	4000+	Lower montane coniferous forest, meadows and seeps, marshes and swamps, moist/ riparian areas	Cisco Grove, <b>Graniteville,</b> Occurs within TNF
<i>Botrychium lunaria</i> common moonwort	FSS, CNPS 2	Aug	7478-11152	Meadows and seeps, subalpine coniferous forest, upper montane coniferous forest, moist/ riparian areas	Occurs within TNF
<i>Botrychium</i> <i>minganense</i> Mingan moonwort	FSS, CNPS 2	Jul-Sep	4920-6740	Lower montane coniferous forest, upper montane coniferous forest, moist/ riparian areas	Occurs within TNF
<i>Botrychium montanum</i> western goblin	FSS, CNPS 2	Jul-Sep	4920-6986	Lower montane coniferous forest, upper montane coniferous forest, moist/ riparian areas	Occurs within TNF
<i>Bruchia bolanderi</i> Bolander's bruchia	FSS		4000-9500	Lower montane coniferous forest, meadows and seeps, upper montane coniferous forest	Norden
<i>Calochortus clavatus</i> var. <i>avius</i> Pleasant Valley mariposa lily	FSS, CNPS 1B	May-Jul	3000-5800	Lower montane coniferous forest, rocky places	Suspected, but not known within TNF
<i>Chlorogalum</i> <i>grandiflorum</i> Red Hills soaproot	FSW, BLM, CNPS 1B	May-Jun	804-3838	Chaparral, cismontane woodland, lower montane coniferous forest, serpentine/ gabbro	Shingle Springs, Clarksville, Pilot Hill, Michigan Bluff, Colfax, Foresthill, occurs within TNF

<p><i>Clarkia biloba</i>                  ssp. brandegeae                  Brandegee's clarkia</p>	<p>FSS, BLM,                  CNPS 1B</p>	<p>May-Jul</p>	<p>239-3001</p>	<p>Chaparral, cismontane                  woodland</p>	<p>Camptonville, Michigan Bluff,  <b>Dutch Flat</b>, Clarksville,                  Greenwood, Coloma, Auburn,                  Gold Hill, Rocklin, Pilot Hill,  <b>Chicago Park</b>, Colfax,                  Foresthill, Grass Valley, Wolf,                  Lake Combie, Pike, North                  Bloomfield, Nevada City</p>
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**Table 1. (continued)**

Scientific Name; Common Name	Status <sup>1</sup>	Flowering Period	Elevation Range (ft)	Habitat Requirements	Occurrence in Project Vicinity <sup>2</sup>
<i>Claytonia megarhiza</i> fell-fields claytonia	FSW, CNPS 2	Jul-Aug	8528-10824	Alpine boulder and rock field, subalpine coniferous forest, talus/rock crevices	Independence Lake, occurs within TNF
<i>Cypripedium fasciculatum</i> clustered lady's-slipper	FSS	Mar-Aug	500-7200	Lower montane coniferous forest, North Coast coniferous forest, mixed conifer	Suspected but not known within TNF
<i>Cypripedium montanum</i> mountain lady's- slipper	FSS	Mar-Aug	600-7500	Broadleaved upland forest, cismontane woodland, lower montane coniferous forest, North Coast coniferous forest, mixed conifer	Occurs within TNF
<i>Darlingtonia california</i> California pitcherplant	FSW	Apr-Jul	below 7000	Meadows and seeps, wet areas, mostly in fens	Occurs within TNF
<i>Drosera anglica</i> English sundew	FSW, CNPS 2	Jun-Sep	below 7000	Meadows and seeps	Independence Lake, occurs within TNF
<i>Drosera rotundifolia</i> roundleaf sundew	FSW		below 8000	Wet areas	Occurs within TNF
<i>Epilobium howellii</i> subalpine fireweed	FSS, CNPS 1B	Jul-Aug	6000-9000	Meadows and seeps, subalpine coniferous forest, wet areas	<b>Clio, Webber Peak,</b> Sattley, occurs within TNF
<i>Erigeron miser</i> starved daisy	FSS, CNPS 1B	Jun-Oct	6000+	Upper montane coniferous forest, granite	<b>Graniteville, English Mountain,</b> Independence Lake, Soda Springs, Norden, occurs within TNF
<i>Erigeron petrophilus</i> var. <i>sierrensis</i> northern Sierra daisy	FSW	Jun-Oct	900-5700	Cismontane woodland, lower montane coniferous forest, upper montane coniferous forest, rocky soils	Occurs within TNF
<i>Eriogonum umbellatum</i> var. <i>torreyanum</i> Donner Pass buckwheat	FSS, CNPWS 1B	Jul-Sep	6084-8594	Meadows and seeps, upper montane coniferous forest, unstable soils	Tahoe City, Granite Chief, Independence Lake, <b>Webber Peak,</b> Norden, occurs within TNF
<i>Fritillaria eastwoodiae</i> Butte County fritillary	FSS	Mar-Jun	164-4920	Chaparral, cismontane woodland, lower montane coniferous forest, full to partial sun	Greenwood, Auburn, Foresthill, North Bloomfield, <b>Washington,</b> Nevada City, occurs within TNF
<i>Hydrothyria venosa</i> Hydrothyria lichen	FSS			Fresh water springs and streams	Occurs within TNF
<i>Ivesia aperta</i> var. <i>aperta</i> Sierra Valley ivesia	FSS, CNPS 1B	Jun-Sep	4854-7544	Great Basin scrub, lower montane coniferous forest, meadows and seeps, pinyon and juniper woodland, vernal pools, eastside meadows and seasonal drainages	Calpine, Sierraville, occurs within TNF
<i>Ivesia aperta</i> var. <i>canina</i> Dog Valley ivesia	FSS, CNPS 1B	Jun-Aug	5248-6560	Lower montane coniferous forest, meadows and seeps, eastside meadows and seasonal drainages	Sierraville, occurs within TNF

**Table 1. (continued)**

Scientific Name; Common Name	Status <sup>1</sup>	Flowering Period	Elevation Range (ft)	Habitat Requirements	Occurrence in Project Vicinity <sup>2</sup>
<i>Ivesia sericoleuca</i> Plumas ivesia	FSS, CNPS 1B	May-Sep	4805-7216	Great Basin scrub, lower montane coniferous forest, meadows and seeps, vernal pools, eastside meadows and seasonal drainages	Independence Lake, Calpine, Sattley, Sierraville, <b>Haypress Valley</b> , occurs within TNF
<i>Ivesia webberi</i> Webber's ivesia	FSS, CNPS 1B	May-Jul	3280-6806	Great Basin scrub, lower montane coniferous forest, Pinyon and juniper woodland, eastside meadows and seasonal drainages	<b>Webber Peak</b> , occurs within TNF
<i>Lewisia cantelovii</i> Cantelow's lewisia	FSS, BLM, CNPS 1B	May-Oct	1082-4494	Broadleafed upland forests, chaparral, cismontane woodland, lower montane coniferous forest, westside cliffs/ outcrops	<b>Alleghany</b> , Pike, North Bloomfield, <b>Washington</b> , Nevada City, Goodyear's Bar, Downieville, occurs within TNF
<i>Lewisia kelloggii</i> ssp. <i>hutchisonii</i> Hutchison's lewisia	FSS	(Jun)Jul-Aug	4500-7000	Upper montane coniferous forest, rocky open ridges	<b>Alleghany</b> , <b>Sierra City</b> , Mount Fillmore, occurs within TNF
<i>Lewisia kelloggii</i> ssp. <i>kelloggii</i>	FSS		5400-9000	Rocky open ridges	Cisco Grove, Occurs within TNF
<i>Lewisia longipetala</i> long-petaled lewisia	FSS, CNPS 1B	Jul-Aug	8200-9594	Alpine boulder and rock field, subalpine coniferous forest, damp gravel	Granite Chief, Independence Lake, Norden, occurs within TNF
<i>Lewisia serrata</i> saw-toothed lewisia	FSS, CNPS 1B	May-Jun	2952-4707	Broadleafed upland forests, lower montane coniferous forest, riparian forest, westside cliffs/ outcrops	American River Watersheds, Duncan Peak, Michigan Bluff, occurs within TNF
<i>Lilium humboldtii</i> ssp. <i>humboldtii</i> Humboldt lily	FSW	May-Jul	1500-3500	Chaparral, cismontane woodland, lower montane coniferous forest, openings	<b>Washington</b> , Occurs within TNF
<i>Lupinus dalesiae</i> Quincy lupine	FSS	May-Aug	3000-8000	Chaparral, cismontane woodland, lower montane coniferous forest, upper montane coniferous forest	La Porte, Mount Fillmore, Goodyear's Bar, Occurs within TNF
<i>Mimulus lacinatus</i> cut-leaved monkeyflower	FSW	Apr-Jun	1500-9000	Chaparral, lower montane coniferous forest, upper montane coniferous forest, seeps in granite	Suspected, but not known within TNF
<i>Monardella follettii</i> Follett's monardella	FSS, CNPS 1B	Jun-Sep	1968-6560	Lower montane coniferous forest, serpentine	Grass Valley, adjacent to TNF on private lands
<i>Penstemon personatus</i> closed-throated beardtongue	FSS, CNPS 1B	Jun-Sep	3493-6954	Chaparral, lower montane coniferous forest, upper montane coniferous forest, partial sun	<b>Graniteville</b> , <b>Sierra City</b> , occurs within TNF
<i>Perideridia bacigalupi</i> Bacigalupi's yampah	FSW	Jun-Aug	1700-3500	Chaparral, lower montane coniferous forest, serpentine	Occurs within TNF
<i>Phacelia stebbinsii</i> Stebbins' phacelia	FSS, CNPS 1B	Jun-Jul	2001-6593	Cismontane woodland, lower montane coniferous forest, meadows and seeps, westside openings	<b>Blue Canyon</b> , Duncan Peak, Michigan Bluff, <b>Graniteville</b> , Cisco Grove, occurs within TNF
<i>Potamogeton filiformis</i> slender-leaved pondweed	FSW, CNPS 2	May-Jul	984-7052	Marshes and swamps, lakes and ponds	<b>Sierra City</b> , occurs within TNF

**Table 1. (continued)**

Scientific Name; Common Name	Status <sup>1</sup>	Flowering Period	Elevation Range (ft)	Habitat Requirements	Occurrence in Project Vicinity <sup>2</sup>
<i>Pyrocoma lucida</i> sticky pyrocoma	FSS, CNPS 1B	Jul-Oct	2296-6396	Great Basin scrub, lower montane coniferous forest, meadows and seeps, eastside meadows/ alkali flats	Calpine, Sattley, Sierraville, Clio, occurs within TNF
<i>Rhynchospora alba</i> white beaked-rush	FSW, CNPS 2	Jul-Aug	197-6691	Meadows and seeps, marshes and swamps, wet places	Cisco Grove, occurs within TNF
<i>Rhynchospora capitellata</i> brownish beaked-rush	FSW, CNPS 2	Jul-Aug	1492-6560	Lower montane coniferous forest, meadows and seeps, marshes and swamps, upper montane coniferous forest, wet places	<b>Chicago Park</b> , Grass Valley, Pike, North Bloomfield, Nevada City, occurs within TNF
<i>Scutellaria galericulata</i> marsh skullcap	FSW, CNPS 2	Jun-Sep	4000-7000	Lower montane coniferous forest, meadows and seeps, marshes and swamps, streambanks	Occurs within TNF
<i>Tauschia howellii</i> Howell's tauschia	FSS	Jun-Sep, CNPS 1B	5592-8200	Subalpine coniferous forest, upper montane coniferous forest	<b>Sierra City</b> , occurs within TNF
<i>Tonestus eximius</i> Tahoe tonestus	FSW	Jul-Aug	8000-10000	Subalpine coniferous forest, granitic areas	Occurs within TNF
<i>Utricularia minor</i> lesser bladderwort	FSW	Jul	2624-9512	Marshes and swamps, shallow water	Hobart Mills, Occurs within TNF
<i>Veronica cusickii</i> Cusick's speedwell	FSW	Jul-Aug	7000-9800	Alpine boulder and rock field, meadows and seeps, subalpine coniferous forest, upper montane coniferous forest	Granite Chief, Occurs within TNF

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

BLM = Bureau of Land Management Sensitive Plants

FSS = United States Forest Service Sensitive Species

FSW = Tahoe national Forest Watchlist Species

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

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

<sup>2</sup>Occurrence in Project Vicinity: Project Boundary quads are bolded, quads outside of Project Boundary are not bolded. Results based on CNPS Nine-quad search.

**Table 2. Target list of special-status plants for the Drum-Spaulding Project.**

Scientific Name; Common Name	Status <sup>1</sup>	Flowering Period	Elevation Range (ft)	Habitat Requirements	Occurrence in Project Vicinity <sup>2</sup>
<i>Allium sanbornii</i> var. <i>sanbornii</i> Sanborn's onion	FSW	May-Sep	1000-5000	Chaparral, cismontane woodland, lower montane coniferous forest, serpentine soils	Suspected, but not known within TNF
<i>Androsace</i> <i>occidentalis</i> var. <i>simplex</i> simple androsace	FSW, CNPS 2	June-July	5494-5576	Upper montane coniferous forest, moist areas	<b>Blue Canyon</b> , occurs within TNF
<i>Arabis rigidissima</i> var. <i>demota</i> Carson Range rock cress	FSW	Aug	7500-8500	Broadleafed upland forest, upper montane coniferous forest, openings	Occurs within TNF
<i>Asplenium</i> <i>trichomanes-</i> <i>ramosum</i> green spleenwort	FSS, CNPS 2	Jun-Aug	6724	Subalpine coniferous forest, limestone crevices	Sierra City, occurs within TNF
<i>Astragalus webberi</i> Webber's milk-vetch	FSS, CNPS 1B	May-Jul	2700-4000	Lower montane coniferous forest	Suspected, but not known within TNF
<i>Botrychium</i> <i>ascendens</i> upswept moonwort	FSS, CNPS 2	Jul-Aug	4920-7495	Lower montane coniferous forest, moist/riparian areas	Occurs within TNF
<i>Botrychium</i> <i>crenulatum</i> scalloped moonwort	FSS, CNPS 2	Jun-Sep	4920-10758	Lower montane coniferous forest, meadows and seeps, marshes and swamps, moist/riparian areas	<b>Cisco Grove</b> , Occurs within TNF
<i>Botrychium lunaria</i> common moonwort	FSS, CNPS 2	Aug	7478-11152	Meadows and seeps, subalpine coniferous forest, upper montane coniferous forest, moist/riparian areas	Occurs within TNF
<i>Botrychium</i> <i>minganense</i> Mingan moonwort	FSS, CNPS 2	Jul-Sep	4920-6740	Lower montane coniferous forest, upper montane coniferous forest, moist/riparian areas	Occurs within TNF
<i>Botrychium</i> <i>montanum</i> western goblin	FSS, CNPS 2	Jul-Sep	4920-6986	Lower montane coniferous forest, upper montane coniferous forest, moist/riparian areas	Occurs within TNF
<i>Bruchia bolanderi</i> Bolander's bruchia	FSS		4000-9500	Lower montane coniferous forest, meadows and seeps, upper montane coniferous forest	Norden
<i>Calochortus clavatus</i> var. <i>avivus</i> Pleasant Valley mariposa lily	FSS, CNPS 1B	May-Jul	3000-5800	Lower montane coniferous forest, rocky places	Suspected, but not known within TNF
<i>Chlorogalum</i> <i>grandiflorum</i> Red Hills soaproot	FSW, BLM, CNPS 1B	May-Jun	804-3838	Chaparral, cismontane woodland, lower montane coniferous forest, serpentine/gabbro	Shingle Springs, Clarksville, <b>Pilot Hill</b> , Michigan Bluff, <b>Colfax</b> , Foresthill, occurs within TNF
<i>Clarkia biloba</i> ssp. <i>brandegeae</i> Brandegee's clarkia	FSS, BLM, CNPS 1B	May-Jul	239-3001	Chaparral, cismontane woodland	Camptonville, Michigan Flat, <b>Dutch Flat</b> , Clarksville, Greenwood, Coloma, <b>Auburn</b> , Gold Hill, Rocklin, <b>Pilot Hill</b> , <b>Chicago Park</b> , <b>Colfax</b> , Foresthill, Grass Valley, Wolf, Lake Combie, Pike, North Bloomfield, Nevada City
<i>Claytonia megarhiza</i> fell-fields claytonia	FSW, CNPS 2	Jul-Aug	8528-10824	Alpine boulder and rock field, subalpine coniferous forest, talus/rock crevices	Independence Lake, occurs within TNF

**Table 2. (continued)**

Scientific Name; Common Name	Status <sup>1</sup>	Flowering Period	Elevation Range (ft)	Habitat Requirements	Occurrence in Project Vicinity <sup>2</sup>
<i>Cypripedium fasciculatum</i> clustered lady's-slipper	FSS	Mar-Aug	500-7200	Lower montane coniferous forest, North Coast coniferous forest, mixed conifer	<b>Washington, Graniteville,</b> North Bloomfield, La Porte, Occurs within TNF
<i>Cypripedium montanum</i> mountain lady's-slipper	FSS	Mar-Aug	600-7500	Broadleaved upland forest, cismontane woodland, lower montane coniferous forest, North Coast coniferous forest, mixed conifer	Suspected, but not known within TNF
<i>Darlingtonia californica</i> California pitcherplant	FSW	Apr-Jul	0-7000	Meadows and seeps, wet areas, mostly in fens	Occurs within TNF
<i>Drosera anglica</i> English sundew	FSW, CNPS 2	Jun-Sep	below 7000	Meadows and seeps	Independence Lake, occurs within TNF
<i>Drosera rotundifolia</i> roundleaf sundew	FSW		below 8000	Wet areas	Occurs within TNF
<i>Epilobium howellii</i> subalpine fireweed	FSS, CNPS 1B	Jul-Aug	6560-8856	Meadows and seeps, subalpine coniferous forest, wet areas	<b>Webber Peak,</b> Sattley, occurs within TNF
<i>Erigeron miser</i> starved daisy	FSS, CNPS 1B	Jun-Oct	6035-8594	Upper montane coniferous forest, granite	<b>Graniteville, English Mountain,</b> Independence Lake, <b>Soda Springs,</b> Norden, occurs within TNF
<i>Erigeron petrophilus</i> var. <i>sierrensis</i> northern Sierra daisy	FSW	Jun-Oct	900-5700	Cismontane woodland, lower montane coniferous forest, upper montane coniferous forest, rocky soils	Occurs within TNF
<i>Eriogonum umbellatum</i> var. <i>torreyanum</i> Donner Pass buckwheat	FSS, CNPS 1B	Jul-Sep	6084-8594	Meadows and seeps, upper montane coniferous forest, unstable soils	Tahoe City, Granite Chief, Independence Lake, <b>Webber Peak,</b> Norden, occurs within TNF
<i>Fritillaria eastwoodiae</i> Butte County fritillary	FSS, CNPS 1B	Mar-Jun	164-4920	Chaparral, cismontane woodland, lower montane coniferous forest, full to partial sun	Greenwood, <b>Auburn,</b> Foresthill, North Bloomfield, <b>Washington,</b> Nevada City, occurs within TNF
<i>Hydrothyria venosa</i> Hydrothyria lichen	FSS	n/a		Fresh water springs and streams	Occurs within TNF
<i>Ivesia aperta</i> var. <i>aperta</i> Sierra Valley ivesia	FSS, CNPS 1B	Jun-Sep	4854-7544	Great Basin scrub, lower montane coniferous forest, meadows and seeps, pinyon and juniper woodland, vernal pools, eastside meadows and seasonal drainages	Calpine, Sierraville, occurs within TNF
<i>Ivesia aperta</i> var. <i>canina</i> Dog Valley ivesia	FSS, CNPS 1B	Jun-Aug	5248-6560	Lower montane coniferous forest, meadows and seeps, eastside meadows and seasonal drainages	Sierraville, occurs within TNF
<i>Ivesia sericoleuca</i> Plumas ivesia	FSS, CNPS 1B	May-Sep	4805-7216	Great Basin scrub, lower montane coniferous forest, meadows and seeps, vernal pools, eastside meadows and seasonal drainages	Independence Lake, Calpine, Sattley, Sierraville, Haypress Valley, occurs within TNF

**Table 2. (continued)**

Scientific Name; Common Name	Status <sup>1</sup>	Flowering Period	Elevation Range (ft)	Habitat Requirements	Occurrence in Project Vicinity <sup>2</sup>
<i>Ivesia webberi</i> Webber's ivesia	FSS, CNPS 1B	May-Jul	3280-6806	Great Basin scrub, lower montane coniferous forest, Pinyon and juniper woodland, eastside meadows and seasonal drainages	<b>Webber Peak</b> , occurs within TNF
<i>Juncus marginatus</i> var. <i>marginatus</i> red-anthered rush	FSS, CNPS 2	Jul	2690-3280	Marshes and swamps, wet areas	<b>Chicago Park</b> , North Bloomfield, Nevada City, occurs within TNF
<i>Lewisia cantelovii</i> Cantelow's lewisia	FSS, BLM, CNPS 1B	May-Oct	1082-4494	Broadleafed upland forests, chaparral, cismontane woodland, lower montane coniferous forest, westside cliffs/outcrops	Alleghany, Pike, North Bloomfield, <b>Washington</b> , Nevada City, Goodyears Bar, Downieville, occurs within TNF
<i>Lewisia kelloggii</i> ssp. <i>hutchisonii</i> Hutchison's lewisia	FSS	(Jun)Jul-Aug	4500-7000	Upper montane coniferous forest, rocky open ridges	Alleghany, Sierra City, Mount Fillmore, occurs within TNF
<i>Lewisia kelloggii</i> ssp. <i>kelloggii</i>	FSS		5400-9000	Rocky open ridges	<b>Cisco Grove</b> , Occurs within TNF
<i>Lewisia longipetala</i> long-petaled lewisia	FSS, CNPS 1B	Jul-Aug	8200-9594	Alpine boulder and rock field, subalpine coniferous forest, damp gravel	Granite Chief, Independence Lake, Norden, occurs within TNF
<i>Lewisia serrata</i> saw-toothed lewisia	FSS, CNPS 1B	May-Jun	2952-4707	Broadleafed upland forests, lower montane coniferous forest, riparian forest, westside cliffs/outcrops	American River watersheds, Duncan Peak, Michigan Bluff, occurs within TNF
<i>Lilium humboldtii</i> ssp. <i>humboldtii</i> Humboldt lily	FSW	May-Jul	1500-3500	Chaparral, cismontane woodland, lower montane coniferous forest, openings	<b>Washington</b> , Occurs within TNF
<i>Lupinus dalesiae</i> Quincy lupine	FSS	May-Aug	3000-8000	Chaparral, cismontane woodland, lower montane coniferous forest, upper montane coniferous forest	La Porte, Mt. Fillmore, Goodyear's Bar, Occurs within TNF
<i>Mimulus laciniatus</i> cut-leaved monkeyflower	FSW	Apr-Jun	1500-9000	Chaparral, lower montane coniferous forest, upper montane coniferous forest, seeps in granite	Suspected, but unknown within TNF
<i>Monardella follettii</i> Follett's monardella	FSS, CNPS 1B	Jun-Sep	1968-6560	Lower montane coniferous forest, serpentine	Grass Valley, occurs on lands adjacent to TNF
<i>Penstemon personatus</i> closed-throated beardtongue	FSS, CNPS 1B	Jun-Sep	3493-6954	Chaparral, lower montane coniferous forest, upper montane coniferous forest, partial sun	<b>Graniteville</b> , Sierra City, occurs within TNF
<i>Perideridia bacigalupi</i> Bacigalupi's yampah	FSW	Jun-Aug	1700-3500	Chaparral, lower montane coniferous forest, serpentine	Occurs within TNF
<i>Phacelia stebbinsii</i> Stebbins' phacelia	FSS, CNPS 1B	Jun-Jul	2001-6593	Cismontane woodland, lower montane coniferous forest, meadows and seeps, westside openings	<b>Blue Canyon</b> , Duncan Peak, Michigan Bluff, <b>Graniteville</b> , <b>Cisco Grove</b> , occurs within TNF
<i>Potamogeton filiformis</i> slender-leaved pondweed	FSW, CNPS 2	May-Jul	984-7052	Marshes and swamps, lakes and ponds	Sierra City, occurs within TNF
<i>Pyrrocoma lucida</i> sticky pyrrocoma	FSS, CNPS 1B	Jul-Oct	2296-6396	Great Basin scrub, lower montane coniferous forest, meadows and seeps, eastside meadows/alkali flats	Calpine, Sattley, Sierraville, Clio, occurs within TNF

**Table 2. (continued)**

Scientific Name; Common Name	Status <sup>1</sup>	Flowering Period	Elevation Range (ft)	Habitat Requirements	Occurrence in Project Vicinity <sup>2</sup>
<i>Rhynchospora alba</i> white beaked-rush	FSW, CNPS 2	Jul-Aug	197-6691	Meadows and seeps, marshes and swamps, wet places	<b>Cisco Grove</b> , occurs within TNF
<i>Rhynchospora capitellata</i> brownish beaked-rush	FSW, CNPS 2	Jul-Aug	1492-6560	Lower montane coniferous forest, meadows and seeps, marshes and swamps, upper montane coniferous forest, wet places	<b>Chicago Park</b> , Grass Valley, Pike, North Bloomfield, Nevada City, occurs within TNF
<i>Scutellaria galericulata</i> marsh skullcap	FSW, CNPS 2	Jun-Sep	4000-7000	Lower montane coniferous forest, meadows and seeps, marshes and swamps, streambanks	Occurs within TNF
<i>Tauschia howellii</i> Howell's tauschia	FSS, CNPS 1B	Jun-Sep	5592-8200	Subalpine coniferous forest, upper montane coniferous forest	Sierra City, occurs within TNF
<i>Tonestus eximius</i> Tahoe tonestus	FSW	Jul-Aug	8000-10000	Subalpine coniferous forest, granitic areas	Occurs within TNF
<i>Utricularia minor</i> lesser bladderwort	FSW	Jul	2624-9512	Marshes and swamps, shallow water	Hobarts Mill, Occurs within TNF
<i>Veronica cusickii</i> Cusick's speedwell	FSW	Jul-Aug	7000-9800	Alpine boulder and rock field, meadows and seeps, subalpine coniferous forest, upper montane coniferous forest	Granite Chief, Occurs within TNF

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

BLM = Bureau of Land Management Sensitive Plants  
FSS = United States Forest Service Sensitive Species  
FSW = Tahoe national Forest Watchlist Species  
CNPS 1B= California Native Plant Society list endangered in California and elsewhere  
CNPS 2= California Native Plant Society list rare/threatened/endangered in California only

<sup>2</sup>Occurrence in Project Vicinity: Project Boundary quads  
are bolded, quads outside of Project Boundary are not  
bolded. Results based on CNPS Nine-quad search.



**Table 3. Target list of weeds for which incidental observations will be taken during performance of the Special-status Plants Study Proposal.**

Scientific Name	Common Name	2007 CDFA rating	Data to be collected <sup>1</sup>
<i>Ailanthus altissima</i>	Tree of heaven	Not rated	Qualitative
<i>Aegilops triuncialis</i>	Goat grass	B	Full
<i>Carduus nutans</i>	Musk thistle	A	Full
<i>Carduus pycnocephalus</i>	Italian thistle	C	Qualitative
<i>Carduus tenuiflorus</i>	Slenderflower thistle	C	Qualitative
<i>Centaurea diffusa</i>	Diffuse knapweed	A	Full
<i>Centaurea maculosa</i>	Spotted knapweed	A	Full
<i>Centaurea melitensis</i>	Maltese starthistle	C	Qualitative
<i>Centaurea solstitialis</i>	Yellow starthistle	C	Qualitative
<i>Chondrilla juncea</i>	Skeleton weed	A	Full
<i>Cirsium arvense</i>	Canada thistle	B	Full
<i>Cytisus scoparius</i>	Scotch broom	C	Full
<i>Euphorbia oblongata</i>	Oblong spurge	B	Full
<i>Ficus carica</i>	Common fig	Not rated	Qualitative
<i>Genista monspessulana</i>	French broom	C	Qualitative
<i>Halogeton glomeratus</i>	Halogeton	A	Full
<i>Hypericum perforatum</i>	Klamath weed	C	Qualitative
<i>Isatis tinctoria</i>	Dryer's woad	B	Full
<i>Lepidium latifolium</i>	Tall whitetop	B	Full
<i>Linaria genistifolia</i>	Dalmatian toadflax	A	Full
<i>Lythrum salicaria</i>	Purple loosestrife	B	Full
<i>Onopordum acanthium</i>	Scotch thistle	A	Full
<i>Sorghum halepense</i>	Johnson grass	C	Qualitative
<i>Spartium junceum</i>	Spanish broom	Not rated	Full
<i>Taeniatherum caput-medusae</i>	Medusahead	C	Qualitative
<i>Ulex europaeus</i>	Gorse	B	Full

<sup>1</sup> Data to be collected: "Full" represents GPS-derived location data and cover estimates within the following classes: <0.01 acre; <0.1 acre; <1 acre; <5 acres; >5 acres. "Qualitative" represents general descriptions of species distribution and concentration within the study area. Data collection category may be adjusted depending on local field conditions and in consultation with resource agencies.