

**FERC Project No. 2426**  
**South SWP Hydropower**  
**Botanical Resources Study**

**FIELD RESULTS AND DATA SUMMARY**

*August 21, 2019*

Consistent with Section 5.0 of the South SWP Hydropower Revised Study Plan and as approved in the Federal Energy Regulatory Commission (FERC) Study Plan Determination dated June 14, 2017, the California Department of Water Resources and Los Angeles Department of Water and Power (Licensees) provide the following Field Results and Data Summary for Study 4.1.5, *Botanical Resources Study* (Study), which includes work completed to date, key findings, associated data files, variances, and remaining work. The Licensees consider these data to be public.

**Completed Work to Date:**

The Study is complete. The Licensees completed Step 1 (Existing Data Assembly), Step 2 (Special-Status Plant Surveys), and Step 3 (Wetland and Riparian Assessment) of the Study.

**Key Accomplishments/Summary of Findings to Date:**

**Step 2: Special-Status Plant Surveys**

- Prior to conducting field surveys, reference sites for Nevin's barberry (*Berberis nevinii*), short-jointed beavertail cactus (*Opuntia basilaris* var. *brachyclada*), Peirson's morning glory (*Calystegia peirsonii*), Plummer's mariposa lily (*Calochortus plummerae*), slender mariposa lily (*Calochortus clavatus* var. *gracilis*), Palmer's mariposa lily (*Calochortus palmeri* var. *palmeri*), Davidson's bush mallow (*Malacothamnus davidsonii*), Ross' pitcher sage (*Lepechinia rossii*), Santa Susana tarplant (*Deinandra minthornii*), Baja navarretia (*Navarretia peninsularis*), Tehachapi monardella (*Monardella linoides* ssp. *oblonga*), and Peirson's lupine (*Lupinus peirsonii*) were checked and verified to determine local phenology, habitat, and other site factors that could contribute to special-status plant species identification within the proposed Project boundary.
- Although Nevin's barberry, Davidson's bush mallow, Santa Susana tarplant, and Peirson's lupine were not listed in the Botanical Resources Study Plan, reference sites for these plants were visited because it was later determined that there was potential for these plant species to occur within the proposed Project boundary. Conversely, although it was indicated in the Botanical Resources Study Plan that reference sites for Round-leaved filaree, Umbrella larkspur, Fort Tejon woolly sunflower, Piute Mountains navarretia, San Bernardino aster, and Greata's aster would be visited, no reference sites were available for these species because no local populations exist.
- The Botanical Resources Study Area is provided in the Associated Data Files section, below. The Study Area was evaluated for the presence of special-status plants between March 26, 2018 and September 13, 2018, and between April 1, 2019 and May 23, 2019. A complete early season survey, apart from Primary Project Roads, was conducted between March 26, 2018 and April 19, 2018. A complete late season survey was conducted between May 29, 2018 and September 13, 2018. Additionally, between April 1, 2019 and May 23,

2019, the Licensees conducted a follow-up comprehensive early season botanical inventory of segments of Primary Project Roads in the Study Area. Some areas of steep terrain could not be surveyed on foot, but were visually evaluated with binoculars (see Associated Data Files section, below).

- On April 2, 2019, while conducting early season botanical comprehensive surveys on the segments of Primary Project Roads adjacent to the Castaic Transmission Line, five California condors (*Gymnogyps californianus*) were observed. The California condor is a State and federally listed special-status wildlife species. No other federally listed, State listed, or California Species of Special Concern special-status wildlife incidental observations were observed during the botanical comprehensive surveys. A comprehensive list of incidental wildlife observations is provided in the Associated Data Files section, below.
- Special-status plant surveys were conducted in conjunction with the Botanical Resources Study field surveys, and special-status plant occurrences were assessed using protocols specified in the Botanical Resources Study Plan.
- Appropriate data forms were completed for areas in which these species were found. Specifically, California Department of Fish and Wildlife California Native Species Field Survey Forms were completed for all findings in the Study Area. In addition, U.S. Department of Agriculture, Forest Service (USFS) Region 6 Threatened, Endangered, and Sensitive Plant Element Occurrence Field Forms were completed for occurrences on National Forest System (NFS) lands.
- A total of 180 occurrences of five special-status species were observed during field surveys, as summarized in Table 1 and depicted on maps (see Associated Data Files). None of the species are listed under the federal Endangered Species Act or the California Endangered Species Act. However, three of the five special-status species that were observed during field surveys are Forest Service Sensitive Species.

**Table 1. Special-Status Plant Species Occurrences Identified During 2018 and 2019 Field Surveys**

Scientific Name	Common Name	State Ranking <sup>1</sup>	USFS Ranking <sup>1</sup>	Number of Occurrences in Study Area	Location of Occurrences	Site Quality	Threats
<i>Calochortus clavatus</i> var. <i>gracilis</i>	slender mariposa-lily	S3	S	37	Throughout the Study Area (see maps); occurrences were found on NFS lands	6 excellent 19 good 12 fair	Encroachment of non-native invasive plants, road and vehicle use, and human use via recreation
<i>Calystegia peirsonii</i>	Peirson's morning glory	S4	None	93	Throughout the Study Area (see maps); occurrences were found on NFS lands	48 good 39 fair 6 poor	Encroachment of non-native invasive plants, road and vehicle use, and human use via recreation

<i>Delphinium parryi</i> ssp. <i>purpureum</i>	Mt. Pinos larkspur	S4	S	1	Occurrence found in the Castaic Transmission Line area; on NFS lands	1 good	Road and vehicle use
<i>Juglans californica</i>	Southern California black walnut	S4	None	2	One occurrence found in the Castaic Creek area and one occurrence found in the Castaic Transmission Line area; both occurrences were not found on NFS lands	1 good 1 fair	Encroachment of non-native invasive plants, and road and vehicle use
<i>Opuntia basilaris</i> var. <i>brachyclada</i>	short-joint beavertail	S3	S	47	Throughout the Study Area (see maps); occurrences were found on NFS lands	1 excellent 10 good 29 fair 7 poor	Encroachment of non-native invasive plants, road and vehicle use, and human use via recreation
<b>Total</b>	<b>5 plant species</b>	<b>2 (S3) &amp; 3 (S4)</b>	<b>3 (S) &amp; 2 (None)</b>	<b>180</b>	--	--	--

Source:

<sup>1</sup>CDFW 2018

Notes:

CDFW State Listing Ranks:

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

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

USFS Plant Ranks:

S = Sensitive

Key:

NFS = National Forest System

### Step 3: Wetland and Riparian Assessment

1. The Licensees identified and assessed nine lotic areas in the 2017 and 2018 surveys. The information collected for these features is summarized below and is displayed on field summary maps (see Associated Data Files). Seven of the nine lotic areas were determined to exhibit “Proper functioning condition,” and two areas were determined to be “Functional – at risk”.

**Table 2. Lotic Features Observed During 2017 and 2018 Field Surveys**

Feature ID	Location	Functional Assessment	Wetland System (Cowardin)	Wetland Class (Cowardin)	Water Regime (Cowardin)
CC-4-Lo-A	Castaic Creek	Proper functioning condition	Riverine	Streambed	Permanently flooded
CC-4-Lo-B	Castaic Creek	Functional at risk	Riverine	Streambed	Intermittently flooded
GC-1-Lo-A	Gorman Creek	Proper functioning condition	Riverine	Streambed	Semi-permanently flooded
GC-1-Lo-B	Gorman Creek	Proper functioning condition	Riverine	Riverine	Semi-permanently flooded
GC-2-Lo-A	Gorman Creek	Proper functioning condition	Riverine	Streambed	Permanently flooded
PD-2-Lo-A	Piru Creek	Proper functioning condition	Riverine	Streambed	Permanently flooded
PL-1-Lo-C	Pyramid Lake	Proper functioning condition	Riverine	Streambed	Permanently flooded
PL-10-Lo-A	Pyramid Lake	Functional at risk	Riverine	Rock Bottom	Permanently flooded
Py-UpperPiru-1	Pyramid Lake	Proper functioning condition	Riverine	Forested	Flowing

2. The Licensees identified and assessed twenty-two lentic areas in the 2017 and 2018 surveys. This includes many disjunct areas that were similar and close in proximity, but not connected (e.g., areas of cattail marsh that were similar in structure and composition but separated by a different type of vegetation or shoreline structure). These features were combined into a single feature for purposes of analysis and reporting. These are summarized in the following table and displayed on field summary maps (see Associated Data Files). Ten features were found to have “Proper functioning condition,” eight - “Functional – at risk,” and four - “Nonfunctional.” Areas were determined to be Functional – at risk or Nonfunctional for a variety of reasons, including limited vegetative structure and rippapped shorelines. None of these characteristics were identified as a function of Project operations with the exception of those at features EF-1-Le-A, EF-1-Le-B, and EF-1-Le-C where water levels fluctuate. More detail is provided in the datasheets (see Associated Data Files).

**Table 3. Lentic Features Observed During 2017 and 2018 Field Surveys**

Feature ID	Location	Functional Assessment	Wetland System (Cowardin)	Wetland Class (Cowardin)	Water Regime (Cowardin)
CC-3-Le-A	Castaic Creek	Nonfunctional	Palustrine	Unconsolidated Shore	Ponded
EF-1-Le-A	Elderberry Forebay	Functional - at risk	Lacustrine	Rocky Shore	Ponded
EF-1-Le-B	Elderberry Forebay	Functional - at risk	Lacustrine	Rocky Shore	Ponded
EF-1-Le-C	Elderberry Forebay	Functional - at risk	Lacustrine	Emergent Wetland	Ponded
EF-4-Le-A	Elderberry Forebay	Proper functioning condition	Lacustrine	Emergent Wetland	Ponded
EF-5-Le-A	Elderberry Forebay	Proper functioning condition	Lacustrine	Emergent Wetland	Ponded
LG-2-Le-A	Liebre Gulch	Functional - at risk	Lacustrine	Emergent Wetland	Ponded
LG-3-Le-A	Liebre Gulch	Proper functioning condition	Lacustrine	Emergent Wetland	Ponded
PD-1-Le-A	Pyramid Reach	Proper functioning condition	Palustrine	Rocky Shore	Ponded
PD-1-Le-B	Pyramid Reach	Proper functioning condition	Palustrine	Rocky Shore	Ponded
PD-1-Le-C	Pyramid Reach	Proper functioning condition	Palustrine	Rocky Shore	Ponded
PL-1-Le-A	Pyramid Lake	Functional - at risk	Lacustrine	Scrub-Shrub Wetland	Ponded
PL-1-Le-B	Pyramid Lake	Proper functioning condition	Lacustrine	Emergent Wetland	Ponded
PL-1-Le-D	Pyramid Lake	Proper functioning condition	Lacustrine	Emergent Wetland	Ponded
PL-1-Le-E	Pyramid Lake	Functional - at risk	Lacustrine	Scrub-Shrub Wetland	Other
PL-4-Le-A	Pyramid Lake	Nonfunctional	Lacustrine	Unconsolidated Shore	Other
PL-9-Le-A	Pyramid Lake	Nonfunctional	Lacustrine	Emergent Wetland	Ponded
Py-Lake-1	Pyramid Lake	Proper functioning condition	Lacustrine	Forested	Flowing

Py-3	Pyramid Lake	Proper functioning condition	Lacustrine	Scrub-shrub	Ephemeral
QL-1-Le-A	Quail Lake	Nonfunctional	Lacustrine	Emergent Wetland	Ephemeral
QL-3-Le-A	Quail Lake	Functional - at risk	Palustrine	Emergent Wetland	Ponded
QL-5-Le-A	Quail Lake	Functional - at risk	Lacustrine	Emergent Wetland	Ponded

3. Lentic and lotic feature polygons were digitized in Geographic Information System (GIS) based on collected field data and aerial imagery.

**Associated Data Files** (All associated data can be found in the folder with this summary form. Note: Confidential CEII/Privileged information will not be posted publicly):

File Name	Data Description	File Type	File Location
Various. Naming convention is date_dwr_sswp_p2426_location_location type_photo number	Photos of lotic and lentic features, shoreline areas, reconnaissance	JPG	Project website
Various. Naming convention is date_dwr_sswp_p2426_PFC_FeatureID_datasheetname	PFC lentic and lotic datasheets, botanical species observed by day	PDF	Project website
20170728_dwr_sswp_p2426_pfc_incidental_observations_compiled	Incidental wildlife observations during PFC surveys	Excel	Project website
20170731_dwr_sswp_p2426_pfc_botanical_observed_species_compiled	List of all plant species observed during PFC surveys	Excel	Project website
20170505_dwr_sswp_p2426_weekly_summary_pfc_study_crew1_wk1	Field notes for 1st week of PFC surveys	Word	Project website
20170518_dwr_sswp_p2426_weekly_summary_pfc_study_crew1_wk2	Field notes for 2nd week of PFC surveys	Word	Project website
20170523_dwr_sswp_p2426_weekly_summary_pfc_study_crew1_wk3	Field notes for 3rd week of PFC surveys	Word	Project website
20190806_dwr_sswp_p2426_PFC_lentic_lotic_polygons	.ZIP file with GIS Shapefile containing lentic and lotic feature polygons with descriptive data	GIS Shapefile	Project website
20190718_dwr_sswp_p2426_LenticLotic_PFC_Study.pdf	Maps depicting lentic and lotic features, with PFC assessment	PDF	Project website
20190626_p2426_sswp_botanical_inventory_fnl	List of all plant species observed during 2018 and 2019 botanical surveys	PDF	Project website

<b>File Name</b>	<b>Data Description</b>	<b>File Type</b>	<b>File Location</b>
Various. Naming convention is date (year, month, day), location and photo number	Photos of special-status botanical occurrences, points and polygons	JPG	Project website
20181211_p2426_sswp_incidental_observations	Incidental wildlife observations during 2018 and 2019 botanical surveys	Excel	Project website
Various. Naming convention is date (year, month, day) SSWP_Daily_Survey Team Number (ST#)	2018 and 2019 botanical daily data forms	PDF	Project website
Various. Naming convention is date (year, month, day) SSWP_TES_USFS_Survey Team Number (ST#)	2018 and 2019 botanical TES Element USFS forms	PDF	Project website
Special-status_GIS_Data_20190730	2018 and 2019 special-status point and polygon GIS Shapefiles	GIS Shapefile	Project website
Access_GIS_Data_20190725	2018 and 2019 Study Area inaccessible access areas point, polygon, and line GIS Shapefiles	GIS Shapefile	Project website
Various. Naming convention is SSWP_Rare_Plants_11x17_Landsc_20190730_Figure #	Maps depicting special-status plant occurrences	PDF and JPG	Project website
SSWP_Inaccessible_Visual_Surveys_8x11_Portrat_20190813	Map depicting inaccessible access in the Study Area	PDF and JPG	Project website
SSWP_Botanical_Resources_Study_Area_8x11_20190807	Map depicting the Botanical Resources Study Area	PDF and JPG	Project website
Various. Naming convention is date (year, month, day) SSWP_CA_Native_Spp_Survey_Form_Survey Team Number (ST#)	2018 and 2019 botanical CNDDDB forms	PDF	Project website

**Key:**

CNDDDB = California Natural Diversity Database  
GIS = Geographic Information System  
PFC = Proper Functioning Condition  
SSWP = South SWP Hydropower Relicensing  
ST = survey team  
TES = Threatened, Endangered, and Sensitive  
USFS = U.S. Department of Agriculture, Forest Service

***Variances from Study Methods, Schedule, or Approach and Abnormalities in Expected Field Conditions:***

There were two variances from the FERC-approved Study:

- Step 2 (Special-Status Plant Surveys): The Study was scheduled to be completed by December 2018. However, due to ongoing fieldwork, the Study was not completed until July 2019.
- Step 3 (Wetland and Riparian Assessment): The fieldwork was scheduled to be completed by April 2018, but was not completed until June 2018.

These two variances from the FERC-approved Study affected the Study schedule, but they did not affect the overall Study because the same Study approach and methodology were utilized, as outlined in the Botanical Resources Study Plan. The information collected by July 2019 was not provided in the Updated Study Report, but final field results with accompanying GIS figures will be provided in the Draft License Application.

***Remaining Work:***

The Study is complete.

***References Cited:***

California Department of Fish and Wildlife (CDFW). 2018. California Natural Diversity Database (November 2018). Special Vascular Plants, Bryophytes, and Lichens List. Quarterly publication.