

PROJECT BACKGROUND

In 2015, PG&E conducted a comprehensive floristic survey and mapped vegetation in the vicinity of Bucks Lake for the Bucks Creek Hydroelectric Project (FERC Project No. 619). Elevations in the project range from 1,700 to 6,150 ft. Dominant vegetation types include:

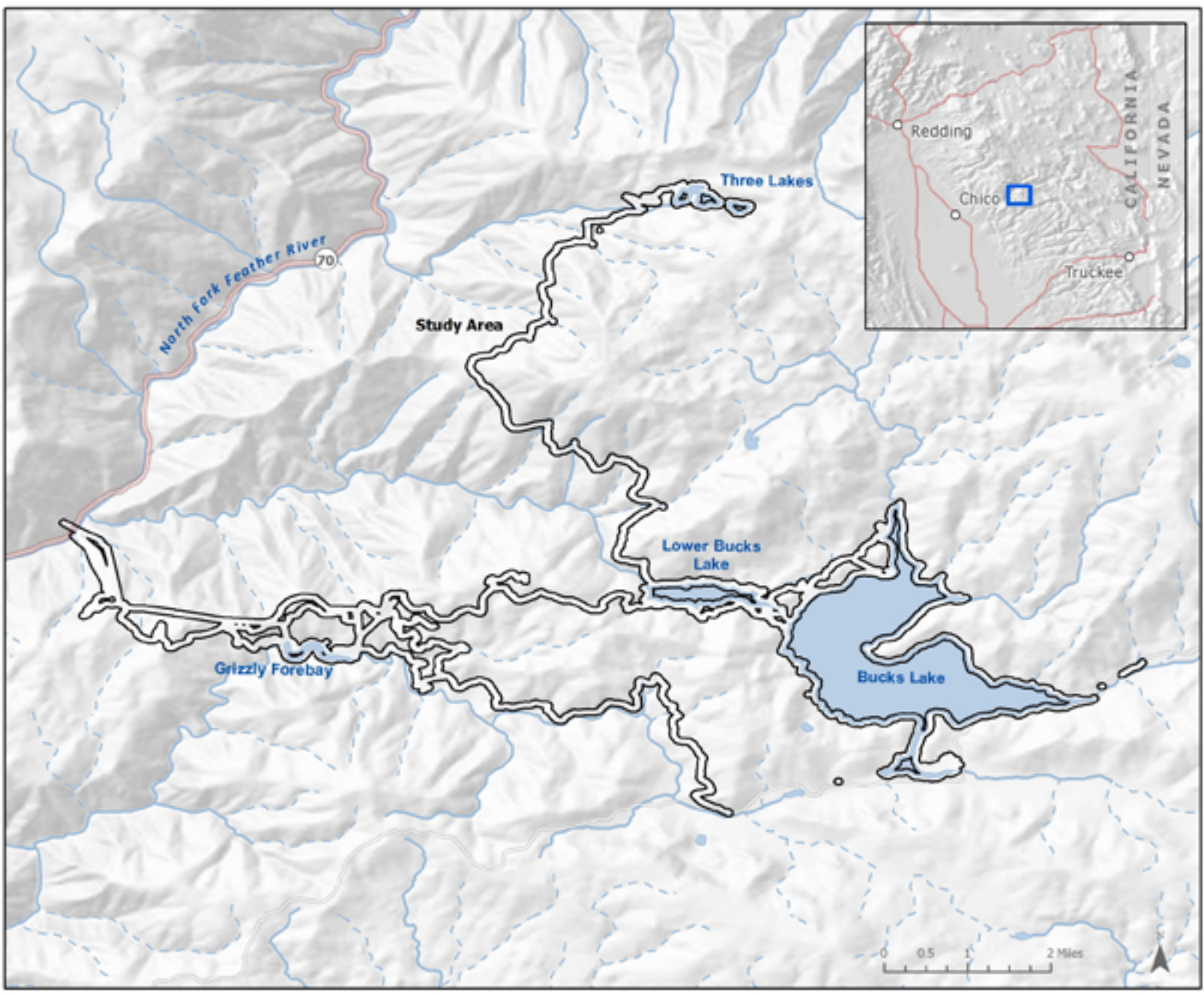
- *Abies concolor* Forest Alliance
- *Abies concolor*-*Pinus lambertiana* Forest Alliance
- *Abies magnifica*-*Abies concolor* Forest Alliance
- *Chrysolepis sempervirens* Shrubland Alliance
- *Pinus ponderosa*-*Pseudotsuga menziesii* Forest Alliance
- *Quercus kelloggii* Forest Alliance
- *Quercus vaccinifolia* Shrubland

A target list of special-status plant species and natural communities of special concern was developed based on queries of the USFWS, CNPS, and CNDDB databases. Two complete surveys of all portions of the study area were conducted. The comprehensive surveys followed USFWS¹ and CDFG² methods.

Botanists documented:

- 617 vascular plant species: 87 occurrences of 13 special-status vascular plant species
- 56 bryophyte species: 6 occurrences of 2 special-status bryophytes
- 58 vegetation alliances: 18 rare natural communities and 14 provisional alliances

Only two of the 15 special-status plants documented in 2015 had been documented in the area previously.



LOCALLY ABUNDANT SPECIAL-STATUS PLANT SPECIES



- Mildred's clarkia (*Clarkia mildrediae* subsp. *mildrediae*)
- Annual herb in the Onagraceae family
 - PNF Sensitive/CRPR 1B.3
 - Thousands of individuals of Mildred's clarkia were documented across 35 populations, usually in sandy soils along road cuts, 4,300–5,700 ft
 - 13 populations were newly documented

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- Clifton's eremogone (*Eremogone cliftonii*)
- Perennial herb in the Caryophyllaceae family
 - PNF Sensitive/CRPR 1B.3
 - Over 5,000 individuals were documented across 15 populations in open, sandy soil or within pine litter along road cuts, 4,700–5,900 ft
 - Less than half of the sightings were in the range of previously documented occurrences; eight occurrences were newly documented

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LESS FREQUENT SPECIAL-STATUS SPECIES



Clustered lady's-slipper
Cypripedium fasciculatum
PNF Sensitive/CRPR 4.2
6 individuals; 1 population



Yellow willowherb
Epilobium luteum
PNF Watchlist/CRPR 2B.3
~100 individuals; 1 population



Closed-throat beardtongue
Penstemon personatus
PNF Sensitive/CRPR 1B.2
3 individuals; 1 population



Coleman's rein orchid
Piperia colemanii
CRPR 4.3
22 individuals; 5 populations



Giant checkerbloom
Sidalcea gigantea
CRPR 4.3
Nearly 400 individuals; 8 populations



Long-leaved starwort
Stellaria longifolia
PNF Watchlist/CRPR 2B.2
~120 individuals; 3 populations



Obtuse starwort
Stellaria obtusa
CRPR 4.3
~1,670 individuals; 8 populations



Siskiyou Mountains huckleberry
Vaccinium coccineum
CRPR 3.3
~600-650 individuals; 4-6 populations

WESTERN BLUEBERRY FENS AND ASSOCIATED RARE SPECIES



Fens are listed as a California sensitive natural community³ and in the Sierra Nevada, are known to be comprised of several vegetation assemblages—many that are not by themselves considered sensitive. Vegetation alliances associated with the fens in the study area are defined in the above figure.

Fens are peat-forming wetlands, supported by nearly constant groundwater inflow⁴. This permanent saturation creates oxygen-deprived soils with very low rates of decomposition, allowing an accumulation of organic matter that is produced by wetland plants⁵. Per the USDA Forest Service's Sierra Nevada Forest Plan Amendment⁶, in the Pacific Southwest Region a fen is defined as:

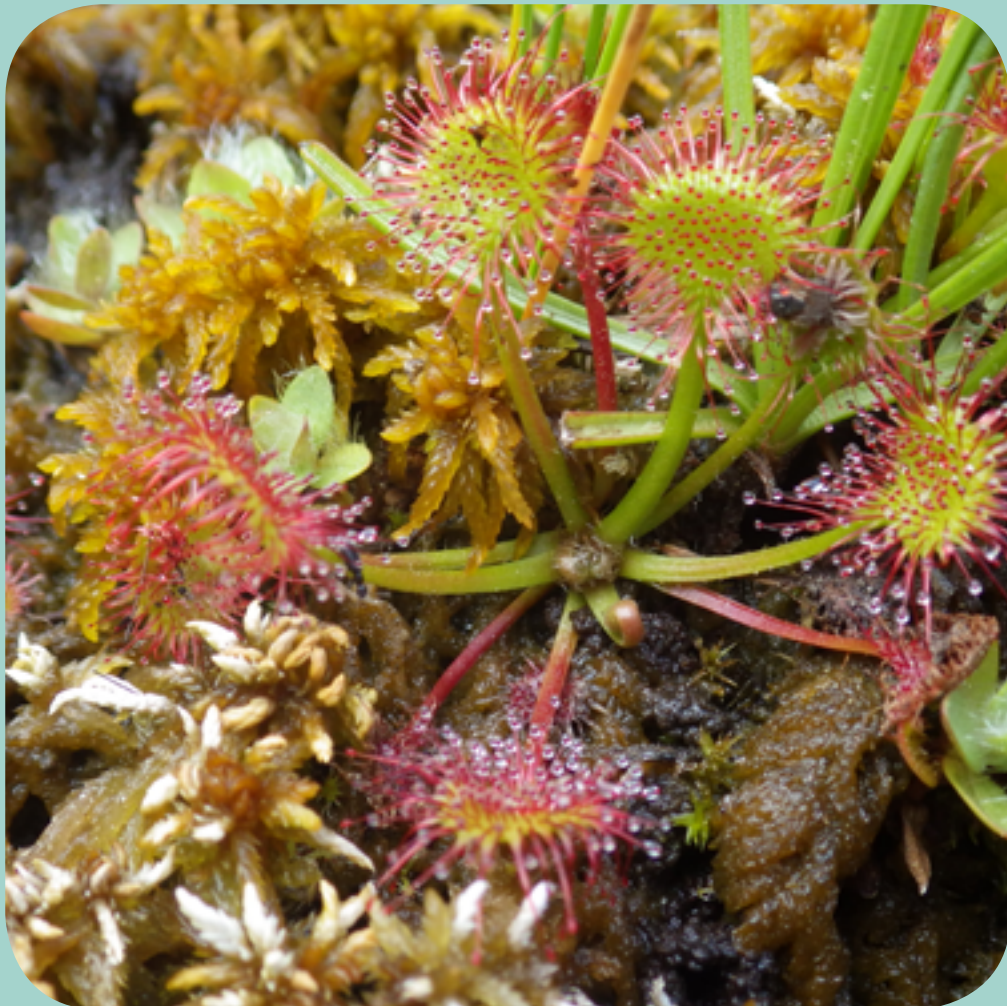
1. the presence of peat-forming vegetation (e.g. sphagnum moss [*Sphagnum* spp.], various *Meesia* spp., sundew [*Drosera* spp.]),
2. at least 40 cm of peat in the upper 80 cm of the soil profile, and
3. presence of soil saturation during most of the year.

In the Sierra Nevada, four geomorphic settings are associated with fens; slopes, basins, spring mounds, and lava bed discontinuities⁶. Two were documented in the study area, a sloping fen positioned along a hillslope and a basin fen along a lake margin.

Due to the perennial supply of water, fens are hotspots of biological diversity and habitat for many special-status vascular and nonvascular plants in California. Several special-status listed vascular and nonvascular plants were documented in the fens of the study area.



Slender cottongrass
Eriophorum gracile
CRPR 4.3
200-225 individuals; 1 population



Round-leaved sundew
Drosera rotundifolia
PNF Watchlist
1,000s of individuals; 2 populations



Three-ranked hump moss
Meesia triquetra
PNF Watchlist/CRPR 4.2
1,000s of individuals; 3 populations



Peat moss
Sphagnum spp.
PNF Watchlist
1,000s of individuals; 2 populations

EXPANDED RANGE FOR FERN-LEAVED MONKEYFLOWER (*ERYTHRANTHE FILICIFOLIA*)

- Annual herb in the Phrymaceae family
- PNF Watchlist/(CRPR 4.3)
- New taxon (also published as *Mimulus filicifolius*)
- All *Mimulus laciniatus* in Butte County now *Erythranthe filicifolia*
- Occurs in slow-draining, ephemeral seeps on exfoliating granite slabs in chaparral and yellow pine forest⁷
- Known from ~1,500–4,200 ft

New occurrence:

- 35–40 individuals; one population
- In a road-cut/granite outcrop seep, adjacent to white fir-sugar pine forest
- Plant associates included Utah service-berry, deerbrush, willowherb, klamathweed, and ponderosa pine
- Extends known range farther to the northeast and to higher elevations (~4,400 ft)

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