Appendix O

Analysis of Park Sensitive Plant Species

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Waterfalls
NPS Photo

APPENDIX O:

ANALYSIS OF PARK SENSITIVE PLANT SPECIES

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ANALYSIS OF PARK SENSITIVE PLANT SPECIES

The table below provides a summary of the park sensitive vascular and nonvascular plant species considered for inclusion in the analysis of environmental effects. Those species with the potential to be measurably affected by the proposed actions are evaluated in the "Plants of Conservation Concern (Park Sensitive Plant Species)" section of chapter 4.

Scientific Name (after Baldwin 2012) [synonym]	Common Name	CNPS Rare Plant Rank	Global Rank	State Rank	Life Form	Elevation Range (meters)	Habitat	Potential Impacts	Result
Bryaceae - Pohlia Moss									
Pohlia tundrae	tundra thread moss	2B.3	G2G3	S2S3	Moss	2,700-3,000	Damp gravelly soils of alpine boulder and rock fields	Potentially present in meadows open to grazing	Evaluated
Meesiaceae – Meesia Moss									
Meesia triquetra	three-ranked hump moss	4.2	G5	S4	Moss	1,300-2,953	Saturated fens and meadows in subalpine coniferous forests	Potentially present in meadows open to grazing	Evaluated
Meesia uliginosa	broad-nerved hump moss	2B.2	G4	S2	Moss	1,300-2,804	Wet meadows and fens in upper montane and subalpine coniferous forests	Potentially present in meadows open to grazing	Evaluated
Mniaceae – Copper Moss									
Mielichhoferia elongata	elongate copper moss	2B.2	G4?	S2	Moss	500-1,300	Metamorphic substrate, cismontane woodland; usually with high levels of heavy metals	Rocky outcrops in foothills; very low likelihood of impact by cross-country travelers	Dismissed

Scientific Name (after Baldwin 2012) [synonym]	Common Name	CNPS Rare Plant Rank	Global Rank	State Rank	Life Form	Elevation Range (meters)	Habitat	Potential Impacts	Result
Bruchiaceae – Bruchia Moss									
Bruchia bolanderi	Bolander's bruchia	2B.2	G3	S2	Moss	1,700-2,800	Wet places in lower and upper montane conifer forests	Potentially present in meadows open to grazing	Evaluated
Ditrichaceae – **Trichodon Moss**									
Trichodon cylindricus	trichodon moss	2B.2	G4G5	S2	Moss	50-2,002	Sandy exposed soil, meadows and seeps; upper montane coniferous forest	Single documented collection (1982) from parks; very low likelihood of impact by cross-country travelers	Dismissed
Helodiaceae – **Helodium Moss**									
Helodium blandowii	Blandow's bog moss	2B.3	G5	S1	Moss	1,862-2,700	Meadows and seeps, Subalpine coniferous forest/damp soil	Present in meadows open to grazing	Evaluated
Pterigynandraceae – **Myurella Moss**									
Myurella julacea	small mousetail moss	2B.3	G5	S1S2	Moss	2,700-3,000	Damp soil, boulder and rock fields, fens; subalpine coniferous forest, alpine	Potentially present in meadows open to grazing	Evaluated
Ophioglossaceae – **Adder's-tongue Family**									
Botrychium minganense	Mingan moonwort	2B.2	G4	S1.2	Perennial Herb	1,500-3,100	Meadows, along streams or around seeps; lower montane coniferous forest	Potentially present in meadows open to grazing	Evaluated

Scientific Name (after Baldwin 2012) [synonym]	Common Name	CNPS Rare Plant Rank	Global Rank	State Rank	Life Form	Elevation Range (meters)	Habitat	Potential Impacts	Result
Aspleniaceae – Spleenwort Family									
Asplenium septentrionale	northern spleenwort	2B.3	G4G5	S2.3	Perennial Herb	2,500-3,350	Crevices in granitic rocks, montane and subalpine coniferous forest	Very low likelihood of impact by cross-country travelers	Dismissed
Juncaginaceae – Arrow-grass Family									
Triglochin palustris	marsh arrow-grass	2B.3	G5	S2.3	Perennial Herb	2,100-3,450	Wet meadows, flats, stream and lake margins; upper montane, subalpine	Present in meadows open to grazing	Evaluated
Cyperaceae – Sedge Family									
Carex congdonii	Congdon's sedge	4.3	G3	S3.3	Perennial Herb	2,600-3,900	Alpine talus fields	Common in high elevation talus; very low likelihood of impact by cross-country travelers	Dismissed
Carex incurviformis *[Carex incurviformis* var. *danaensis]*	Mount Dana sedge	4.3	G4G5T3	S3.3	Perennial Herb	3,700-4,000	Open dry gravelly or rocky slopes of the alpine	Very low likelihood of impact by cross-country travelers	Dismissed
Carex tahoensis	Tahoe sedge	4.3	G5	S3	Perennial Herb	3,200-3,700	Open rocky slopes of the alpine	Very low likelihood of impact by cross-country travelers	Dismissed
Carex praticola	meadow sedge	2B.2	G5	S2S3	Perennial Herb	(20)500-3,200	Moist to wet meadows, riparian edges, open forests	Potentially present in meadows open to grazing	Evaluated

Scientific Name (after Baldwin 2012) [synonym]	Common Name	CNPS Rare Plant Rank	Global Rank	State Rank	Life Form	Elevation Range (meters)	Habitat	Potential Impacts	Result
Poaceae – Grass Family									
Elymus scribneri	Scribner's wheatgrass	2B.3	G5	S2?	Perennial Herb	2,900-4,200	Alpine boulder and rock fields	Very low likelihood of impact by cross-country travelers	Dismissed
Poa lettermanii	Letterman's bluegrass	2B.3	G4	S2.3	Perennial Herb	> 3,500	Sandy soil around boulders; high alpine	Very low likelihood of impact by cross-country travelers	Dismissed
Agrostis humilis	mountain bent grass	2B.3	G4	S1.3	Perennial Herb	1,500-3,350	Moist meadows to dry slopes; subalpine, alpine	Present in meadows open to grazing	Evaluated
Cinna bolanderi	Bolander's woodreed	1B.2	G1	S1.2	Perennial Herb	1,850-2,400	Streambanks, wet meadows, moist sites; upper montane coniferous forest	Potentially present in meadows open to grazing	Evaluated
Juncaceae – Rush Family									
Juncus hemiendytus var. *abjectus*	Center Basin rush	4.3	G5T4	S3.3	Annual Herb	1,400-3,400	Wet sands and gravels; subalpine and alpine	Single location documented in parks; very low likelihood of impact by cross-country travelers	Dismissed
Iridaceae – Iris Family									
Iris munzii	Munz's iris	1B.3	G2	S2.3	Perennial Herb	540-800	Moist rocky areas under live oaks; foothills	No known locations in wilderness	Dismissed

Scientific Name (after Baldwin 2012) [synonym]	Common Name	CNPS Rare Plant Rank	Global Rank	State Rank	Life Form	Elevation Range (meters)	Habitat	Potential Impacts	Result
Liliaceae – Lily Family									
Allium abramsii	Abrams' allium	1B.2	G2G3	S2S3	Perennial Herb	1,400-2,000	Granitic sands of montane uplands	Very low likelihood of impact by cross-country travelers	Dismissed
Erythronium pusaterii	Kaweah Lakes fawn lily	1B.3	G2	S2.3	Perennial Herb	2,100-2,775	Rocky ledges and openings, on metamorphic or granitic substrates; coniferous forest	Very low likelihood of impact by cross-country travelers	Dismissed
Fritillaria pinetorum	pinewoods fritillary	4.3	G4	S3.3	Perennial Herb	1,800-3,200	Shaded granitic slopes; montane	Very low likelihood of impact by cross-country travelers	Dismissed
Asteraceae – Aster Family									
Carlquistia muirii	Muir's raillardella	1B.3	G2	S2.3	Perennial Herb	1,100-2,500	Dry, open sites on granitic soils in montane chaparral, lower and upper montane coniferous forest	Very low likelihood of impact by cross-country travelers; potential for trail impacts at HST and Copper Creek populations mitigated through project level compliance	Dismissed

Scientific Name (after Baldwin 2012) [synonym]	Common Name	CNPS Rare Plant Rank	Global Rank	State Rank	Life Form	Elevation Range (meters)	Habitat	Potential Impacts	Result
Erigeron aequifolius	Hall's daisy	1B.3	G2	S2.3	Perennial Herb	1,500-2,100	Granitic rock ledges and crevices, lower montane coniferous forest, pinyon/juniper woodlands	Very low likelihood of impact by cross-country travelers	Dismissed
Eriophyllum lanatum var. *obovatum*	woolly sunflower	4.3	G5T3	S3.3	Perennial Herb	1,300-2,500	Lower and upper montane coniferous forest	Very low likelihood of impact by cross-country travelers	Dismissed
Hulsea brevifolia	short-leaved hulsea	1B.2	G3	S3	Perennial Herb	1,500-2,700	Gravelly soils and outcrops; montane forest	Very low likelihood of impact by cross-country travelers	Dismissed
Tonestus peirsonii	Peirson's serpentweed	4.3	G3	S3.3	Perennial Herb	2,900-3,700	Rocky sites, crevices in granite; alpine	Very low likelihood of impact by cross-country travelers	Dismissed
Antennaria pulchella	beautiful pussy-toes	4.3	G3	S3.3	Perennial Herb	2,800-3,700	Meadows, streambanks, snow basins, ridges and boulder fields; alpine	Potentially present in dry meadows open to grazing	Evaluated

Scientific Name (after Baldwin 2012) [synonym]	Common Name	CNPS Rare Plant Rank	Global Rank	State Rank	Life Form	Elevation Range (meters)	Habitat	Potential Impacts	Result
Erigeron multiceps	Kern River daisy	1B.2	G2	S2.2	Perennial Herb	1,500-2,500	Well-drained alluvial woodlands and sandbars associated with riverine habitats; openings in coniferous forest, pine or aspen woodland	Potentially present near meadows open to grazing	Evaluated
Packera indecora *[Senecio indecorus]*	rayless mountain butterweed	2B.2	G5	S1.2	Perennial Herb	0-2,300	Damp areas along streams, meadows, woodland; subalpine, alpine	Potentially present in meadows open to grazing	Evaluated
Boraginaceae – Borage Family									
Hackelia sharsmithii	Sharsmith's stickseed	2B.3	G3	S2S3.3	Perennial Herb	3,150-3,700	Rocky areas in alpine boulder and rock fields; protected crevices in cliffs, talus slopes	Very low likelihood of impact by cross-country travelers; restricted to and sheltered by talus	Dismissed
Phacelia orogenes	mountain phacelia	4.3	G3	S3.3	Annual Herb	2,060-3,400	Gravelly slopes, meadow edges in conifer forests	Very low likelihood of impact by cross-country travelers	Dismissed

Scientific Name (after Baldwin 2012) [synonym]	Common Name	CNPS Rare Plant Rank	Global Rank	State Rank	Life Form	Elevation Range (meters)	Habitat	Potential Impacts	Result
Cryptantha glomeriflora	Truckee cryptantha	4.3	G3Q	S3.3	Annual Herb	1,800-3,750	Open slopes, dry meadows, creekbeds; montane, subalpine coniferous forest	Potentially present in dry meadows open to grazing	Evaluated
Lentibulariaceae – Bladderwort Family									
Utricularia intermedia	flat-leaved bladderwort	2B.2	G5	S2.2	Perennial Herb	1,200-2,700	Aquatic; shallow water in foothill woodland	Single documented location in parks, low elevation; very low likelihood of impact by cross-country travelers	Dismissed
Scrophulariaceae – Figwort Family									
Cordylanthus rigidus ssp. *brevibracteatus*	bird's beak	4.3	G5T3	S3.3	Annual Herb	850-2,560	Pine forest, chaparral, blue oak woodland; montane	Very low likelihood of impact by cross-country travelers	Dismissed
Mimulus inconspicuus	small-flowered monkeyflower	4.3	G3	S3.3	Annual Herb	160-2,000	Hillside streams or seeps, foothill oak woodlands	Very low likelihood of impact by cross-country travelers	Dismissed
Mimulus laciniatus	cut-leaved monkeyflower	4.3	G3	S3.3	Annual Herb	> 900	Seeps on granitic outcrops in chaparral, montane coniferous forest	Very low likelihood of impact by cross-country travelers	Dismissed

Scientific Name (after Baldwin 2012) [synonym]	Common Name	CNPS Rare Plant Rank	Global Rank	State Rank	Life Form	Elevation Range (meters)	Habitat	Potential Impacts	Result
Mimulus norrisii	Kaweah monkeyflower	1B.3	G2	S2.3	Annual Herb	600-1,300	Marble outcrops in chaparral, cismontane woodland	Very low likelihood of impact by cross-country travelers	Dismissed
Polemoniaceae – Phlox Family									
Eriastrum sparsiflorum	few-flowered eriastrum	4.3	G3G4	S3?	Annual Herb	1,075-1,710	Open areas of granitic sand, yellow pine forest; lower montane	No known locations in wilderness	Dismissed
Phlox dispersa	High Sierra phlox	4.3	G3	S3.3	Perennial Herb	gen 3,600-4,200	Alpine boulder and rock fields, dry flats of loose granite	Very low likelihood of impact by cross-country travelers	Dismissed
Leptosiphon oblanceolatus [Linanthus oblanceolatus]	Sierra Nevada linanthus	4.3	G3	S3.3	Annual Herb	2,800-3,700	Open flats near meadows; subalpine coniferous forest	Present in and near meadows open to grazing	Evaluated
Caryophyllaceae – Pink Family									
Silene aperta	Tulare campion	4.3	G3	S3.3	Perennial Herb	1,800-2,800	Open areas, conifer forest	Very low likelihood of impact by cross-country travelers	Dismissed
Minuartia stricta	bog stitchwort	2B.3	G5	S2	Perennial Herb	3,500-3,900	Moist granitic sands and gravels, meadows; alpine	Potentially present in meadows open to grazing	Evaluated

Scientific Name (after Baldwin 2012) [synonym]	Common Name	CNPS Rare Plant Rank	Global Rank	State Rank	Life Form	Elevation Range (meters)	Habitat	Potential Impacts	Result
Portulacaceae – Purslane Family									
Calyptridium pygmaeum	dwarf calyptridium	1B.2	G2	S2	Annual Herb	2,100-3,200	Sandy to gravelly soils; subalpine conifer forest, alpine	Very low likelihood of impact by cross-country travelers	Dismissed
Claytonia palustris	marsh claytonia	4.3	G3	S3.3	Perennial Herb	1,000-2,500	Mesic meadows, marshes, swamps, springs, streambanks; foothill and montane	Present in meadows open to grazing	Evaluated
Claytonia parviflora ssp. *grandiflora*	streambank springbeauty	4.2	G5T3	S3.2	Annual Herb	150-1,200	Vernally moist, often disturbed uplands of the foothills	Very low likelihood of impact by cross-country travelers	Dismissed
Polygonaceae – Buckwheat Family									
Eriogonum nudum var. *murinum*	mouse buckwheat	1B.2	G5T2	S2.2	Perennial Herb	400-700	Marble outcrops in chaparral, cismontane woodland	Very low likelihood of impact by cross-country travelers	Dismissed
Eriogonum polypodum	Tulare County buckwheat	4.3	G3	S3.3	Perennial Herb	(2,400) 2,800-3,500	Granitic sands and gravels, subalpine coniferous forest	Very low likelihood of impact by cross-country travelers	Dismissed

Scientific Name (after Baldwin 2012) [synonym]	Common Name	CNPS Rare Plant Rank	Global Rank	State Rank	Life Form	Elevation Range (meters)	Habitat	Potential Impacts	Result
Eriogonum prattenianum var. *avium*	kettle dome buckwheat	4.2	G4T3	S3.2	Perennial Herb	2,500-2,900	Granitic outcrops in the upper montane coniferous forest	Single known population in Kings Canyon; very low likelihood of impact by cross-country travelers or rock climbers.	Dismissed
Brassicaceae – Mustard Family									
Draba cruciata	Mineral King draba	1B.3	G2	S2.3	Perennial Herb	2,500-3,050	Gravelly slopes, subalpine	Very low likelihood of impact by cross-country travelers	Dismissed
Draba monoensis	White Mountains draba	1B.2	G1	S1.2	Perennial Herb	3,600-4,000	Moist gravels and rock crevices; alpine	Very low likelihood of impact by cross-country travelers	Dismissed
Draba praealta	tall draba	2B.3	G5	S2.3	Perennial Herb	2,500-4,100	Meadows, streambanks, alpine fell fields	Very low likelihood of impact by cross-country travelers	Dismissed
Streptanthus farnsworthianus	Farnsworth's jewelflower	4.3	G3	S3.3	Annual Herb	400-1,400	Rock outcrops and foothill, lower montane woodlands	Very low likelihood of impact by cross-country travelers	Dismissed
Streptanthus fenestratus	Tehipite Valley jewelflower	1B.3	G2	S2	Annual Herb	1,050-1,800	Granite ledges, carbonite limestone, upland sands; open mixed-conifer/oak woodland	Very low likelihood of impact by cross-country travelers	Dismissed

Scientific Name (after Baldwin 2012) [synonym]	Common Name	CNPS Rare Plant Rank	Global Rank	State Rank	Life Form	Elevation Range (meters)	Habitat	Potential Impacts	Result
Boechera pygmaea *[Arabis pygmaea]*	Tulare County rock cress	4.3	G3	S3	Perennial Herb	2,100-3,400	Meadow edges, sand and gravel flats; upper montane and subalpine coniferous forest	Present in and near meadows open to grazing	Evaluated
Draba sharsmithii	Mount Whitney draba	1B.3	G1	S1.3	Perennial Herb	3,300-3,800	Rocky slopes, boulder fields, moist uplands; alpine	Present in meadows open to grazing	Evaluated
Streptanthus gracilis	alpine jewelflower	1B.3	G3	S3.3	Annual Herb	2,600-3,600	Dry rocky uplands; montane and subalpine coniferous forest, alpine	Present in alpine areas and adjacent to meadows open to grazing	Evaluated
Ericaceae – Indian Pipe Family									
Pityopus californica	California pinefoot	4.2	G4G5	S3.2	Perennial Herb	<1,800	Deep litter and duff, understory of montane coniferous forest	Very low likelihood of impact by cross-country travelers	Dismissed
Fumariaceae – Fumitory Family									
Dicentra nevadensis	Tulare County bleeding heart	4.3	G3	S3.3	Perennial Herb	2,200-3,100	Moist gravels, meadows, boulder and rock fields; openings in subalpine coniferous forest, alpine	Present in meadows open to grazing	Evaluated

Scientific Name (after Baldwin 2012) [synonym]	Common Name	CNPS Rare Plant Rank	Global Rank	State Rank	Life Form	Elevation Range (meters)	Habitat	Potential Impacts	Result
Apiaceae – Carrot Family									
Angelica callii	Call's angelica	4.3	G3	S3.3?	Perennial Herb	1,000-2,000	Streambanks in mesic cismontane woodland, lower montane coniferous forest	Streamside species which may be subject to trampling by fishermen, but known populations show no impacts. Potential administrative impacts addressed through project-level compliance.	Dismissed
Eryngium spinosepalum	spiny-sepaled button-celery	1B.2	G2	S2.2	Biennial Herb	100-1,270	Vernal pools, swales; foothill woodland	Very low likelihood of impact by cross-country travelers	Dismissed
Oreonana purpurascens	purple mountain-parsley	1B.2	G3	S3.2	Perennial Herb	2,375-2,860	Metamorphic sands and gravels on ridges and slopes; upper montane broadleaf and coniferous forests	Present in meadows open to grazing	Evaluated

Scientific Name (after Baldwin 2012) [synonym]	Common Name	CNPS Rare Plant Rank	Global Rank	State Rank	Life Form	Elevation Range (meters)	Habitat	Potential Impacts	Result
Fabaceae – Pea Family									
Astragalus kentrophyta var. *danaus*	Sweetwater Mountains milkvetch	4.3	G5T3	S3	Perennial Herb	2,900-4,000	Alpine boulder and rock fields, subalpine coniferous forest on rocky substrate	Very low likelihood of impact by cross-country travelers	Dismissed
Oxytropis parryi	Parry's oxytrope	4.3	G5	S3.3	Perennial Herb	3,100-3,800	Dry knolls and rocky ridges, near timberline and above; alpine fell-fields	Single known observation from parks in 1981; locality too general to assign coordinates. Very low likelihood of impact by cross-country travelers	Dismissed
Astragalus ravenii	Raven's milkvetch	1B.3	G1Q	S1.2	Perennial Herb	3,400-3,450	Metamorphic gravels, boulder and rock fields; subalpine coniferous forest, alpine	Present in alpine areas open to grazing	Evaluated
Hosackia oblongifolia var. *cuprea* *[Lotus oblongifolius* var. *cupreus]*	copper-flowered bird's foot trefoil	1B.3	G5T2	S2.3	Perennial Herb	2,400-2,800	Obligate wetland plant of montane meadows within pine woodlands and coniferous forest	Potentially present in meadows open to grazing	Evaluated

Scientific Name (after Baldwin 2012) [synonym]	Common Name	CNPS Rare Plant Rank	Global Rank	State Rank	Life Form	Elevation Range (meters)	Habitat	Potential Impacts	Result
Lupinus lepidus var. *culbertsonii*	Hockett Meadows lupine	1B.3	G3?T1	S1.3	Perennial Herb	2,500-3,000	Mesic rocky slopes, meadows; subalpine forests, alpine	Present in meadows open to grazing and in areas open to off-trail stock use	Evaluated
Onagraceae – Evening Primrose Family									
Epilobium oreganum	Oregon fireweed	1B.2	G2	S2.2	Perennial Herb	550-1,800	Wet meadows, bogs, and small streams; montane	Potentially present in meadows open to grazing. Reported occurances of this NW CA species in the central & southern SN are likely erroneous determinations of *E. ciliatum*; although this may be a case of misidentifi-cation, we will continue to survey for this plant in meadows used by pack stock	Evaluated

Scientific Name (after Baldwin 2012) [synonym]	Common Name	CNPS Rare Plant Rank	Global Rank	State Rank	Life Form	Elevation Range (meters)	Habitat	Potential Impacts	Result
Rhamnaceae – Buckthorn Family									
Ceanothus pinetorum	Kern ceanothus	4.3	G3	S3.3	Evergreen Shrub	1,050-2,750	Granitic outcrops, slopes, ridges and flats; lower montane to subalpine coniferous forest	Woody species; very low likelihood of impact by visitors or pack stock	Dismissed
Grossulariaceae – Currant Family									
Ribes menziesii var. *ixoderme*	canyon gooseberry	1B.2	G4T2	S2.2	Deciduous Shrub	900-1,100	Chaparral, foothill and lower montane woodlands	Woody species; very low likelihood of impact by visitors or pack stock	Dismissed
Ribes tularense	Sequoia gooseberry	1B.3	G2	S2.3	Deciduous Shrub	1,660-1,740	Lower and upper montane coniferous forest	Woody species; very low likelihood of impact by visitors or pack stock	Dismissed
Hydrangeaceae – Hydrangea Family									
Jamesia americana var. *rosea*	cliffbush	4.3	G5T3	S3.3	Deciduous Shrub	2,070-3,700	Rocky outcrops, boulders; subalpine coniferous forest, alpine	Woody species; very low likelihood of impact by visitors or pack stock	Dismissed
Rosaceae – Rose Family									
Rosa pinetorum [Sierra Nevada populations now treated as *R. bridgesii* which is common]	Sierran dwarf rose				Deciduous Shrub	700-2,500	Open forest, rocky areas	Woody species; very low likelihood of impact by visitors or pack stock	Dismissed

Scientific Name (after Baldwin 2012) [synonym]	Common Name	CNPS Rare Plant Rank	Global Rank	State Rank	Life Form	Elevation Range (meters)	Habitat	Potential Impacts	Result
Ivesia campestris	field ivesia	1B.2	G3	S3.2	Perennial Herb	2,200-3,100	Meadow edges; upper montane and subalpine coniferous forest	Present in meadows open to grazing	Evaluated
Petrophytum caespitosum ssp. *acuminatum*	marble rockmat	1B.3	G5T2	S2	Sub-shrub	900-2,350	Limestone/ marble and granite cliffs and rocky outcrops; montane conifer forest	Potential impacts from rock climbers in the Kings River Canyon	Evaluated

The following information explains the column headings.

CNPS Rare Plant and Threat Ranks. Plants with a California Rare Plant Rank of 1B are rare throughout their range with the majority of them endemic to California. All of the plants constituting California Rare Plant Rank 1B meet the definitions of sec. 1901, chapter 10 (Native Plant Protection Act) or secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing. Plants with a California Rare Plant Rank of 2B are considered rare, threatened, or endangered in California, but more common elsewhere. Plants with a Rare Plant Rank of 4 are those with limited distribution in California; this is considered a watch list for plants of concern throughout the state.

CNPS listing also includes Threat Ranks which are signified by a decimal number after the Rare Plant Rank. These Threat Ranks are to be considered guidelines in the assessment of threat level.

0.1 = Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2 = Fairly threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
0.3 = Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

The California Department of Fish and Wildlife maintains the California Natural Diversity Database (CNDDB) using the same ranking methodology employed by all state Heritage programs. This methodology was originally developed by The Nature Conservancy and is now maintained by NatureServe. It includes a Global rank (G-rank), describing the rank for a given taxon over its entire distribution and a State rank (S-rank), describing the rank for the taxon over its state distribution. For subspecies and varieties, there is also a "T" rank describing the global rank for the subspecies. The global and state ranks for each of the species retained for analysis is also included in the table.

The *global rank* is a reflection of the overall status of a plant throughout its global range. Both Global and State ranks represent a letter + number score that reflects a combination of Rarity, Threat, and Trend factors, with weighting being heavier on Rarity than the other two.

G1 = Critically Imperiled — At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
G2 = Imperiled — At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
G3 = Vulnerable — At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors
G4 = Apparently Secure — Uncommon but not rare; some cause for long-term concern due to declines or other factors.
G5 = Secure — Common; widespread and abundant.

Subspecies receive a T-rank attached to the G-rank. With the subspecies, the G-rank reflects the condition of the entire species, whereas the T-rank reflects the global situation of just the subspecies or variety. For example: *Hosackia oblongifolia* var. *cuprea*. This plant is ranked G5T2. The G-rank refers to the whole species range i.e., *Hosackia oblongifolia*, while the T-rank refers only to the global condition of var. *cuprea*.

The *state rank* (S-rank) is assigned much the same way as the global rank, but state ranks refer to the imperilment status only within California's state boundaries.

S1 = Critically Imperiled—Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.
S2 = Imperiled—Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state.
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.
S5 = Secure—Common, widespread, and abundant in the state.

Uncertainty about the rank of an element is expressed in two major ways:

By expressing the ranks as a range of values: e.g., S2S3 means the rank is somewhere between S2 and S3.

By adding a "?" to the rank: e.g., S2? represents more certainty than S2S3, but less certainty than S2.

A "Q" added to the rank indicates that the taxon is very rare, but there are taxonomic questions associated with it.