



Ironwood (*Olneya tesota*). The Chuckwalla National Monument area contains about one in five of global occurrences of this tree. Photo by Bob Wick.

Sensitive Flora of Chuckwalla National Monument

The proposed Chuckwalla National Monument is a transition zone between the Sonoran desert (Colorado section) and the Mojave desert (Arizona-Sonora Desert Museum, 2021). Its mountains, alluvial fans, and dry lakes contain numerous different habitats and microclimates. Thus it has impressive biodiversity, including a number of rare plants that are scattered throughout the area, from some of California's few populations of saguaro cactus (*Carnegiea gigantea*) in the extreme southeastern corner to yellow hairy sand verbena (*Abronia villosa* var. *aurita*) in the Mecca Hills in the northwestern corner. Many are California endemics. For most of the rarest plants, the Chuckwalla area is critical habitat, containing about half of known occurrences of several species.

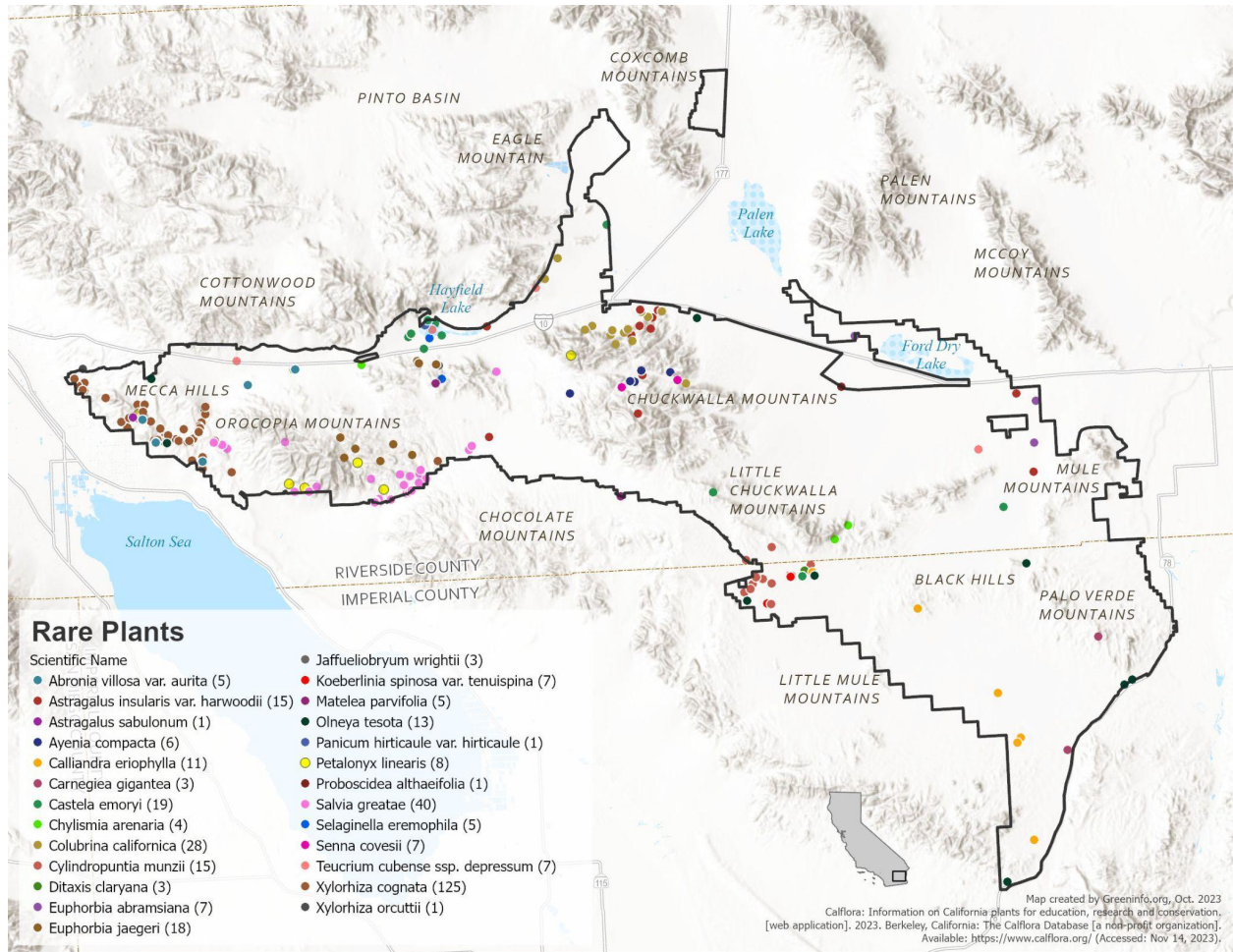
The area also contains a substantial proportion of California's microphyll woodlands (shrub stands associated with desert washes), extremely valuable habitat for a multitude of species (Fire and Resource Protection Program, 2019; Laudenslayer, n.d.).

Plants that would especially benefit from the added protection of the monument designation include the following.

- Orocopia Mountains spurge (*Euphorbia jaegeri*): globally critically imperiled, on the BLM California Sensitive Plants list, California endemic; monument includes about half of observed sites worldwide (California Native Plant Society Rare Plants Program [CNPSRPP], n.d.-c; Bureau of Land Management [BLM], 2023; CalFlora n.d.-c, n.d.-h).
- Yellow hairy sand verbena (*Abronia villosa* var. *aurita*): globally imperiled variety, on the BLM California Sensitive Plants List; monument includes most of the easternmost populations of this species (CNPSRPP n.d.-a; BLM, 2023; CalFlora n.d.-a, n.d.-h).
- Munz's cholla (*Cylindropuntia munzii*): globally vulnerable, on the BLM California Sensitive Plants List; some occurrences outside monument under threat from military activity; monument includes about 1/4 of observed population (CNPSRPP n.d.-b; BLM, 2023; CalFlora n.d.-b, n.d.-h).
- Mecca aster (*Xylorhiza cognata*): globally threatened, threatened within California, on the BLM California Sensitive Plants List, California endemic known largely from the Mecca Hills; over half of occurrences are within the monument (CNPSRPP n.d.-e; BLM, 2023; CalFlora n.d.-g, n.d.-h).
- Orocopia sage (*Salvia greatae*): globally threatened/vulnerable, on the BLM California Sensitive Plants List, California endemic known largely from the Orocopia Mountains; almost half of occurrences are within the monument (CNPSRPP n.d.-d.; BLM, 2023; CalFlora n.d.-d, n.d.-h).
- Desert ironwood (*Olneya tesota*): IUCN near-threatened, long-lived trees in decline; about 1/5 of occurrences are within the proposal area (International Union for Conservation of Nature and Natural Resources, 2018; CalFlora, n.d.-e, n.d.-f).



Abronia villosa var. *aurita*. Photo by Rachel Davis.



The table below lists the more sensitive species of the proposal area, also shown on the above map. Numbers in map legend are observations in CalFlora (CalFlora n.d.-h).

Common name	Scientific name	Status	General location
Desert Ironwood	<i>Olneya tesota</i>	IUCN Near Threatened	Mecca Hills
Yellow Hairy Sand Verbena	<i>Abronia villosa</i> var. <i>aurita</i>	1B.1, G5T2 (variety imperiled), BLM S	Mecca Hills
Orocofia Mountains Spurge	<i>Euphorbia jaegeri</i>	1B.1, G1, BLM S	Orocofia Mountains
Mecca Aster	<i>Xylorhiza cognata</i>	1B.2, G2, BLM S	Mecca Hills
Orcutt's Woody Aster	<i>Xylorhiza orcuttii</i>	1B.2, G3?, BLM S	Mecca Hills
Munz's Cholla	<i>Cylindropuntia munzii</i>	1B.3, G3, BLM S	Southeast Chuckwalla Bench
Orocofia Sage	<i>Salvia greatae</i>	1B.3, G2G3, BLM S	Orocofia Mountains

Roughstalk Witch Grass	<i>Panicum hirticaule</i> var. <i>hirticaule</i>	2B.1	Chuckwalla Valley
Desert Scaleseed	<i>Spermolepis gigantea</i>	2B.1	Hayfield Lake
Harwood's Milkvetch	<i>Astragalus insularis</i> var. <i>harwoodii</i>	2B.2	Chuckwalla Mountains
Gravel Milkvetch	<i>Astragalus sabulonum</i>	2B.2	Northwest lowlands
Saguaro	<i>Carnegiea gigantea</i>	2B.2	Southeast, Palo Verde Mountains
Emory's Crucifixion Thorn	<i>Castela emoryi</i>	2B.2	Scattered lowlands
Sand Evening Primrose	<i>Chylismia arenaria</i>	2B.2	Orocopia Mountains, Little Chuckwalla Mountains
Glandular Ditaxis	<i>Ditaxis claryana</i>	2B.2	Lowlands near Little Chuckwalla Mountains
Abrams' Spurge	<i>Euphorbia abramsiana</i>	2B.2	Northern lowlands
Crown Of Thorns	<i>Koeberlinia spinosa</i> var. <i>tenuispina</i>	2B.2	Chuckwalla Bench
Desert Spikemoss	<i>Selaginella eremophila</i>	2B.2	Chuckwalla Mountains
Coves' Cassia	<i>Senna covesii</i>	2B.2	Chuckwalla Mountains
Dwarf Germander	<i>Teucrium cubense</i> ssp. <i>depressum</i>	2B.2	Northern lowlands
Desert Ayenia	<i>Ayenia compacta</i>	2B.3	Chuckwalla mountains
Pink Fairyduster	<i>Calliandra eriophylla</i>	2B.3	Chuckwalla Bench, southeastern lowlands
Las Animas Colubrina	<i>Colubrina californica</i>	2B.3	Chuckwalla Mountains

Wright's Jaffueliobryum Moss	<i>Jaffueliobryum wrightii</i>	2B.3	Orocopia and Chuckwalla Mountains
Parish's Desert-thorn	<i>Lycium parishii</i>	2B.3	Orocopia and Chuckwalla Mountains
Spearleaf	<i>Matelea parvifolia</i>	2B.3	Orocopia Mountains
Long Leaved Sandpaper Plant	<i>Petalonyx linearis</i>	2B.3	Orocopia and Chuckwalla Mountains

Plant locations from CalFlora What Grows Here (CalFlora, n.d.-h).

Plant statuses from CNPS Rare Plants Inventory pages (CNPSRPP, 2023) and BLM Sensitive Plants List (BLM, 2023).

CNPS plant rankings from CNPS Rare Plants Inventory: RPI Glossary (CNPSRPP, 2022):

1B.1: Plants rare, threatened, or endangered in California and elsewhere; rare throughout their range; eligible for state listing under the California Endangered Species Act; threatened in California.

1B.2: Plants rare, threatened, or endangered in California and elsewhere; rare throughout their range; eligible for state listing under the California Endangered Species Act; fairly threatened in California.

1B.3: Plants rare, threatened, or endangered in California and elsewhere; eligible for state listing under the California Endangered Species Act; rare throughout their range; plants minimally threatened.

2B.1: Plants rare, threatened, or endangered in California but common elsewhere; eligible for state listing under the California Endangered Species Act; threatened in California.

2B.2: Plants rare, threatened, or endangered in California but common elsewhere; eligible for state listing under the California Endangered Species Act; plants moderately threatened.

2B.3: Plants rare, threatened, or endangered in California but common elsewhere; eligible for state listing under the California Endangered Species Act; not very threatened in California.

Global status

G1: Globally Critically Imperiled: At very high risk of extinction

G2: Globally imperiled: At high risk of extinction

G3: Globally vulnerable: At moderate risk of extinction

G5: Globally secure (at species level)

T2: taxon imperiled

BLM S denotes Bureau of Land Management Sensitive Species

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