

# Plant Species Evaluation Form

## *Fritillaria glauca* Greene

### SISKIYOU FRITILLARIA

**Family:** Liliaceae  
(CNPS 2018)

**PLANTS Symbol:** FRGL  
(USDA 2018)

**Calif. Endemic:** No  
(CNPS 2018)

**Synonyms/Other Names:** No other names or synonyms have been used to refer to this taxon (Tropicos 2018).

**Identification Issues:** Overlap in morphology and distribution between *F. glauca* and *F. purdyi* makes identification of respective taxa challenging (Jensen and Bittman 2008).

#### Taxonomy:

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Species In Genus: +- 100 species: northern temperate. Etymology: (Latin: dicebox, from fruit shape). Note: Bulbs of some eaten by Native Americans.

Genus Description – Habit: Bulb with 1--several large fleshy scales, 0--many small scales. Stem: erect, simple (0 in non-flowering plants). Leaf: cauline, alternate, subopposite, or whorled below, sessile, linear to +- ovate (1 bulb-leaf in non-flowering plants). Inflorescence: raceme; bracts leaf-like. Flower: generally nodding, bell- or cup-shaped; perianth parts 6 in 2 whorls, each part with distinct glandular area in lower 1/2; stamens 6, included, attached at perianth base, anthers attached +- near middle; ovary +- sessile, style 1, +- entire or 3-branched. Fruit: capsule, loculicidal, thin-walled, +- rounded, 6-angled, or winged, chambers 3. Seed: many, 2 rows per chamber, flat, +- brown.

Species Description – Habit: Large bulb scales 3--9, small 1--9. Stem: 0.8--2 dm. Leaf: 2--4, alternate, 3.5--9 cm, lance-oblong or sickle-shaped, glaucous. Flower: nodding; perianth parts 1.5--2.5 cm, lance-oblong, +- purple or +- green marked yellow, nectary < 1/2 perianth, widely lanceolate, green with maroon dots; style divided 1/2. Fruit: widely winged. Chromosomes: 2n=24. eFlora Treatment Author: Dale W. McNeal & Bryan D. Ness.

#### Status:

Note: Federally recognized Endangered, Threatened, Proposed, or Candidate species under the Endangered Species Act are omitted as they do not meet the definition of a Species of Conservation Concern (FSH 1909.12 § 12.52).

State Listing	G-rank	S-rank	CRPR	R5 FSS	NFP SM	CA BLM
CA: Not listed NV: Not listed OR: Not listed	G3G4	CA: S3 NV: Not listed OR: S3	4.2	Not listed	Not listed	Not listed

SWAP: Not listed	NNHP: Not listed	NNPS: Not listed	ORBIC: 4: Watch	OCS: Not listed	IUCN: Not listed
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Expanded abbreviations and citations: State Listing=California Endangered Species Act Listing (CDFW 2018b), Nevada Division of Forestry Fully Protected Plant Species (NAC 527) (NDF 2012), Oregon Department of Agriculture Listed Plants (ODA 2014); G-rank=Global Conservation Status (CDFW 2018a; NatureServe 2018); S-rank=Subnational (state or province-level) Conservation Status (CDFW 2018a; NatureServe 2018; NNHP 2017; ORBIC 2016); CRPR=California Rare Plant Rank (CNPS 2018); R5 FSS=USDA Forest Service Region 5 Regional Forester Sensitive Plant Species List (USDA 2013); NFP SM=Forest Service and Bureau of Land Management Northwest Forest Plan Survey and Manage Species (USDA 2001); CA BLM=California Bureau of Land Management Designated Sensitive Species (BLM 2010); SWAP=California State Wildlife Action Plan Status (CDFW 2015); NNHP=Nevada Natural Heritage Program Status (NNHP 2017); NNPS=Nevada Native Plant

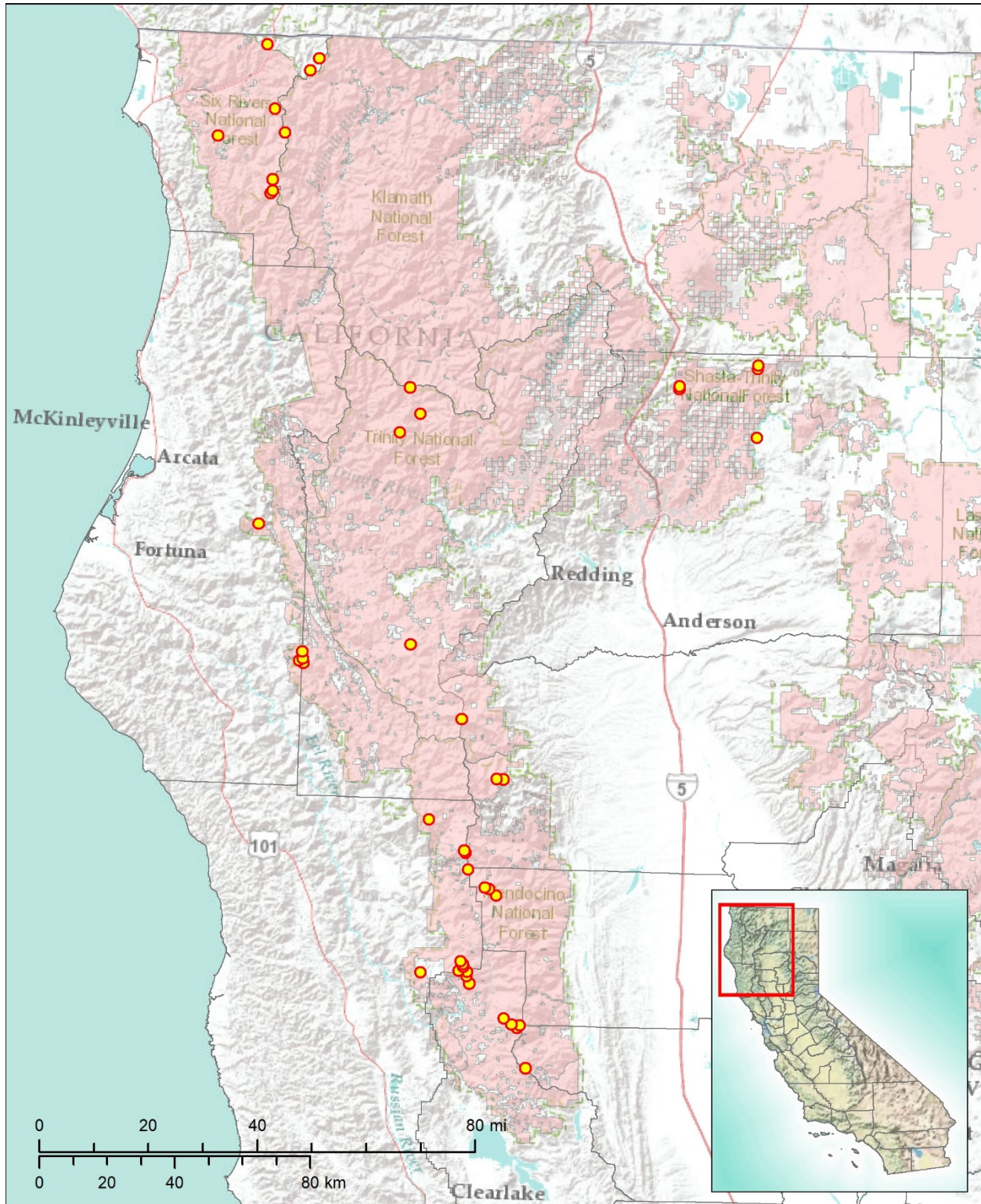
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Society Status (NNHP 2017); ORBIC=Oregon Biological Information Center Status (ORBIC 2016); OCS=Oregon Conservation Strategy Species (ODFW 2016); IUCN=International Union for Conservation of Nature Red List Status (IUCN 2017).

*Fritillaria glauca* was added to the first edition of the CNPS *Inventory* at the equivalency of California Rare Plant Rank (CRPR) 4 (plants of limited distribution in California; watchlist) (Powell 1974). It was Considered But Rejected (CBR) in the second edition of the CNPS *Inventory* as being too common (Smith et al. 1980), and remained CBR in all print editions thereafter (Smith and York 1984; Smith and Berg 1988; Skinner and Pavlik 1994; RPSAC and Tibor 2001). In 2008, *F. glauca* was re-evaluated and proposed for addition to CRPR 2B (rare, threatened, or endangered in California, common elsewhere); at the time it was known from only 23 occurrences in 9 counties in California (mostly based on historical collections and observations), and from more than 80 occurrences in southwest Oregon. It was ultimately added to CRPR 4.2 of the *Inventory* on August 7, 2008, based on comments submitted during review (Jensen and Bittman 2008). Its status of CRPR 4.2 has remained consistent since that time (CNPS 2018).

**Distribution:** *Fritillaria glauca* ranges from Western North America, restricted to northwest California and southwest Oregon. Plants are known from roughly 83 occurrences in Oregon within the Siskiyou Mountains across Curry, Douglas (southern), Jackson, and Josephine counties (NatureServe 2018). The 43 California occurrences are found throughout the Northwestern California (NW) bioregion (exc. North Coast [NCo]) in Colusa, Del Norte, Glenn, Humboldt, Lake, Mendocino, Shasta, Tehama, and Trinity counties. A total of 38 (38/43, ~88%) of California occurrences are found on NFS lands within Mendocino NF (21/38, ~55%), Six River NF (9/38, ~24%), Shasta NF (6/38, ~16%), and Klamath NF (2/38, ~5%) (Calflora 2017; CCH 2017).

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**Sources:** *Distribution:* Calflora 2017, CCH 2017. *Layers:* USDA Forest Service, Pacific Southwest National Forests: CPAD 2016. California counties: CDF 2009. *Basemaps:* California inset map: © 2013 National Geographic Society, i-cubed (Esri 2017a). Main map: Esri, DeLorme, USGS, NPS (Esri 2012) and Esri, USGS, NOAA (Esri 2017b).

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**Locations within California:**

Record numbers indicate sites that contain an individual, population, or groups of populations located within ¼ mile of each other, per the California Natural Diversity Database (CNDDDB 2017) definition of Element Occurrences (EOs) in California. Official EO numbers for plants in California are determined solely by the CNDDDB and are included within the Reference (Source) column for CNDDDB data. Duplicate records from the same site are given the same record number and included in red. The Population Info column includes total number of individuals and total number and size of populations/sub-populations when provided. Elevations provided in meters from source have been converted to feet. If not provided in original source, Land Manager information was obtained using the California Protected Areas Database (CPAD 2016) and Quad information was obtained using 24K Quads, SDE Feature Class (CDFG 2013). All other information is directly from the Reference (Source) unless additional citation is given.

Redacted for conservation purposes.

**Distribution on National Forest System (NFS) Lands:**

(Please see Reference column of Locations table above for references pertaining to Record Numbers indicated on NFS lands.)

National Forest System (NFS) lands	Record #s (from Locations table above)	CNDDDB EOs	Non-CNDDDB Records	Recent (seen in past 20 yrs.)	Historic (not seen in past 20 yrs.)	Most Recent Obs.	EOs/ Recs. (5 mile buffer)	Total Records on NFS lands
Angeles:	-	-	-	-	-	-	-	0
Cleveland:	-	-	-	-	-	-	-	0
Eldorado:	-	-	-	-	-	-	-	0
Inyo:	-	-	-	-	-	-	-	0
Klamath:	42, 44	0	2	0	2	21-Jun-1977	6	2
Lake Tahoe Basin MU:	-	-	-	-	-	-	-	0
Lassen:	-	-	-	-	-	-	-	0
Los Padres:	-	-	-	-	-	-	-	0
Mendocino:	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20, 21, 22	0	21	1	20	22-Jun-2010	2	21
Modoc:	-	-	-	-	-	-	-	0
Plumas:	-	-	-	-	-	-	-	0
San Bernardino:	-	-	-	-	-	-	-	0
Sequoia:	-	-	-	-	-	-	-	0
Shasta-Trinity:	23, 28, 31, 32, 33, 34, 35	0	7	0	7	15-Jun-1993	5	7
Sierra:	-	-	-	-	-	-	-	0
Six Rivers:	24, 25, 26, 27, 29, 38, 39, 40, 41, 43	0	10	6	4	1-Jun-2015	3	10
Stanislaus:	-	-	-	-	-	-	-	0
Tahoe:	-	-	-	-	-	-	-	0
<b>Totals:</b>	N/A	0	40	7	33	N/A	16	40

**Demographic and Population Trends:** Total number of occurrences for this taxon were estimated using GIS tools and methods described by Green and Sims (2018). Population count and size estimate data are lacking for this taxon. All but seven California occurrence records (36/43, ~84%) are historic and have not been documented in more than 20 years (CCH 2017). Abundance and improved locality information is encouraged (CNPS 2018).

**Life History:** *Fritillaria glauca* is a bulbiferous graminoid that blooms from February through April (CNPS 2018). Perianth is made up of petaloid tepals, each with nectariferous glands (McNeal and Ness 2012). Members of the genus *Fritillaria* are known to be visited by bees (melittid bees, mining bees, and sweat bees), beetles, hummingbirds, and flies (CPC 2018). Bumble bees and moths have been observed visiting the closely related *F. pluriflora* (*Fritillaria* subsection *Liliorhiza*, Ryan 2014; NatureServe 2018).

**Diversity:** *Fritillaria* is one of 15 genera in Liliaceae. Contemporary Liliaceae is divided into the subfamilies Lilioideae (10 genera, incl. *Fritillaria*, *Lilium*, *Tulipa*, and seven others) Calochortoideae (two genera; *Calochortus* and *Tricyrtis*), and Streptopoideae (three genera: *Prosartes*, *Scoliopus*, and *Streptopus*) (Stevens 2001). Dramatic changes in the circumscription of Liliaceae has occurred in the last several decades. Traditional classification systems treated most monocots with showy flowers, six tepals, six stamens, and a superior trilocular ovary as part of Liliaceae. Many genera formerly recognized within Liliaceae are now distributed among families within Asparagales and Liliales (Peruzzi 2016). *Fritillaria* is a widespread group of 140 species found across the northern hemisphere. Members of the genus *Fritillaria* have enormous genomes, nearly 190 times the size of *Arabidopsis thaliana* (Day et al. 2014).

**Habitat:** *Fritillaria glauca* occurs on serpentine, talus slopes in alpine boulder and rock fields, subalpine coniferous forests, and upper montane coniferous forests (CNPS 2018). Barren, dry, and rocky slopes. It is often on serpentine, and a strong indicator of serpentine substrates (NatureServe 2018). The broad distribution of *F. glauca* is not indicative of commonness; suitable habitat is reportedly isolated and uncommon (Jensen and Bittman 2008).

**Habitat Status or Trend:** Plants are found within openings and exposures in habitat associated with coniferous forests (CNPS 2018; McNeal and Ness 2012; NatureServe 2018). Fire suppression has led to significant changes in the size and spatial characteristics of openings in forests within northwestern California during the last century (Skinner 1995).

**Capacity for the Species to Disperse:** Unknown. *Fritillaria glauca* produces thin-walled and widely winged loculicidal capsules (McNeal and Ness 2012).

**Threats:** Plants in California are reportedly threatened by vehicles. Listed threats in Oregon include road construction, road maintenance, mining, trampling, erosion, and rock slides (NatureServe 2018).

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Aaron E. Sims, Rare Plant Botanist, California Native Plant Society, (916) 324-3816, asims@cnps.org. October 23, 2018.

**Reviewer(s) and Date:**

David Magney, Rare Plant Program Manager, California Native Plant Society, (916) 447-2677 ext. 205, dmagney@cnps.org. October 23, 2018.

**Formatting:** Form is set up as 508 compliant. Please use the “styles” if further formatting is necessary.

**Purpose:** This is to maintain the best available science on a species that could be used by the Forest Service in a variety of functions. Specifically, there would be additional steps and evaluations to determine whether or not this species would be considered a Species of Conservation Concern under the 2012 Planning Rule or a Sensitive Species under the 1982 Planning Rule.

**Additional Considerations at the Forest Level:** Habitat amount and juxtaposition of both the species and habitat locations.