Rare Plant Status Review: *Chlorogalum grandiflorum*
Proposed Change from California Rare Plant Rank 1B.2, G3 / S3 to 4.2, G3 / S3
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Changes to the original review are in blue text

Background and Taxonomy

Chlorogalum grandiflorum Hoover is a perennial, bulbiferous herb in the Agavaceae known from the Sierra Nevada foothills of Amador, Calaveras, El Dorado, Placer, and Tuolumne counties in California. It is included in *The Jepson Manual* (Jernstedt 1993), the *Jepson eFlora* (Keil and Jernstedt 2020), and *Flora of North America* (Jernstedt 2003). This species differs from the more common *Chlorogalum pomeridianum* var. *pomeridianum* (with which it overlaps in distribution) in having very short flower pedicels that are much shorter than the perianth (vs equal to or longer than the perianth) and mostly smooth bulb coats (vs very fibrous bulb coats) (Jernstedt 2003). In his original description, Hoover stated that the pedicels are less than one-quarter the length of the perianth in *C. grandiflorum* but one-third or more the length of the perianth in *C. pomeridianum* (Hoover 1938). This species has been included in the *CNPS Rare Plant Inventory* since 1974 as a CRPR 1B.2 plant (CNPS 2025). In 2017, this species was nominated for a downranking from CRPR 1B.2 (rare and threatened in California and elsewhere) to 4.2 (plants of limited distribution, a watch list), and that downranking is being evaluated in this document.

Ecology

This species was originally described from the serpentine soils of Tuolumne County (Hoover 1938). It is now known from other shallow, rocky soils, including gabbro, schist, and shale (CNDDB 2025). It is widespread on the northern half of the El Dorado National Forest where it is often found growing in disturbed areas on a variety of soil types (Brown 2025 pers. comm.). It has been observed along lightly used dirt roads and trails and can persist in compressed soil (Perry 2025 pers. comm.). In general, those familiar with this species think of it as preferring to be in the open, without a canopy, but it was observed growing and blooming in the semi-shade of burned conifer forest after the 2014 King Fire (Perry 2025 pers. comm.). Numerous healthy, flowering populations were observed after the 2014 King Fire both on both National Forest and private lands, and it has also responded well after fires in 2020 in the area near Pine Hill Preserve (Ayres 2025 pers. comm., Brown 2025 pers. comm., CNDDB 2025).

Distribution and Abundance

This species is known from Amador, Calaveras, El Dorado, Placer, and Tuolumne (CNDDB 2025). As a CRPR 1B.2 plant, *C. grandiflorum* is mapped at the occurrence level in the CNDDB (2025). The CNDDB contains 137 Element Occurrences (EOs) for *C. grandiflorum* (CNDDB 2025). It was last updated in that system in 2018, and since that time 125 field survey forms have been received (CNDDB 2025). In order to analyze the current distribution of this plant, we included the following data sources: the 137 CNDDB EOs, the 125 unprocessed field survey forms, and online records from the CCH2 (2025) and Calflora (2025) databases with observation

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dates after 2018. The final dataset included 276 records which were grouped into 162 estimated occurrences using the methods outlined in Green and Sims (2018). Using criteria used by the CNDDB, estimated occurrences are separated by at least 0.25-mile (0.4 km).

Based on aerial imagery and data submitted, seven of the CNDDB EOs (#s 19, 20, 22, 32, 33, 34, 46) have been partially extirpated due to development, and it is likely that three, CNDDB EO #s 29, 57, and 64, are fully extirpated; this leaves 159 presumed extant estimated occurrences. In addition, there are two CNDDB EOs (#s 28 and 121) with uncertain identifications that may not be this species. Therefore, there are a total of 157 presumed extant estimated occurrences with a certain identification. Of the 157 estimated occurrences, 31 are historical (not seen in the past 20 years) and 126 are recent.

Many of the estimated occurrences are on lands of mixed ownership/management, and so the following accounting is not additive. Forty-four of the 157 occurrences are located at least partially on timberlands owned by Sierra Pacific Industries, 25 are located at least partially on lands managed by BLM, 59 are located at least partially on the El Dorado NF, three are located at least partially on the Tahoe NF, seven are on US Bureau of Reclamation lands, two are located partially on lands managed by CA Dept. Fish and Wildlife, two are on lands managed in part or fully by the CA Dept. of Parks and Recreation, one is on lands managed partially by the CA Dept. of Forestry, and 20 are on private lands or lands of unknown ownership (CNDDB 2025, Calflora 2025, CCH2 2025).

Of the 157 presumed extant estimated occurrences, 92 have site quality rankings either in the CNDDB or on recent survey forms: 12 are rated A-Excellent (all recent), 46 are rated B-Good (with 39 recent), 29 are rated C-Fair (with 26 recent), and 5 are rated D-Poor (with 4 recent) (CNDDB 2025). The other extant CNDDB EOs have a ranking of Unknown. However, two of the EOs with a CNDDB ranking of Unknown have had recent data submitted that indicate that those sites would likely be ranked B-Good in the future.

Census data are available for 133 occurrences: 64 have between one and 99 plants, 41 with 100 to 499, 12 with 500 to 999, 10 with 1000 to 4999, two with 5000 to 9999, and four recent EOs have over 10,000 plants. Two CNDDB EOs (#s 85 and 108) have very large populations of 85,000 and 46,000 plants. The estimated total for the number of plants that was last censused for all EOs is 202,079. More accurate numbers cannot be known without field work, because in many cases, populations were counted prior to a timber sale or before a property was subdivided. Due to this uncertainty, most presumed extant occurrences do not have enough data to judge if the population is stable. However, within the boundaries of Pine Hill Preserve in El Dorado County, this species is doing well in most locations with tens to hundreds of individuals (Ayres 2025 pers. comm., Meyer 2025 pers. comm.).

Status and Threats

Chlorogalum grandiflorum was last reviewed by NatureServe in 2020 and was ranked G3 / S3. At that time, the total number of individuals was calculated to be between 10,000 and 100,000

(NatureServe 2025) which is a much smaller count than reported here (202,079 individuals). However, as mentioned above, population numbers reported to the CNDDB are often for pre-disturbance surveys, and sites need to be revisited post-disturbance to get an accurate idea of how the species is doing.

Threats reported to the CNDDB include timberland activities, maintenance of powerline rights-of-way (including the use of herbicide), proposed fire breaks, road/trail construction and maintenance, urban development, OHV use, grazing, competition with non-native species, recreation, and illegal dumping (CNDDB 2025). These threats are listed for both historical and recent occurrences. However, observers have noted that this species appears to benefit from some level of disturbance, including canopy removal, and does well along trails (CNDDB 2025, Brown 2025 pers. comm., Perry 2025 pers. comm.). In addition, data submitted to the CNDDB shows this species increasing in numbers over time at some of the sites managed for timber harvest (CNDDB 2025).

In the vicinity of the towns of Rescue, Shingle Springs, and Cameron Park in El Dorado County, the species is confined to vacant lots, preserves, and public lands surrounded by developed parcels; urban development in this area is responsible for most of the partially or fully extirpated occurrences (CNDDB 2025). The establishment of Pine Hill Preserve and its associated parcels of public and private lands have helped preserve this species within that region. However, threats due to development remain high in the areas surrounding Pine Hill Preserve.

Summary
Although rankings are based on many different factors, in general CRPR 1B taxa have 50 or fewer recent EOs, whereas CRPR 4 taxa have more than 50 recent EOs with site rankings of Excellent or Good. *Chlorogalum grandiflorum* has 157 presumed extant, recent estimated occurrences; fifty-one of those recent occurrences have Excellent or Good site rankings. In addition, this species has been observed to benefit from some of the soil disturbance, fire, and canopy removal to which it is exposed. Therefore, with all factors taken into consideration, we propose changing this species from CRPR 1B.2 to 4.2 in the CNPS Inventory. If knowledge of the distribution, abundance, or threats to *C. grandiflorum* changes in future, we may re-evaluate its status at that time.

Recommended Actions
CNPS: Change *Chlorogalum grandiflorum* from CRPR 1B.2 to 4.2
CNDDB: Retain *Chlorogalum grandiflorum* at G3 / S3

Draft CNPS Inventory Record (Changes to the original record are in green text)
Chlorogalum grandiflorum ~~Hoov.~~ Hoover
Red Hills soaproot
Agavaceae
USDA Plants Symbol: CHGR3
Synonym(s)/Other Name(s): None

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CRPR ~~1B.2~~ 4.2
Counties: Amador (AMA), Calaveras (CAL), El Dorado (ELD), Placer (PLA), Tuolumne (TUO)
States: California
Angels Camp (3812015), Aukum (3812056), Chinese Camp (3712074), Clarksville (3812161), Colfax (3912018), Coloma (3812078), Devil Peak (3812085), Devils Nose (3812044), Dorrington (3812033), Foresthill (3912017), Fort Mountain (3812034), Garden Valley (3812077), Georgetown (3812087), Greek Store (3912015), Greenwood (3812088), Michigan Bluff (3912016), New Melones Dam (3712085), Omo Ranch (3812055), Pilot Hill (3812171), Pine Grove (3812046), Pollock Pines (3812075), Rail Road Flat (3812035), Riverton (3812074), Robbs Peak (3812084), Salt Spring Valley (3812016), Shingle Springs (3812068), Slate Mtn. (3812076), Sonora (3712084), Tunnel Hill (3812086), West Point (3812045)
General Habitat: Chaparral, cismontane woodland, lower montane coniferous forest
Microhabitat details: ~~other soils~~
Microhabitat: Gabbroic, serpentine, schist, shale
Elevation: 245 - 1690 meters, 805 - 5545 feet
Life form: perennial bulbiferous herb
Blooms: (Apr)May-Jun
Notes: ~~Threatened by development, mining, road construction, and vehicles. Possibly threatened by trail maintenance, logging and non-native plants.~~ ~~See *Leaflets of Western Botany* 2(8):128 (1938) for original description.~~ May benefit from light disturbance and reduced tree canopy.
Threats: Threatened by development, mining, road construction, and vehicles. Possibly threatened by trail maintenance, herbicide use, logging and non-native plants.
Selected References:
- Original Description: *Leaflets of Western Botany* 2(8):128 (1938)
- CNPS Status Review: CRPR List Change on 2025-05-XX

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Personal Communications

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Brown, Matthew. 2025. Botanist, El Dorado National Forest. Email about ecology, distribution, and ranking of *Chlorogalum grandiflorum*. Personal communication 24 February 2025.

Meyer, Virginia. 2025. Botanist and expert on the flora of Pine Hill Preserve and Acting Rare Plant Co-Chair for western part of the El Dorado Chapter of CNPS. Email about status of *Chlorogalum grandiflorum* within Pine Hill Preserve. Personal communication 21 February 2025.

Perry, Shellie. 2025. Botanist with expertise on the flora of El Dorado County. Email about the ecology of *Chlorogalum grandiflorum*. Personal communication 22 February 2025.

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