

Changed Red Mountain/Little Red Mountain populations to Rank 1B.2 and changed name to *Silene greenei* subsp. *angustifolia* on 21 November 2021

Rare Plant Status Review: *Silene campanulata* subsp. *campanulata*

Proposed Change from California Rare Plant Rank 4.2, G5T3Q / S3 to 1B.2, G5T1 / S1

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Changes and additions to the original text are in blue font

Background and Taxonomy

Silene campanulata S. Watson is a perennial herb in the Caryophyllaceae, consisting of two subspecies: *S. campanulata* subsp. *campanulata* and *S. campanulata* subsp. *glandulosa* C. Hitchc. & Maguire. Both subspecies are found in northwest California, with subsp. *glandulosa* also found in southwest Oregon (Morton 2005). Both subspecies are included in *The Jepson Manual* (Wilken 1993), *Jepson eFlora* (Hartman et al. 2012) and *Flora of North America* (Morton 2005). Typically, *S. campanulata* subsp. *campanulata* individuals are short-statured (<20 cm tall), narrow-leaved (<10 mm wide), short-haired, scabrid plants with dusty-pink corollas of serpentine substrates. In contrast, *S. campanulata* subsp. *glandulosa* individuals are taller (<40 cm tall), broad-leaved (>10 mm wide), glabrous to long-haired, non-scabrid, often glandular plants with creamy white corollas, and no substrate preference (Morton 2005, Hartman et al. 2012). For additional information, see the CNPS Online Inventory at <https://rareplants.cnps.org/Plants/Details/1127>.

Silene campanulata subsp. *campanulata* was originally considered very endangered, limited only to a few populations in serpentine habitat at Red Mountain in Mendocino County as well as one population in Colusa County (Wilson et al. 2004, CDFW 2020); it was added to CNPS List 1B in 1980 (CNPS 1980) and listed as State Endangered in 1982 (CNPS 2021). Subsequently, there were discoveries of populations with soil preferences and morphological characteristics intermediate between the two subspecies as well as populations identified as subsp. *campanulata* in Shasta, Trinity, and Tehama counties (Wilson et al. 2004, CNPS 2000). Due to the increase in number of populations of subsp. *campanulata*, and the need for taxonomic work to better understand how to separate the two subspecies, subsp. *campanulata* was downlisted to CNPS List 4 in 2001 (CNPS 2001). However, subsp. *campanulata* has continued to be listed as State Endangered (CDFW 2020, CNPS 2021).

Isozyme research on *Silene campanulata* ~~now~~ indicates that the only populations that should be considered pure subsp. *campanulata* are located at Red Mountain in Mendocino County (Wilson et al. 2004); these populations, as well as adjacent populations on Little Red Mountain are the only estimated occurrences of subsp. *campanulata* currently tracked by the CNDDB (2021). Nearly pure subsp. *glandulosa* was found to be present in some populations in Humboldt and Del Norte counties. Many of the other sampled California populations of *Silene campanulata* have both subspecies present or have plants that are genetically intermediate between the two subspecies (Wilson et al. 2004). It is the opinion of Wilson et al. (2004) that *S. campanulata* is at the beginning of the subspeciation process.

A recent paper by Rabeler and Gandhi (2021) renames *Silene campanulata* S. Watson to *Silene greenei* (S. Watson) Howell, because the name *S. campanulata* S. Watson is illegitimate. The new name for *S. campanulata* subsp. *campanulata* is *S. greenei* subsp. *angustifolia* (F. N. Williams) Rabeler & Gandhi. The type specimen of subspecies *angustifolia* is from Red

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Mountain. Therefore, in addition to re-ranking the Red Mountain/Little Red Mountain populations, a name change for this taxon is necessary.

Ecology

The populations of *Silene campanulata* subsp. *campanulata* at Red Mountain and Little Red Mountain in Mendocino County occur on ultramafic (serpentinite) and peridotite soils in chaparral and lower montane coniferous forest from 780 to 1195 meters (2560 to 3920 feet) (CNDDDB 2021). Associates include: *Pinus lambertiana*, *P. attenuata*, *P. jeffreyi*, *P. ponderosa*, *Quercus chrysolepis*, *Q. vacciniifolia*, *Lithocarpus densiflorus*, *Arctostaphylos* spp., *Ceanothus* spp., and *Allium falcifolium* (CNDDDB 2021).

Distribution and Abundance

Wilson et al. (2004) indicate that the only pure populations of *S. campanulata* subsp. *campanulata* are located at Red Mountain in Mendocino County; therefore, only populations of *S. campanulata* subsp. *campanulata* in that region are (and will be) tracked by the CNDDDB. Currently, *S. campanulata* subsp. *campanulata* is known from eight estimated occurrences on Red Mountain and adjacent Little Red Mountain, all of which are in the CNDDDB (last updated in November 2020) (CNDDDB 2021). Seven of the eight estimated occurrences are recent (observed in the past 20 years), and only one is historical. All eight occurrences are at least partially on public lands (Bureau of Land Management and CA Department of Fish and Wildlife). Fewer than 1000 plants have been observed in three occurrences on Little Red Mountain, and approximately 1500 plants have been observed in five occurrences on Red Mountain (CNDDDB 2021).

Status and Threats

Silene campanulata subsp. *campanulata* is listed as Endangered by the state of California and Sensitive by the Bureau of Land Management, but it currently has a California Rare Plant Rank of 4.2 (CNPS 2021). Upranking subspecies *campanulata* to 1B.2 would align the CNPS ranking with the current tracking of the CNDDDB and the California State listing status. Wilson et al. (2004) recommend better protecting the Red Mountain populations of *Silene campanulata* to maintain the existing capacity of the species to respond to habitat change. The populations in the vicinity of Red Mountain are the only ones that contain a high percent of individuals that can be assigned genetically and morphologically to subspecies *campanulata*. Protecting these populations would preserve populations with narrow, eglandular leaves that only occur on ultramafic soils (and thus their possibly unique rare alleles) (Wilson et al. 2004, Wilson 2013 pers. comm.). Populations in the vicinity of Red Mountain have been threatened by mining in the past (CNPS 2000, CNDDDB 2021).

Summary

Based on the available information, CNPS and CNDDDB recommend changing the Red Mountain and Little Red Mountain populations of *Silene campanulata* subsp. *campanulata* to California Rare Plant Rank 1B.2 of the CNPS Inventory. In addition, the name of *S. campanulata* subsp. *campanulata* will change to *Silene greenei* (S. Watson) Howell subsp. *angustifolia* (F. N. Williams) Rabeler & Gandhi. If knowledge on the distribution, threats, and rarity status of *Silene*

Silene campanulata subsp. *campanulata*

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~~*campanulata* subsp. *campanulata*~~ this taxon changes in the future, we will re-evaluate its status at that time.

Recommended Actions

CNPS: Change Red Mountain/Little Red Mountain populations of *Silene campanulata* subsp. *campanulata* from CRPR 4.2 to 1B.2 and change name to *S. greenei* (S. Watson) Howell subsp. *angustifolia* (F. N. Williams) Rabeler & Gandhi.

CNDDDB: Change *Silene campanulata* subsp. *campanulata* to G5T3Q / S3 to G5T1 / S1

Draft CNPS Inventory Record (Changes to the original record are in green text)

Silene greenei (S. Watson) Howell subsp. *angustifolia* (F. N. Williams) Rabeler & Gandhi

Red Mountain catchfly

Caryophyllaceae

USDA Plants Symbol: SICAC

~~CRPR 4~~ CRPR 1B.2

Mendocino

States: California endemic

Leggett (3912376), Noble Butte (3912386)

Chaparral, lower montane coniferous forest / serpentinite (rocky), **peridotite**; elevation 780-1195 meters.

Perennial herb. Blooms ~~Apr to Jul~~ **May to June**.

Notes: ~~Distinction from ssp. *glandulosa* needs study. Many SHA Co. and TRI Co. plants are genetically and morphologically intermediate.~~ Isozyme research on *S. campanulata* by Wilson et al. (2004) indicates the only pure stands of subsp. *campanulata* are at Red Mtn. and Little Red Mtn., MEN Co. According to the same study, nearly pure subsp. *glandulosa* was found in some populations in HUM and DNT cos.; however, many other CA populations have both subspecies present or have plants that are genetically intermediate between the two.

References:

- Original description: *Proceedings of the American Academy of Arts and Sciences* 10:341-342 (1875);
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