Rare Plant Status Review: *Silene salmonacea*
Proposed Change from California Rare Plant Rank 1B.2, G3 / S3 to 4.3 ~~4.2~~, G3 / S3
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30 April 2025
Changes to the original are in blue text

Background and Taxonomy

Silene salmonacea T.W.Nelson, J.P.Nelson, & S.A.Erwin. is a rhizomatous, perennial herb in the Caryophyllaceae known from the Klamath Ranges of Shasta and Trinity counties in California. As this species was first described in 2006 (Nelson et al. 2006), it is not included in *The Jepson Manual* (Wilken 1993) or *Flora of North America* (Morton 2005), but it is included in the *Jepson eFlora* (Hartman et al. 2022). It has been included in the *CNPS Rare Plant Inventory* since 2006; at the time it was added, it was only known from six occurrences in Trinity County, resulting in a California Rare Plant Rank (CRPR) of 1B (rare in California and elsewhere), a Global Ranking of G1G2, and a State Ranking of S1S2 (Lazar and Bittman 2006, CNPS 2025). It is also listed as a Sensitive species in USDA Forest Service Region 5 (USFS 2013). As a result of additional collections and observations made since 2006, *S. salmonacea* is now understood to be locally common within a regionally restricted area of California. In 2017, this species was nominated for a downranking from CRPR 1B.2 to 4.2 (plants of limited distribution, a watch list), and at that time and in subsequent years it was determined that additional occurrence information was needed to evaluate and substantiate its downranking. We now have sufficient information, and the downranking is being evaluated in this document.

Ecology

"*Silene salmonacea* is an early-flowering perennial of natural or human-caused openings in montane chaparral and forest of the Trinity Ultramafic Sheet geologic feature. It is dependent on periodic disturbance to create bare ground for seedling recruitment. After establishment, it needs to be free of disturbance long enough to reproduce. The above ground plant body disappears soon after seed production at the end of the season" (Kierstead 2025 pers. comm.). It often grows on rocky, ultramafic (serpentine) soil, but it also occurs on other substrates, such as decomposed granite, clay, gabbro or schist, often in soils that are moist in the spring and very dry in the summer (Dean and Holguin 2021, CNDDB 2025). This species has often been observed in open, young pine plantations, on old plantation skid trails, or areas where the soil has been scraped; it is always found in sparse, open vegetation with bare soil, and it may benefit from the sparse vegetation cover typical of serpentine soil; it also can survive light burns (Dean and Holguin 2021, CNDDB 2025).

Distribution and Abundance

As a CRPR 1B.2 plant, *Silene salmonacea* is tracked at the occurrence level in the CNDDB and was last updated in 2018. The CNDDB contains 71 Element Occurrences (EOs) for *S. salmonacea* (CNDDB 2025). In order to obtain a more up to date distribution and number of EOs for *S. salmonacea*, we examined several sources of data: CNDDB unprocessed survey forms, herbarium specimens available in the CCH2 database, and observation data in the

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Calflora database (Calflora 2025, CCH2 2025, CNDDB 2025). An additional 87 obscured observations on iNaturalist were not included in this analysis (iNaturalist 2025). The final dataset included 113 records which were grouped into EOs using the methods outlined in Green and Sims (2018). Using criteria used by the CNDDB, EOs are separated by at least 0.25-mile (0.4 km).

Our analysis indicates that there are 88 EOs in a very restricted geographic region centered around Claire Engel Lake on the eastern edge of Trinity County and just over the border into Shasta County. These are all recent occurrences (observed within the past 20 years). Sixty-one of the EOs are located on commercial timberland owned by Sierra Pacific Industries, 18 are found solely on Forest Service lands, six span Sierra Pacific Industries land and Forest Service land, and three are on private land or land of unknown ownership (Calflora 2025, CCH2 2025, CNDDB 2025). Eight EOs have information in the CNDDB that indicates the occurrence could not be relocated or may have been partially extirpated due to road work, site maintenance, or timber harvest activities (CNDDB 2025). Of the 88 EOs, 61 have site rankings either in the CNDDB or on an unprocessed survey form. Four are rated A-Excellent, one is rated Good to Excellent, 51 are rated B-Good, four are rated C-Fair, and one is rated D-Poor (CNDDB 2025).

Census data are available for 85 occurrences. Two occurrences could not be relocated and have population counts of zero; the other 83 range in population size from 1 to 1,350 plants, with the majority (48 populations) having fewer than 50 plants, 14 populations having between 50 and 99 plants, 19 having between 100 and 1,000 plants, and only one having more than 1,000 plants (Calflora 2025, CNDDB 2025). Population counts and recounts for this species are difficult to evaluate, because the plant is a mat-forming, rhizomatous, perennial herb, and some counts are for “clumps” and others are for “stems.” In addition, recounts of the same occurrence may not include all parts of the populations (CNDDB 2025). We estimate that the total number of plants in the most recent counts for this species is approximately 5,791.

Threats

Silene salmonacea occurs in montane coniferous forest, usually on serpentine, and is often exposed to timber harvest activities, including road and skid trail construction (CNDDB 2025, CNPS 2025). Because of its CRPR 1B status, it has been flagged and considered in timber harvest plans (CNDDB 2025). It has been noted that this plant appears after timber harvest and canopy removal, even though it was not present prior (Dean and Holguin 2021); therefore, all components of timber harvest cannot be considered a threat to this species. Some vegetation clearing or light burns, which allow for seed germination and establishment, may be beneficial (Dean and Holguin 2021). Therefore, short-term timber harvest clearing followed by a period of little to no disturbance may benefit this species (Dean and Holguin 2021, Kierstead 2025 pers. comm.). Conversely, the use of herbicide, bulldozing, or pile burning during the early spring growing season is damaging to adult plants (Dean and Holguin 2021, Kierstead 2025 pers. comm.). Other noted threats include OHV use, recreation, erosion, and roadside clearing by Caltrans (CNDDB 2025); another likely threat is fire-fighting activities including dozer lines and equipment staging.

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Comments from Aubrey Hayes (SPI)
"Multiple follow up surveys have been conducted post-harvest within the past two decades on SPI lands to determine *S. salmonacea* response to SPI's timberland practices and to wildfire, and in that time, our understanding of this species' ecology, recruitment post-disturbance, and growing habits have evolved. This species has been observed exhibiting a positive response to low-moderate severity fire and an array of operational conditions during timber harvest (post-fire salvage, sanitation salvage, and clearcut), including partial protections during timber harvest as well as none. […] The species has also been observed decreasing in numbers within a decade after disturbance where sites increased initially in the number of plants 2-3 yrs. post-harvest activity and have not been disturbed since (EO #23); plants which are persisting at this EO (as of 2020) are mostly near and along the margins of skid trails where there was not too much, but not too little disturbance […]

Regarding the threat rank, it appears contradictory to include activities which create openings and periodic/temporary bare soil conditions for this species as threats in this review when the Ecology and Threats synopsis in it suggest otherwise, and numerous field surveys and observations have shown this to not be the case. These would include the following threats listed in the new Draft CNPS Inventory Record: logging, wood cutting and brush clearing, and road/trail maintenance. Road/trail construction can be left included as a threat for obvious reasons as this entails a much more prolonged and impactful disturbance type and may be detrimental to occurrences which are smaller in number or extent."

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. Based on this analysis, *S. salmonacea* has at least 80 recent EOs, and 56 have site ratings of Excellent or Good. Additionally, the species may benefit from some of the disturbance to which it is exposed. Therefore, with all factors taken into consideration, we propose changing *Silene salmonacea* from CRPR 1B.2 to 4.2 in the CNPS Inventory. If the decrease in protection for this plant causes its distribution or numbers to decline or if the threats to *S. salmonacea* change in the future, we may re-evaluate its status at that time.

Recommended Actions
CNPS: Change *Silene salmonacea* from CRPR 1B.2 to ~~4.2~~ 4.3
CNDDB: Keep *Silene salmonacea* at G3 / S3

Draft CNPS Inventory Record (Changes to the original record are in green text)
Silene salmonacea T.W.Nelson, J.P.Nelson, & S.A.Erwin
Klamath Mountain catchfly
Caryophyllaceae
USDA Plants Symbol: SISA12
Synonym(s)/Other Name(s): None
CRPR ~~1B.2~~ 4.3

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Counties: Shasta, Trinity
States: California
Quad name (code): Carrville (4112216), Covington Mill (4012287), Damnation Peak (4012285), Papoose Creek (4012276), Rush Creek Lakes (4012278), Tangle Blue Lake (4112226), Trinity Center (4012286), Trinity Dam (4012277), Whisky Bill Peak (4112215), Ycatapom Peak (4112217)
General Habitat: Lower montane coniferous forest
Microhabitat: Openings, serpentine (usually)
Elevation: 775~~ – 1345~~ 1380 meters 2545 – ~~4415~~ 4530 feet
Life form: perennial rhizomatous herb
Blooms: Apr-Jul
Notes: ~~Potentially threatened by road maintenance. Possibly threatened by vehicles and logging. See *Madroño* 53(1): 72-76 (2006) for original description.~~ May benefit from occasional mild to intermediate disturbance and canopy removal; high severity and high frequency disturbances may be detrimental.
- Threats: Threatened by logging, road/trail construction and maintenance, wood cutting and brush clearing, mining, erosion/runoff.
Selected References:
- Original Description: *Madroño* 53(1): 72-76 (2006)
~~- CNPS List Addition on 2005-03-07~~ Delete this document which is not for *S. salmonacea*
- CNPS Status Review: CRPR List Addition on 2006-10-31
- CNPS Status Review: CRPR List Change on 2025-04-30
- USFS Potential Species of Conservation Concern Account

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Personal Communications

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