

Added to Rare Plant Rank 1B.1 on July 12, 2011

Rare Plant Status Review: *Brodiaea matsonii*

Proposed New Add to Rank 1B.1, G1 / S1

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Changes made to the original document appear in blue text.

Background

Brodiaea matsonii is a perennial bulbiferous herb in the Themidaceae (genus previously included in Liliaceae) that is endemic to upper Sulphur Creek of Shasta County, California. It was recently described by Robert Preston (2010) and will not be included in *The Jepson Manual, Second Edition*. *Brodiaea matsonii* was discovered by Gary Matson in 1993 and at the time thought to be related to *B. pallida*. It was later found to be morphologically more similar to *B. minor*, but also appears to be closely related to *B. pallida* and *B. nana*. The main morphological difference between *B. matsonii* and *B. minor* is that the former has pink (vs. blue-violet) flowers. Various morphological characters overlap between *B. matsonii* and *B. minor*, however, they appear to be reproductively isolated from each other by a number of factors: they have a difference in chromosome number (*B. matsonii* is diploid, while *B. minor* is polyploidy), have different habitat preferences (*B. matsonii* occurs in ephemeral stream habitat while none of the known populations of *B. minor* occur along streams), have a different flowering phenology (late May and June in *B. matsonii* vs. April and early May in *B. minor*), and are allopatric (see Preston 2010 for a detailed account of differences between *B. matsonii* and other closely related taxa).

Brodiaea matsonii occurs in cracks and crevices of metamorphic rock outcrops that consist of material weathered from amphibolite schist. It grows along banks and on small rocky islands within the channel of upper Sulphur Creek, which traverses through foothill woodland at an approximate elevation of 195 to 215 meters.

Brodiaea matsonii is known only from [approximately two](#) ~~one~~ occurrences consisting of a few hundred individuals scattered along a 1.6 km stretch of upper Sulphur Creek, north of Redding. [A third population occurs along a gravel streambed and in a wet meadow/swale near Rock Creek Road \(Preston pers. comm. 2011\).](#) "The association of *B. matsonii* with ephemeral stream habitat is very rare within *Brodiaea*" (Preston 2010).

[Brodiaea matsonii](#) was possibly threatened by development in the past. It is potentially threatened by [powerline inspection and maintenance, foot traffic, and horticultural collecting.](#) ~~Threats to B. matsonii are unknown, however.~~ [With these potential threats](#) and only one known occurrence, it should be considered of conservation concern.

Recommended Actions

CNPS: Add to CNPS 1B.1

CNDDDB: Add to CNDDDB G1 / S1

Please review the draft CNPS Inventory record below, respond Yes or No on the proposal to add this species to the Inventory and CNDDDB, and provide any edits/comments. If responding No, please provide supporting information.

Draft CNPS Inventory Record

Brodiaea matsonii R.E. Preston

Sulphur Creek brodiaea

Themidaceae

Rank 1B.1

Shasta

Redding (647C) 4012254

Cismontane woodland ([streambanks](#)), [Meadows and seeps](#)/~~Streambanks~~. Rocky, metamorphic amphibolite schist; elevation 195-215 meters.

Perennial bulbiferous herb. Blooms May-Jun.

Known from [fewer than five](#) ~~only one~~ occurrences in the vicinity of ~~along upper~~ Sulphur

Creek. [Potentially threatened by by powerline maintenance, foot traffic, and horticultural collecting.](#) [Possibly threatened by development.](#) Similar to *B. minor*, *B. nana*, and *B. pallida*. Not in *The Jepson Manual (1993)* and *TJM 2*. See *Madroño*

57(4):261-267 (2010) for original description.