

Added to California Rare Plant Rank 1B.2 on February 8, 2012**Rare Plant Status Review: *Prosartes parvifolia*****Proposed New Add to Rank 1B.2, G2 / S2**

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Changes made to the original document appear in blue text.

Background

Prosartes parvifolia is a bulb-forming herbaceous perennial in the Liliaceae family that is known only from the Siskiyou Mountains in northwestern California and southwestern Oregon. It is included in *The Jepson Manual, Second Edition (TJM 2)*, available online at http://ucjeps.berkeley.edu/cgi-bin/get_IJM.pl?tid=39939, but not in the older *The Jepson Manual* (1993), or the *Flora of North America* (see http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=242101866 for taxonomic treatment). *Prosartes parvifolia* was first described as *P. parvifolium* by Watson (1880), and was subsequently treated as *Disporum parvifolium* by Britton (1888). It was recognized as a unique species in several floras (e.g., Jepson 1909, 1925). Later, it was treated as a probable sterile hybrid between *Disporum hookeri* and *Disporum smithii*, *Disporum X parvifolium*, because “it occurs in an area where these overlap, it is morphologically intermediate between them, and it is sterile” (Jones 1951; see also Munz 1959). However, *P. parvifolia* is not intermediate in characters between *P. hookeri* and *P. smithii*, and while it can produce abortive fruits sometimes, it has been observed producing fruits with viable seeds (Mesler et al. 2010). More recent floras recognized it as a minor variant of *P. hookeri*, not worthy of even infraspecific taxonomic distinction from the species (*TJM* 1993, *FNA*). A taxonomic revision of the genus *Disporum* based on genetic data recently resurrected the generic name *Prosartes*, with *Disporum* now applying specifically to Asian taxa and *Prosartes* applying to North American taxa (Shinwari et al. 1994). Likewise, a recent taxonomic revision of *Prosartes* based on morphological data resurrected *Prosartes parvifolia* (Mesler et al. 2010). *Prosartes parvifolia* differs from *P. hookeri* and *P. smithii* (the only two species with overlapping ranges) in that it has glandular hairs (vs. nonglandular hairs or no hairs) on the leaf margins, stems and pedicels; *Prosartes parvifolia* also has shorter filaments, fewer seeds per fruit, and a different location of the style scar. Furthermore, *P. parvifolia* is the only member of the genus that does not produce nectar on its tepals (Mesler et al. 2010). *Prosartes parvifolia* blooms from May to September (Consortium of California Herbaria 2011, Mesler et al. 2010).

Prosartes parvifolia occurs in lower and upper montane coniferous forests, almost exclusively in the Smith River watershed. Occurrences are found in low-disturbance areas, such as shaded forest understories and forest edges, as well as more recently-disturbed sites, such as exposed roadside slopes and areas that have been logged and burned (Mesler et al. 2010). Although it occurs in a variety of habitats, *P. parvifolia* is most productive in sunny, disturbed sites (Mesler et al. 2010). A photo record notes an occurrence of *P. parvifolia* at an undisclosed site with serpentine soil in Del Norte

County (Calphotos 2011), and dwarf specimens of *P. hookeri* from serpentine substrates are morphologically similar to *P. parvifolia* (FNA), but *P. parvifolia* is apparently restricted to non-serpentine soils (Mesler et al. 2010). *Prosartes parvifolia* occurs at an approximate elevation of 700 to 1525 meters in California.

There are currently approximately nine known occurrences of *P. parvifolia* in California, and a similar abundance in Oregon. All of the California occurrences are found in the Six Rivers National Forest, and three of them are historical (occurrences not documented in the last 20 years are considered historical by the CNDDDB). Mesler et al. (2010) estimated the global population of the species to be about 500 individuals, but noted that the estimate is conservative, owing to the large amount of botanically-unexplored terrain in the region. More surveys should be conducted in forests of Del Norte County as well as southwestern Oregon to search for additional occurrences.

Prosartes parvifolia does not yet have any special status in any part of its range (NatureServe 2011, Oregon Biodiversity Information Center 2011), likely owing to its very recent resurrection. However, it should be protected throughout its range, owing to its rarity and narrow global distribution.

Construction of logging roads and logging activities could potentially threaten some of the populations of *P. parvifolia*, although it may also benefit from disturbance; more studies should be conducted to analyze the effect of these activities on populations. Small population sizes may also threaten *P. parvifolia*, either through pollen deficits or genetic drift. However, isolated individuals have been observed with heavy fruit crops (Mesler et al. 2010). *Prosartes parvifolia* may have been historically rare, as evidenced by the paucity of early collections. Its relatively low seed production, perhaps a result of its lack of nectar reward, may contribute to its rarity.

Based on the available information, CNPS and CNDDDB recommend that *Prosartes parvifolia* be added to California Rare Plant Rank 1B.2. If current records in California are later found to be an under-representation of its actual distribution and frequency, it will be re-evaluated at that time.

Recommended Actions

CNPS: Add to CNPS 1B.2

CNDDDB: Add to CNDDDB G2 / S2

Draft CNPS Inventory Record

Prosartes parvifolia S. Watson

Siskiyou bells

Liliaceae

Rank 1B.2

Del Norte

Oregon

Broken Rib Mtn. (738B) 4112386, Devils Punchbowl (738C) 4112376, Gasquet (739C) 4112378, High Divide (740A) 4112481, Hurdygurdy Butte (739D) 4112377, Shelly Creek Ridge (739A) 4112387

Lower montane coniferous forest, upper montane coniferous forest / often roadsides, disturbed areas, and burned areas; 700 to 1525 meters.

Perennial bulbiferous herb. Blooms May to September.

Known in CA only from in and around the Smith River watershed in the Siskiyou Mtns.

Possibly threatened by logging and associated road usage, [and road maintenance](#).

Similar to *P. hookeri* and *P. smithii*; treated as a minor variant of the former in *The Jepson Manual* (1993). See *Botany of California* 2:179 (1880) for original description, and *Bulletin of the Torrey Botanical Club* 15:188 (1888), *Taxon* 43(3):353-366 (1994), and *Madroño* 57(2):129-135 (2010) for taxonomic treatments.