Added to CNPS Inventory on July 10, 2012

Rare Plant Status Review: *Sidalcea gigantea*
Proposed New Add to Rank 4.3, G3 / S3

Danny Slakey (CNPS), Aaron Sims (CNPS) and Roxanne Bittman (CNDDB)
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Changes made to the original document appear in blue text.

Background

Sidalcea gigantea is a perennial rhizomatous herb in the Malvaceae family that is endemic to the northern Sierra Nevada and Cascade Mountains of California. It was only recently described by Clifton et al. in 2009. It is included in *The Jepson Manual, Second Edition* (*TJM 2*; available online at http://ucjeps.berkeley.edu/cgi-bin/get_IJM.pl?tid=91699); the *Flora of North America* treatment for Malvaceae is not yet available. *Sidalcea gigantea* is distinguished from other *Sidalcea* taxa by its long, thick rhizomes (up to 60 cm x 1 cm diameter); stem bases with long, retrorse bristly hairs; thick hollow stems (to 1.4 cm in diameter); fruit segments that are nearly equally 3-sided; and a taller habit than other *Sidalcea* taxa (to 2 m or sometimes 2.5 m; Clifton et al. 2009, *TJM 2*). These characters can sometimes overlap with other taxa, but not in combination with each other (Clifton et al. 2009). *Sidalcea gigantea* is often confused with *Sidalcea celata* and *Sidalcea asprella*, but the confusion is generally over herbarium specimens and not plants in the field (*TJM 2*, S. Hill pers. comm. 2012). Before *S. gigantea* was described, Schlising (1987) treated specimens of *S. gigantea* as *S. malviflora* ssp. *celata* (a synonym of *S. celata*). The range of *S. gigantea* does not overlap with *S. celata*, which occurs in the inner North Coast Ranges and northern Central Valley, but it does overlap with *S. asprella* ssp. *asprella*, which occurs in the northern and central High Sierra Nevada. However, *S. gigantea* and *S. asprella* ssp. *asprella* differ in their habitat preferences (wetter for *S. gigantea*), elevation (lower in *S. asprella*) and flowering times (earlier in *S. asprella*; S. Hill pers. comm. 2012). Andreasen and Baldwin (2003a, b) studied the DNA of all three of these taxa using internal and external transcribed spacers (ITS and ETS), and found that *S. gigantea* grouped with *S. asprella* in a well-supported "*asprella*" clade. Andreasen noted that there were essentially no differences in the genetic sequences of a "*celata*" group (Clifton et al. 2009). The lack of differences in the genetic code may be due to a failure to identify the loci at which these taxa differ (R. Buck pers. comm. 2012), hybridization, or incomplete lineage sorting (Andreasen and Baldwin 2003b). *Sidalcea gigantea* blooms from July to October.

Sidalcea gigantea occurs in lower and upper montane coniferous forests, usually in moist areas, such as in meadows or at the edges of wet meadows, along creeks, or at seeps and springs. It is found from 670 meters up to as high as 1950 meters in elevation (Consortium of California Herbaria (CCH) 2012; Clifton et al. 2009).

There are currently ~~about 34~~ over 38 known occurrences of *S. gigantea*, extending from Yuba, Nevada and Sierra counties north to Tehama, Butte, Plumas, and Shasta counties (CCH 2012, K. Callahan pers. comm. 2012, D. Lepley pers. comm. 2012). It

has not been collected in Tehama County, roughly in the center of its range, but this is perhaps due to a lack of botanical exploration in some remote, rugged portions of this county (Clifton et al. 2009). The majority of known populations occur on U.S. Forest Service lands, in the Lassen, Plumas, and Shasta-Trinity National Forests. Only seven of the known occurrences are historical (occurrences not documented in the last 20 years are considered historical by the CNDDB). Areas of potential habitat in Tehama County should be surveyed in order to determine if this species is present there.

Relatively little is known about the possible threats to *S. gigantea*. Populations have been observed to increase following fires (Clifton et al. 2009), so fire suppression could potentially threaten the species. It probably does not benefit from most anthropogenic disturbances, as most of the known occurrences are found in undisturbed sites, with the exception of a few populations on roadsides (Clifton et al. 2009). Occurrences of *S. gigantea* on Lassen National Forest are potentially threatened by water transport activities, but this is likely a speculative rather than imminent threat (D. Lepley pers. comm. 2012). Several populations have been discovered at the intersections of roads and drainages, which could possibly be threatened by logging operations and road building/maintenance. However, there appears to be no imminent threats to *Sidalcea gigantea* at this time.

Based on the available information, CNPS and CNDDB recommend that *Sidalcea gigantea* be added to California Rare Plant Rank 4.3. If more information regarding threats, population sizes, and/or the range and distribution of *S. gigantea* becomes available in the future, it will be re-evaluated at that time.

Recommended Actions
CNPS: Add to CNPS 4.3
CNDDB: Add to CNDDB G3 / S3

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

Draft CNPS Inventory Record
Sidalcea gigantea G.L. Clifton, R.E. Buck & S.R. Hill.
giant checkerbloom
Malvaceae
Rank 4.3
Butte, Nevada, Plumas, Shasta, Sierra, Tehama, Yuba
American House (574A) 3912161, Burney (662B) 4012186, Cascade (574B) 3912162, Grass Valley (542A) 3912121, Goodyears Bar (573C) 3912058, Grays Peak (626B) 4012146, Haskins Valley (590C) 3912172, Hatchet Mountain Pass (663D) 4012177, Kimshew Point (591B) 3912184, Lassen Peak (62A) 4012145, Mineral (626D) 4012135, North Bloomfield (557C) 3912038, Paradise East (592D) 3912175, Pulga (591C) 3912174, Soapstone Hill (591D) 3912173, Stirling City (592A) 3912185, Storrie (591A) 3912183), Strawberry Valley (574D) 3912151, Viola (644C) 4012156

Sent to: SN, NW, K. Andreasen, B. Baldwin, S. Hill, R. Buck on 5/25/2012

Lower montane coniferous forest, upper montane coniferous forest / meadows and seeps; elevation 670 – 1950 meters.
Perennial rhizomatous herb. Blooms July to October.
Potentially threatened by fire suppression. Possibly threatened by logging, road construction, and road maintenance. Similar to *S. asprella* and *S. celata.* See *American Journal of Botany* 90(3):436-444 (2003) and *Molecular Phylogenetics and Evolution* 29:563-581 (2003) for taxonomic treatments, and *Madroño* 56(4):285-292 (2009) for original description.