Added to California Rare Plant Rank 1B.2 of the CNPS Inventory on 9 December 2020

Rare Plant Status Review: *Streptanthus juneae*
Proposed Addition to California Rare Plant Rank 1B.2, G1 / S1
Aaron E. Sims (CNPS), Jonathon Holguin (CNPS), and Katie Ferguson (CNDDB)
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Background and Taxonomy

Streptanthus juneae N.Jensen is a perennial herb in Brassicaceae known only from the foothills of the San Bernardino Mountains, San Bernardino County. It is not included in *The Jepson Manual* (Al-Shehbaz 1993), *Jepson eFlora* (Al-Shehbaz 2012) or *Flora of North America* (Al-Shehbaz 2005). Jensen (2020) described *S. juneae* and *S. medeirosii*, another rare plant concurrently being reviewed for addition to the CNPS Inventory, based on phylogenetic, morphological, geographical, and ecological evidence, utilizing a species concept consistent with Quieroz (2007) and Freudenstein et al. (2016). Both species are included in the Southern Howellii Clade of *Streptanthus*, a subset of the Howellii Alliance as first characterized by Cacho et al. in 2014. The two previously described species of the Southern Howellii Alliance are *S. bernardinus* (4.3) and *S. campestris* (1B.3). *Streptanthus juneae* is differentiated from these perennial *Streptanthus* species in nearby localities as follows: *S. juneae* has distally dark purple petals (as opposed to white or cream colored, rarely yellow to light orange apically in *S. bernardinus*), sepals that are tinged purple to pink, particularly in age, and scarcely inflated at their base to tubular in shape (as opposed to white to green calyces in *S. bernardinus*, highly inflated at their base); *S. juneae*, at 22-56 cm in height, is typically much smaller than *S. campestris*, which often exceeds one meter in height, *S. juneae* is lacking clusters of sterile flowers, with its fertile flowers having uniformly dark purple calyces (as opposed to *S. campestris* which has clusters of sterile flowers at the base of inflorescences, and clusters of fertile flowers, with dark purple calyces, at the apices of each inflorescence). *Streptanthus juneae* may also be differentiated from *S. campestris* by its small, coriaceous leaves as opposed to the large, and often papery-when-dry leaves of *Streptanthus campestris*. *Streptanthus* comes from Greek meaning "twisted flower." The specific epithet *juneae* is a Latinization of the author's grandmother's name, June Jensen, and the species can be observed in full flower in the month of June (Jensen 2020).

Ecology

Streptanthus juneae is found between 2,155 to 2,370 meters in elevation (Google LLC 2020 via Jensen 2020 and Jensen, N. pers. comm. 2020), typically on moderate slopes of varying aspects to flat areas, in the understory of open forested areas dominated by *Pinus jeffreyi*, *Abies concolor*, and *Quercus kelloggii*. A single occurrence at Clark's Grade (record 4) is within openings of montane chaparral dominated by *Ceanothus cordulatus* resulting from recent logging activity. Plants flower from early June into late August. "Fruit set begins in late June and continues into September, with fruits dehiscing in late September" (Jensen 2020). Its flowers have been observed to be frequently visited by native bees, particularly *Osmia* sp. (Megachilidae). Associated species include: *Bromus tectorum*, *Elymus glaucus*, *E. elymoides*, *Ericameria nauseosa*, *Eriogonum* spp., *Gayophytum diffusum* subsp. *parviflorum*, *Penstemon grinnellii*, *P. rostriflorus*, and *Poa secunda* (Jensen 2020).

Distribution and Abundance

Streptanthus juneae is known from only five occurrences, all in San Bernardino National Forest within the San Bernardino Mountains. All but one of the five occurrences were documented by Jensen in 2015 and 2017, and are therefore considered recent. The single historical occurrence is based on two collections from "San Bernardino Peak trail from Glen Martin to Mt. San Bernardino" (*Feudge 1107* from 1925, and *Howe s.n.* from 1953). The total known population count of June's jewelflower is estimated to be just over 650 individuals, with its entire distribution spanning a linear extent of approximately 13 km.

Survey efforts by N. Jensen included verifying the identity of reported *Streptanthus* populations within the San Jacinto Mountains, which he determined to be *S. bernardinus*, as well as closely occurring *S. campestris* populations, such as CNDDB EO 31 of *S. campestris*, which was based on a Greenhouse observation from July of 1982. This record has no associated specimen for verification, and no *Streptanthus* spp. were located at this location in the 2014 season by N. Jensen (Jensen 2020).

Status and Threats
According to Jensen (2020), *S. juneae* occurs along roads or hiking trails and is therefore potentially threatened by road maintenance, off-road vehicles, and recreational activities. However, he further indicated that these threats appear to be minimal at this point in time.

Summary
Based on the available information, CNPS and CNDDB recommend adding *Streptanthus juneae* to California Rare Plant Rank 1B.2 of the CNPS Inventory. If knowledge on the distribution, threats, and rarity status of *S. juneae* changes in the future, we will re-evaluate its status at that time.

Recommended Actions
CNPS: Add *Streptanthus juneae* to CRPR 1B.2
CNDDB: Add *Streptanthus juneae* to G1 / S1

Draft CNPS Inventory Record
Streptanthus juneae Jensen
June's jewelflower
Brassicaceae
CRPR 1B.2
San Bernardino
California
Big Bear Lake (105B) 3411628
Lower montane coniferous forest, chaparral (montane) / openings; elevation 2,155 to 2,370 meters.
Perennial herb. Blooms June to August.
Potentially threatened by road maintenance, vehicles, and recreational activities. Previously identified as *S. campestris*; differentiated in lacking uniformly dark purple sepals (vs. uniformly dark purple sepals), lack of dense cluster of fertile flowers at apex of inflorescence (vs. dense cluster), less than 0.5 m tall (vs. often taller than 1 m), leaves appearing thick, coriaceous (vs. leaves appearing thin), basal leaf petioles without ciliate margins (vs. often with ciliate margins), and endemic to San Bernardino Mtns. (vs. southeastern foothills of the San Bernardino Mtns.

south to Baja CA, Mexico in *S. campestris*). See *Madroño* 67(1):19-34 (2020) for original description.

Literature Cited

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Personal Communications

Jensen, Nick. 2020. Lead Conservation Scientist, California Native Plant Society. Email and phone correspondence regarding locations of S. juneae. 25 September 2020.