

Added to California Rare Plant Rank 1B.2 of the CNPS Inventory on June 14, 2019

**Rare Plant Status Review: *Navarretia miwukensis*
Proposed Addition to California Rare Plant Rank 1B.2, G1G2 / S1S2**

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Changes made to the original document are in blue text.

Background and Taxonomy

Navarretia miwukensis D.Gowen & L.A.Johnson is a taprooted annual herb in the Polemoniaceae that is endemic to the western slope of Sierra Nevada in Calaveras and Tuolumne counties. *Navarretia miwukensis* is “[a] species similar to *Navarretia crystallina*, but distinguished by being less dense with respect to inflorescence trichomes but bearing more conspicuous viscid, short-stipitate glands in the inflorescence, in having bract and calyx lobes with wide, convex bases that taper concavely (i.e., acuminate) versus evenly tapered, long-acute lobes in *N. crystallina*, and in having greater inequality in the insertion of stamens.” (Johnson et al. 2016). The specific epithet means ‘from Miwuk’, in reference to Mi Wuk village, a community within the range of this species, and named to honor the Me-Wuk indigenous people that have inhabited this region for centuries (Johnson et al. 2016). Please see “Plant Description” section of the attached sponsorship form by Hannah Kang (2019) as well as Johnson et al. (2016) for additional background and taxonomy information on this species.

Ecology

“*Navarretia miwukensis* occurs in open, sparsely vegetated pyroclastic derived soils often on gently sloping terrain” ... “at elevations from 800–1480 meters, and blooms primarily May–June (July).” (Johnson et al. 2016). *Navarretia miwukensis* has an approximate elevation of 800 ~~1,100~~ to 1,500 meters based on occurrence records reviewed in Google Earth (Google LLC 2019) [and the species protologue \(Johnson et al. 2016\)](#). It is known lower montane coniferous forest (Kang 2019).

Distribution and Abundance

Navarretia miwukensis is known from 10 ~~six~~ occurrences based on 18 ~~14 collection~~ records. All but one of its occurrences are considered recent, having been documented within the past 20 years. The single historical occurrence is reported from Twain Harte Post Office from 1944 (Alexander and Kellogg 3622, UC702278; Johnston et al. 2016, Consortium of California Herbaria 2019). This occurrence is [presumed possibly extirpated: the Twain Harte Post Office was at a different location than the current post office and replaced by a golf course which is now defunct \(M. Willits pers. comm. 2019\)](#), ~~however, some degraded habitat appears to exist within the vicinity of the post office (Google LLC 2019), and it is unknown whether the post office in 1944 is in the same location as it is today; surveys should be conducted in this area prior to ruling out extantness.~~ [Five](#) ~~One~~ occurrences [are](#) is known from Stanislaus National Forest, and [record #2 is on BLM land \(D. Taylor pers. comm. 2019\)](#); all other records have an unknown landownership. The occurrence from Table Mountain, Calaveras County (record #2) was reported to be common in 1895, and the record from the post office was also reported as common; no current records indicate population size. Historical records retrieved from the Consortium of California Herbaria (2019) via Johnston et al. (2016) are all identified in the Consortium as *N. divaricata*; other potential records identified as *N. divaricata* within the range

of *N. miwukensis* should therefore be verified as potential additional occurrences. “The most recent floristic survey for the Donnell – Curtis Transmission Line (2010) showed *N. divaricata*, so it may be there in that project” (M. Willits pers. comm. 2019).

Status and Threats

“In addition to a smaller range, more populations of this species are likely at risk to future development than *N. crystallina*” (Johnson et al. 2016). “The known occupied sites are sparsely vegetated and *Navarretia miwukensis* is not prolific at these known sites. Several of the known sites are in proximity to human populations, and one is highly disturbed by ORV impacts. Occurrences near Mi-Wuk Village and Confidence are on private land, and others are on National Forest or Caltrans lands. Presently, none of these sites are under active management.” (Kang 2019).

“[The] habitat [where *N. miwukensis* is known from] is impacted by OHVs, garbage dumping, camping, and invasives such as medusahead, *Erodium* spp., and cheatgrass which can compete with rare plants and carry fire where it would normally not burn easily. The thin soils lead to greater effects from climate change. They may dry more quickly- before seed set occurs. That may be less of a concern for this species which is too low to rely on snow pack. Those sites may also be used for helispots and timber sale landings.” (M. Willits pers. comm. 2019).

Summary

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

Recommended Actions

CNPS: Add *Navarretia miwukensis* to CRPR 1B.2

CNDDDB: Add *Navarretia miwukensis* to G1G2 / S1S2

Draft CNPS Inventory Record

Navarretia miwukensis D.Gowen & L.A.Johnson

Mi-Wuk Calaveras-lava-cap navarretia

Polemoniaceae

CRPR 1B.2

Calaveras, Tuolumne

Ascension Mtn. (456C) 3711978, Duckwall Mtn. (457A) 3712081, Twain Harte (474C)

3812012, Murphys (475B) 3812024, Columbia (475C) 3812014

Lower montane coniferous forest / open, sparsely vegetated pyroclastic flows, often gently sloping terrain; elevation 800 ~~1,100~~ –1,500 meters

Annual herb. Blooms May–June (July)

Previously identified as *N. divaricata*. Threatened by urbanization, and vehicles, illegal dumping, recreational activities, and non-native plants. Potentially threatened by development. Similar to *N. crystallina*; distinguished in having less dense inflorescence trichomes, with more conspicuous viscid, short-stipitate glands, and in having acuminate bracts and calyx lobes with wide, convex bases, versus evenly tapered, long-acute lobes in *N. crystallina*. See *Phytotaxa* 257(3):249-260 (2016) for original description.

Literature Cited

Consortium of California Herbaria. 2019. Data provided by the participants of the Consortium of California Herbaria. Regents of the University of California, Berkeley. Website <http://ucjeps.berkeley.edu/consortium/> [accessed 19 April 2019].

Johnson, L. A., D. Gowen, R. L. Johnson, H. Brabazon, and E. D. Goates. 2016. *Navarretia crystallina* and *N. miwukensis* (Polemoniaceae): new species endemic to California with affinity for soils derived from pyroclastic deposits. *Phytotaxa* 257(3): 249-260.

Google LLC. 2019. Google Earth Pro (Version 7.3.2.5776) [Software]. Available at <https://www.google.com/earth/>.

Kang, H. 2019. CNPS Inventory, New Addition / List Upgrade Data Form: Proposed New Addition of *Navarretia miwukensis* D.Gowen & L.A. Johnson. 15 pp.