

Rare Plant Status Review: *Erythranthe angulosa*
Proposed Addition to California Rare Plant Rank 3, G1Q / S1
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This status review is being expedited through an agreement between the California Native Plant Society and the Center for Plant Conservation (CPC), with contributions from the state of California, CPC, and the California Plant Rescue initiative. Aside from being advanced as part of this agreement, the process, content, and information provided herein is not altered, modified, or developed differently in any way or form compared to other status reviews developed by CNPS.

Background and Taxonomy

Erythranthe angulosa M. Berger, is an annual herb in Phrymaceae that is known only from west-central Inyo County, California. Described in 2020, it is not included in *The Jepson Manual* (Thompson 1993), the *Jepson eFlora* (Fraga 2018), or *Flora of North America North of Mexico* (Nesom and Fraga 2019). It was first collected in 2020 (*Berger s.n.*, RSA) (Nesom and Berger 2020).

It is similar to *Erythranthe nasuta* “but distinct in its habit appressed against cliff faces, swollen axillary organs (at bases of stem and peduncles) that perhaps are extrafloral nectaries, completely glabrous stems, pedicels, and calyces, smaller calyces without a protruding upper lobe, and calyx lobes rolled nearly into cylinders.” (Berger and Nesom 2020). There are no records of *E. nasuta* in Inyo County (Calflora 2022, CCH2 2022). The axillary organs may be extrafloral nectaries and probably function to attract ants for defense from herbivores or seed predators. Herbivory is unusual in *Erythranthe* species, but fruit predation was observed on *E. angulosa* (Nesom and Berger 2020).

Erythranthe angulosa is in “*Erythranthe* section Simiola, a taxonomically complex section with poorly understood species boundaries (Fraga pers. comm. 2022). Herbarium records have not been examined for this species (Nesom pers. comm. 2022). Searches for additional populations will be done later this year (Berger pers. comm. 2022, Fraga pers. comm. 2022), but currently this species is only known from its type locality. More data, including molecular studies, a search of herbarium records and more field work are probably needed before *E. angulosa* can be considered for addition in the *Jepson eFlora* (Fraga pers. comm. 2022).

The epithet *angulosa* describes an object with angles, presumably describing the four-angled stem on this species.

Ecology

Erythranthe angulosa was found growing “from crevices and ledges of vertical granite” (Berger pers. comm. 2022). *Erythranthe angulosa* was mostly in fruit in July of 2020, and probably flowers June-July. It was found at an elevation of 9580 feet (Nesom and Berger 2020, Berger pers. comm. 2022). Species associates include: *Ivesia saxosa*, *Artemisia tridentata*, *Eriogonum latens*, *Eriogonum parishii*, *Orochaenactis thysanocarpha*, *Ericameria parryi* and *Eriogonum wrightii* var. *subscaposum* (Berger pers. comm. 2022).

Distribution and Abundance

Erythranthe angulosa is endemic to Inyo County in the east of the Sierra Nevada (SNE) bioregion. It is currently known from only one recent occurrence (the type collection) on Inyo National Forest land near Horseshoe Meadow Road, 2.5 miles from Last Chance Meadow Research Natural Area. This location is surrounded by the Golden Trout Wilderness. The population consists of 10 individuals (Nesom and Berger 2020, Berger pers. comm. 2022). This area is relatively well botanized (CCH2 2022).

Status and Threats

Erythranthe angulosa is found near a road, but it grows “in an obscure area ... from cliff faces and ledges.” Rock climbing activities could potentially be a threat, but the area is rarely visited (Berger pers. comm. 2022).

Summary

Due to the paucity of data on this species, CNPS and CNDDDB recommend adding *E. angulosa* to CRPR 3 of the CNPS Inventory. The G1Q global rank is recommended, because further investigation of this species may lead to a change in its classification. If knowledge on the distribution, threats, and rarity status of *E. angulosa* changes in the future, we will re-evaluate its status at that time.

Recommended Actions

CNPS: Add *Erythranthe angulosa* to CRPR 3

CNDDDB: Add *Erythranthe angulosa* to G1Q / S1

Draft CNPS Inventory Record

Erythranthe angulosa M. Berger

sweet-stem monkeyflower

Phrymaceae

USDA Plants Symbol: not available

Synonyms: none

CRPR 3

Counties: Inyo

Cirque Peak 3611842

General habitat: Great Basin scrub

Microhabitat: Rocky, granitic

Elevation: 2920 m

Life form: Annual herb

Blooming time: June to July.

Threats: potentially threatened by recreational activities

Taxonomy: Similar to *Erythranthe nasuta* but differing in having smaller flowers, having swollen, nectar producing axillary organs at the bases of stems and peduncles, and growing appressed to granitic cliff faces.

References:

- Original description: *Phytoneuron* 77: 1–25 (2020).

Literature Cited

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