

Rare Plant Status Review: *Sedum rubiginosum*
Proposed Addition to California Rare Plant Rank 1B.2, G1 / S1
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This species review is being expedited through a challenge cost share agreement between the California Native Plant Society and the USDA Forest Service, Pacific Southwest Region. 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

Sedum rubiginosum Zika & B. L. Wilson is a perennial herb in the Crassulaceae endemic to California and known only from the regions near Tedoc Mountain and Little Red Mountain in the Klamath Ranges bioregion of northwestern Tehama County (Zika et al. 2018). It is not included in *The Jepson Manual* (Denton 1993), *Jepson eFlora* (Boyd and Denton 2012) or *Flora of North America* (Ohba 2009). In their recent paper on *Sedum* section *Gormaniana* of western North America, the members of the Carex Working Group examined populations belonging to section *Gormaniana* and redefined species limits (Zika et al. 2018). Two population aggregates in northwestern Tehama County were described as a new species, *Sedum rubiginosum* (Zika et al. 2018).

In their work on *Sedum*, both Denton and the Carex Working Group emphasized visiting populations in the field and the study of living material (Denton 1982, Zika et al. 2018). The characters that separate *Sedum* species, such as corolla color, petal orientation, inflorescence orientation, and leaf color, shape, and orientation, are best seen in fresh material, and many herbarium collections are difficult to identify (Zika et al. 2018). *Sedum rubiginosum* can be separated from the other members of section *Gormaniana* by its combination of the following characters: usually dense rosettes with oblanceolate leaves with cuneate bases and obtuse tips; relatively densely overlapping stem leaves; narrow, dense, cylindrical or ellipsoidal, panicle-like inflorescences with up to 152 flowers; corollas with yellow, strongly spreading petals that have reddish or pinkish markings at the base; and red anthers (Zika et al. 2018). It is most similar to *S. kiersteadiae*, a species of the Klamath and Cascade Ranges that has loose rosettes with internodes easily visible, relatively loosely overlapping stem leaves, and less dense inflorescences (with up to 54 flowers). The two species do not overlap in distribution; *Sedum kiersteadiae* occurs approximately 45 miles to the north of *S. rubiginosum* (Zika et al. 2018, CCH2 2021).

Sedum rubiginosum was named for the reddish colors found in the fresh and aged petals as well as the rusty red anthers (Zika et al. 2018).

Ecology

This species grows in open lower and upper montane coniferous forest on gentle to steep rocky slopes and talus in full sun or partial shade at elevations of 1350–1500 m (CWG 2016, Zika et al. 2018). The substrate where this species grows is dry, reddish peridotite and serpentinite (ultramafic) bedrock exposures (CWG 2016, Zika et al. 2018, CPNWH 2021). Plants have been observed in flower in June and July (CWG 2016, Calflora 2021, CalPhotos 2021, CCH2 2021,

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CPNWH 2021). Associates include *Pinus jeffreyi*, *P. sabiniana*, *Calocedrus decurrens*, *Quercus vacciniifolia*, *Arctostaphylos patula*, *Garrya congdonii*, *Aspidotis densa*, *Elymus elymoides*, *Eriogonum libertini* (CRPR 4.2), *E. nudum*, *Eriophyllum lanatum*, *Galium bolanderi*, *Sabulina rosei* (CRPR 4.2), *Packera greenei*, *Phacelia corymbosa*, *Pyrola picta*, *Streptanthus barbatus*, *S. drepanoides* (CRPR 4.3), and *S. tortuosus* (CWG 2016, Zika et al. 2018, CCH2 2021, CNPS 2021, CPNWH 2021).

Distribution and Abundance

We assembled location records for *Sedum rubiginosum* from three sources for this account: the Zika et al. (2018) paper; a spreadsheet of *Sedum* section *Gormaniana* species locations compiled by the Carex Working Group (CWG 2016); and online specimen and observation data for *S. rubiginosum* (Calflora 2021, CalPhotos 2021, CCH2 2021, CPNWH 2021). *Sedum rubiginosum* is currently known from three occurrence records on Tedoc and Little Red mountains. Population sizes are estimated at between 100 and 200 individuals (Kierstead 2021b pers. comm., Zika 2021 pers. comm.). The Tedoc Mountain populations are surprisingly limited in extent; the Little Red Mountain population may be larger, given the large extent of contiguous suitable habitat (Kierstead 2021b pers. comm.). Two of the records are located on Shasta-Trinity National Forest land, and one is located on land of unknown ownership. None of the records are in Wilderness Area.

Status and Threats

The name *Sedum rubiginosum* does not have any conservation status in California or elsewhere (NatureServe 2021). Populations could be threatened by horticultural collectors (Zika et al. 2018, Kierstead 2021b pers. comm.) and increased fire frequency due to climate change (Kierstead 2021b pers. comm.); *Sedum* species likely do not respond well to fire, and the heat of the fire can kill entire populations (Kierstead 2021a pers. comm.).

Summary

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

Recommended Actions

CNPS: Add *Sedum rubiginosum* to CRPR 1B.2

CNDDDB: Add *Sedum rubiginosum* to G1 / S1

Draft CNPS Inventory Record

Sedum rubiginosum Zika

Mt. Tedoc stonecrop

Crassulaceae

CRPR 1B.2

Tehama

North Yolla Bolly West (4012228), Beegum W (4012238)

Lower montane coniferous forest, upper montane coniferous forest / openings, rocky, talus, ultramafic, peridotite, serpentinite; elevation 1350-1500 meters

Perennial herb. Blooms June to July.

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Possibly threatened by fire and horticultural collecting. See *Phytotaxa* 368: 1–61 (2018) for original description.

Literature Cited

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Personal Communications

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