

Added *Antennaria sawyeri* to CRPR 1B.2 and Deleted *Antennaria lanata* from 3.2 in the CNPS Inventory on October 29, 2015

Rare Plant Status Review: *Antennaria lanata* and *Antennaria sawyeri*

Proposal to delete *A. lanata* from CRPR 3.2, G5Q / S1

Proposal to add *A. sawyeri* to CRPR 1B.2, G1 / S1

Danny Slakey (CNPS), Aaron Sims (CNPS) and Roxanne Bittman (CNDDDB)

September 22, 2015

Changes made to the original document appear in blue text.

Background

Antennaria lanata is a California Rare Plant Rank (CRPR) 3.2 plant that has been included in the CNPS Inventory since 2004. It was first added to CRPR 2B of the CNPS Inventory, based on a single collection from the Trinity Alps made in 1975 (*Ferlatte 1721*, CCH 2015). The specimen was originally collected as *A. alpina* var. *media*, was annotated to *A. lanata* by D. Taylor in 1998, and was provisionally confirmed as *A. lanata* by R. Bayer in 2002 (Bayer and Figura 2015). The CNPS Rare Plant Program and CNDDDB reviewed the plant in 2012 and re-ranked it to CRPR 3.2, as R. Bayer (pers. comm. 2012) was confident that the plant represented an undescribed taxon similar to *A. lanata*. Three years later, Bayer and Figura (2015) formally described the plant as *Antennaria sawyeri*. As *Antennaria lanata* is no longer known to occur in California, we are proposing to delete it from the CNPS Inventory, and add *A. sawyeri* in its place.

Neither *A. lanata* nor *A. sawyeri* was included in *The Jepson Manual* (Stebbins and Bayer 1993) or *The Jepson Manual, Second Edition* (Stebbins Bayer 2012), but *A. lanata* was included for California in the *Flora of North America* (Bayer 2006). *Antennaria lanata* is “perhaps the closest relative of *A. sawyeri*” (Bayer and Figura 2015). The newly-described *A. sawyeri* is separated from *A. lanata* by the former’s generally wider leaves, its rounded to acute (vs. acute) leaf tips, and its greatly reduced or absent flags (delicate extensions of the leaf tips) only seen on the distal cauline leaves (vs. the prominent flags on the distal and proximal cauline leaves of *A. lanata*) (Bayer and Figura 2015). The two species also have a significant geographic disjunction, with the nearest occurrence of *A. lanata* being some 400 km away in Harney County, Oregon (*Cronquist 8690*, CPNWH 2015). *Antennaria sawyeri* blooms from June to August, but the exact phenology can vary significantly from year to year based on the snowpack (Bayer and Figura 2015).

Antennaria sawyeri grows in subalpine coniferous forest, in rocky or gravelly serpentine soil. It primarily grows on north-facing slopes that have a late spring snowpack. Its habitat also separates it from *A. lanata*, which grows in moist, non-serpentine alpine slopes. *Antennaria sawyeri* has been found between 2075 to 2430 meters in elevation (Bayer and Figura 2015).

Antennaria sawyeri has a very limited distribution, restricted to just two occurrences in the Trinity Alps Wilderness of the Shasta-Trinity National Forest. In recent surveys, Bayer and Figura (2015) found the plant to occur in 25 discrete areas, ranging from 50 m² to 2 ha each. However, these colonies are all within a 2 km² region (Bayer and Figura 2015), and only represent two separate occurrences. Due in particular to the remoteness of the habitat for this plant, it could be found in additional areas. There are high-elevation serpentine habitats adjacent to the known area of occurrence, including the upper Swift Creek drainage as well as upper Boulder and Little Boulder Creeks. Farther afield, similar high-elevation serpentine habitats are found near the Siskiyou-Trinity county line, in the vicinity of Eagle Peak, Cory Peak, China Mountain, and Mt. Eddy (Bayer and Figura 2015). Based on the number of plant specimens collected from these areas in the past, it appears that only Mt. Eddy has been extensively surveyed botanically (CCH 2015).

Antennaria sawyeri does not face any imminent threats, due to its remote occurrence in a wilderness area. However, climate change may be a serious threat to this plant's long-term survival. *Antennaria sawyeri* primarily occurs in areas of late-lying snow, and climate-change models suggest that spring snowpack will decrease in California over the next century. However, the dependence of *A. sawyeri* on the spring snowpack, as well as its response to a reduced snowpack, are both still unknown (Bayer and Figura 2015). This, combined with the very low number of known occurrences and narrow distribution, suggest that *A. sawyeri* is at least moderately threatened.

Based on the available information, CNPS and CNDDDB recommend deleting *Antennaria lanata* from CRPR 3.2, as it does not occur in California, and adding *Antennaria sawyeri* to CRPR 1B.2 of the CNPS Inventory. If more information on this plant becomes available in the future, we will re-evaluate its status at that time.

Recommended Actions

CNPS: Delete *Antennaria lanata* from CRPR 3.2;
Add *Antennaria sawyeri* to CRPR 1B.2
CNDDDB: Delete *Antennaria lanata* from G5Q / S1;
Add *Antennaria sawyeri* to G1 / S1

Current CNPS Inventory Record

Antennaria lanata (Hook.) Greene
woolly pussy-toes
Asteraceae
CRPR 3.2
Idaho, Montana, Oregon, Washington, Wyoming
Trinity
Siligo Peak (667B) 40122H8
Meadows and seeps (rocky); elevation 2225 – 2230 meters.
Perennial herb. Blooms July to August.

Previously on List 2.2; does not occur in CA, but CA plants are planned to be described as a new, previously undescribed plant by R. Bayer and P. Figura. Included here as a placeholder for what will be considered a very rare plant known only from the Trinity Alps of CA. Not in *TJM* (1993) and *TJM 2*.

Website <http://www.rareplants.cnps.org/detail/12.html> [Accessed 18 September 2015]

Revised CNPS Inventory Record

Antennaria lanata (Hook.) Greene

Considered But Rejected: Previously CRPR 3.2; does not occur in California. Plants previously identified as *A. lanata* in California are actually *A. sawyeri*, a recently described taxon.

Draft CNPS Inventory Record

Antennaria sawyeri R.J. Bayer and P.F. Figura

Sawyer's pussy-toes

Asteraceae

CRPR 1B.2

Trinity

Siligo Peak (667B) 401228

Subalpine coniferous forest / serpentinite, rocky or gravelly; usually north-facing slopes with late spring snowpack; elevation 2075-2430 meters.

Perennial herb. Blooms June to August.

Possibly threatened by climate change. Previously identified as *A. lanata*, a plant that does not occur in California. Not included in *TJM* (1993) or *TJM 2*. See *Systematic Botany* 40(2):620-626 (2015) for original description.

Literature Cited

Bayer, R.J. 2012. *Antennaria*. Pp. 242-244 in Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken (eds.), *The Jepson Manual: Vascular Plants of California* (2nd ed.). University of California Press, Berkeley and Los Angeles.

_____. 2006. *Antennaria*. *Flora of North America* Editorial Committee (eds.), *Flora of North America North of Mexico*, Vol. 19. New York and Oxford.

____ and P.J. Figura. 2015. *Antennaria sawyeri* (Asteraceae: Gnaphalieae), a new serpentine endemic species from the Klamath Mountains of northern California. *Systematic Botany* 40(2): 620-626.

Consortium of California Herbaria (CCH). 2015. 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 18 September 2015].

Consortium of Pacific Northwest Herbaria (CPNWH). 2015. Providing access to specimen data and digital resources from herbaria throughout the Pacific Northwest North America. University of Washington, Burke Museum of Natural History and

Sent to: NW, B. Baldwin, R. Bayer, P. Figura, D. Wilken, C. Winchell on 09/22/2015

Element Code: PDAST0H0B0 (*A. lanata*), PDAST0H1S0 (*A. sawyeri*)

Culture, Seattle, WA. Website <http://www.pnwherberia.org/data/search.php> [accessed 18 September 2015].

Stebbins, G.L. and R.J. Bayer. 1993. *Antennaria*. Pp. 196-198 in Hickman, J.C. (ed.), *The Jepson Manual: Higher Plants of California*. University of California Press, Berkeley.

Sent to: NW, B. Baldwin, R. Bayer, P. Figura, D. Wilken, C. Winchell on 09/22/2015