

**Rare Plant Status Review: *Allium geyeri* var. *tenerum*  
Proposed Addition to California Rare Plant Rank 2B.1, G4G5T4 / S1**

Aaron E. Sims (CNPS) and Katie Ferguson (CNDDDB)

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**Background and Taxonomy**

*Allium geyeri* S. Watson var. *tenerum* M.E. Jones is a perennial bulbiferous herb in Alliaceae that was newly discovered from the Devils Garden area of Modoc Plateau, Modoc County, where previously only known from outside of California in the western United States, north to British Columbia and Alberta, Canada. Note, *Allium* was classified in Amaryllidaceae by APG III (2009) and is also treated within Amaryllidaceae by the *Flora of Oregon* (Otting et al. 2015) and Oregon Plant Atlas (2020), however, CNPS and CNDDDB continue to recognize its classification in Alliaceae following the *Jepson eFlora* (McNeal 2012). Since only recently being collected and discovered in California in 2016, *A. geyeri* var. *tenerum* is not included in *The Jepson Manual* (McNeal 1993) or *Jepson eFlora* (McNeal 2012), but is included in the *Flora of North America North of Mexico* as being more broadly distributed in the western United States (McNeal and Jacobsen 2002). The first known discovery and collection of this taxon in California was made by Lawrence Janeway on May 17, 2016, while exploring under-collected areas of northern California to help better document the flora and also in preparation of updating *Vern Oswald's Selected Plants of Northern California and Adjacent Nevada* (Janeway pers. comm. 2018; Janeway 2019 and 2020). At the same time of his field explorations, Janeway also discovered the first California record of *Castilleja peckiana* (Janeway pers. comm. 2018; Janeway 2020), which will be reviewed for addition to the CNPS Inventory and CNDDDB in a separate status review.

*Allium geyeri* is known from only two varieties; var. *tenerum* is differentiated from the nomotypical variety, *geyeri*, in having an umbel that is not fully floriferous, producing 0-5, mostly sterile flowers that are usually replaced by ovoid, acuminate bulbils (vs. umbel fully floriferous, not producing bulbils and ovaries mostly all producing seeds in var. *geyeri*—var. *tenerum* rarely produces seeds) (McNeal and Jacobsen 2002). *Allium geyeri* var. *tenerum* is very distinctive amongst other *Allium* taxa in California as being only one of two others that have their flowering pedicels replaced by bulbils (referenced as bulblets in the *Jepson eFlora*); the other two California taxa with bulbils being *A. sativum* (cultivated garlic) and *A. vineale* (naturalized) (McNeal 2012), and the latter is the only one known from northern California (Janeway 2020).

The specific epithet, '*geyeri*', is a latinized name of German botanist Karl Andreas Geyer (1809-1853) (Charters 2019), who appears to have been the first person to collect this species (Watson 1879). The variety name, '*tenerum*', is Latin for slender, tender, soft (Charters 2019), which in this case is in reference to its "very slender form" (Jones 1902).

**Ecology**

Globally, *A. geyeri* var. *tenerum* is known from meadows and along streams at an approximate elevation of 0 – 3,100 meters, and flowers from May to September (McNeal and Jacobsen 2002). In California it was observed and collected from damp soil and moss in between rocks in a wide rocky flood plain constrained by 12 meter high rock walls from 1,494 meters in elevation, and was flowering in May (Janeway 12038, CHSC118295, JEPS127583; Janeway pers. comm.

2018; Janeway 2020). On a second trip to photograph the plant on 12 June 2018, the plants were already done flowering (Janeway 2020), so thus far May is the only documented flowering period of this taxon in California. No species associates are listed for this taxon in California.

### **Distribution and Abundance**

In California, this taxon is only known from a single occurrence at Logan Slough in the Devils Garden of Modoc Plateau. The closest known record of it outside of the state is in the vicinity of Sage Hen Buttes, Lake County, Oregon, about 120 air km (75 air mi) west-southwest of the single California record (Janeway 2020; *Crosby 2656*, OSC162332, CPNWH 2020, SEINet 2020). In a second trip to photograph and further document *A. geyeri* var. *tenerum*, Janeway searched up- and down-stream at its known site and also spent 2-3 days travelling to different parts of the Devils Garden area, stopping at numerous drainages that appeared similar to Logan Slough, but did not locate any additional populations of this plant (Janeway 2020). Its single occurrence is wholly within Modoc National Forest in central Modoc County.

### **Status and Threats**

*Allium geyeri* var. *tenerum* is considered Vulnerable (S3) in Montana and Wyoming, Apparently Secure (S4) in British Columbia, Canada, and is currently not ranked in other states or Canadian provinces (NatureServe 2020). While no threats are documented for this plant in California, it is potentially threatened by climate change and stochastic events, and we therefore propose a Threat Rank of 0.1.

### **Summary**

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

### **Recommended Actions**

CNPS: Add *Allium geyeri* var. *tenerum* to CRPR 2B.1

CNDDDB: Add *Allium geyeri* var. *tenerum* to G4G5T4 / S1

### **Draft CNPS Inventory Record**

*Allium geyeri* S. Watson var. *tenerum* M.E. Jones

bulbil onion

Alliaceae

USDA Symbol: ALGET

CRPR 2B.1

Modoc

Arizona, Colorado, Idaho, Oregon, Montana, Nevada, New Mexico, Utah, Washington,

Wyoming

Whittemore Ridge 4112066

Meadows and seeps / rocky, streambanks; elevation 1495 meters.

Perennial bulbiferous herb. Blooms May.

Discovered in CA by L.P. Janeway in 2016. See *Contributions to Western Botany* 10:28 (1902) for original description, and *Newsletter of the Friends of the Chico State Herbarium* 26(1):7-9 (2020) for information on discovery in CA.

### Literature Cited

[APG III] Angiosperm Phylogeny Group III. 2009. An update of the angiosperm phylogeny group classification for the orders and families of flowering plants: APG III. *Botanical Journal of Linnean Society* 161(2): 105–121. doi: 10.1111/j.1095-8339.2009.00996.x [[Google Scholar](#)].

Charters, M. L. 2019. California Plant Names: Latin and Greek Meanings and Derivations. Website <http://www.calflora.net/botanicalnames/index.html> [accessed 14 December 2020].

CCH1. 2020. Consortium of California Herbaria, portal 1. Website <https://ucjeps.berkeley.edu/consortium> [accessed 14 December 2020].

CPNWH. 2020. Consortium of Pacific Northwest Herbaria. Website [www.pnwherbaria.org/index.php](http://www.pnwherbaria.org/index.php) [accessed 14 December 2020].

Janeway, L.P. 2020. First record of *Allium geyeri* var. *tenerum* (Amaryllidaceae) for California. Friends of the Herbarium 25<sup>th</sup> Anniversary Newsletter. *Newsletter of the Chico State Herbarium* 26(1): 7-9.

Janeway, L.P. 2019. *Vern Oswald's Selected Plants of Northern California and Adjacent Nevada*, second edition. Studies from the Herbarium, Number 19. California State University, Chico.

Jones, M.E. 1902. *Contributions to Western Botany* 10: 28. (Original description.)

McNeal, D.W. 2012. *Allium*. Pp. 1290–1297 in B.G. Baldwin, D.H. Goldman, D.J. Keil, R. Paterson, T.J. Rosatti, and D.H. Wilken, editors. *The Jepson manual: vascular plants of California*, second edition. University of California Press, Berkeley.

\_\_\_\_\_. 2020. *Allium*. In Jepson Flora Project (eds.). *Jepson eFlora*. Website [https://ucjeps.berkeley.edu/eflora/eflora\\_display.php?tid=9889](https://ucjeps.berkeley.edu/eflora/eflora_display.php?tid=9889) [accessed 14 December 2020].

McNeal, D.W. and T.D. Jacobsen. 2002. *Allium geyeri* S. Watson, in Flora of North America Editorial Committee (eds.), *Flora of North America North of Mexico*, Volume 26. Website [http://www.efloras.org/florataxon.aspx?flora\\_id=1&taxon\\_id=242101360](http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=242101360) [accessed 14 December 2020].

NatureServe. 2020. NatureServe Explorer [web application]. Arlington, Virginia. Website [https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.2.144002/Allium\\_geyeri\\_var\\_tenerum](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.144002/Allium_geyeri_var_tenerum) [accessed 14 December 2020].

Oregon Plant Atlas. 2020. *Allium geyeri* var. *tenerum* M.E. Jones, bulbil onion. Oregon Flora Project. Website <https://oregonflora.org/taxa/index.php?taxon=12007> [accessed 14 December 2020].

Otting, N., R.E. Brainerd, and B.L. Wilson. 2015. *Allium*. Pp. 133–144 in Meyers, S.C., T. Jaster, K.E. Mitchell, and L.K. Hardison. *Flora of Oregon*, Volume 1: Pteridophytes, Gymnosperms, and Monocots. Botanical Research Institute of Texas, Fort Worth, Texas.

SEINet. 2020. Arizona – New Mexico Chapter, Symbiota. Website  
<http://swbiodiversity.org/seinet/index.php> [accessed 14 December 2020].

Watson, S. 1879. Contributions to American botany: *A. geyeri*. *Proceedings of the American Academy of Arts and Sciences* 14: 227-228.

### **Personal Communications**

Janeway, Lawrence P. 2018-2020. Curator, CSU Chico Herbarium; Botanist, Feather River Ranger District, Plumas National Forest. Email correspondence regarding first discovery of *Allium geyeri* var. *tenerum* in California. Personal communications 2018 to 2020.