

Added to California Rare Plant Rank 1B.1 on June 14, 2012**Rare Plant Status Review: *Agrostis lacuna-vernalis*
Proposed New Add to Rank 1B.1, G1 / S1**

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Changes made to the original document appear in blue text.

Background

Agrostis lacuna-vernalis is an annual herb in the Poaceae that is endemic to the Monterey Peninsula of Monterey County, California. It was recently described by Peterson et al. (2011), and is not included in *The Jepson Manual, Second Edition* and *Flora of North America, Vol. 24 (FNA)*. *Agrostis lacuna-vernalis* was initially discovered by Ellen Holmes and Randall Morgan in 2007 or 2008 (D. Styer pers. comm. with R. Morgan 2010), then subsequently collected in May 2010 by Randall Morgan, Dylan Neubauer, David Styer, and Vern Yadon, who were unable to name it (D. Neubauer pers. comm. 2010). Their May 2010 collection of the unidentified *Agrostis*, with past material from R. Morgan, was later submitted to *Agrostis* experts, P. M. Peterson and R. J. Soreng to make a determination (D. Neubauer and D. Styer pers. comms. 2010). Peterson and Soreng (pers. comms. 2010) found that it did not fit the description of any *Agrostis* taxa in the *FNA*, ruled out the possibility that it was an exotic introduction, and determined that it was likely a new taxon (D. Neubauer pers. comm. 2010).

Agrostis lacuna-vernalis is distinguished from other North American *Agrostis* species by exhibiting the following combination of characters: annual habit narrowly spicate panicles, spikelets with a glabrous callus, unawned lemmas, palea $\frac{1}{2}$ to $\frac{2}{3}$ the lemma length, and anthers that are 0.4 to 0.7 mm long. *Agrostis lacuna-vernalis* is morphologically similar to *A. blasdalei*, *A. densiflora*, and *A. variabilis*, but differs from these species by having an annual habit and shorter lemmas. It further differs from *A. blasdalei* by having shorter glumes (1.5-2.4 mm versus 1.8-4 mm) and longer paleas (0.4-0.7 mm versus ± 0.3 mm); from *A. densiflora* by having narrower leaf blades (0.3-1 [to 1.5] mm versus 2-10 mm) and a glabrous (versus puberulent) callus; and from *A. variabilis* by having well-developed paleas (0.4-0.7 mm versus absent or minute) and a glabrous (versus puberulent) callus. *Agrostis lacuna-vernalis* is named after vernal pool habitat; "lacuna" meaning pool, and "vernalis" meaning spring or ephemeral. It flowers from April to May (Peterson et al. 2011).

Agrostis lacuna-vernalis occurs in mima mound areas within or on the margins of vernal pools (see Peterson et al. 2011 for list of species associates). It occurs at an approximate elevation of 115 to 145 meters. *Agrostis lacuna-vernalis* "is associated with (*= exotic/introduced): **Aira caryophylla* L., *Allium hickmanii* Eastw., **Avena barbata* Link, **Briza minor* L., *Brodiaea terrestris* Kellogg ssp. *terrestris*, **Bromus hordeaceus* L., *Calochortus uniflorus* Hook. & Arn., *Castilleja ambigua* ssp. *insallutata* (Jeps.) T.I. Chuang & Heckard, *Cicendia quadrangularis* (Lam.) Griseb., **Cotula coronopifolia* L., *Danthonia californica* Bol., *Deschampsia danthonioides* (Trin.) Benth.,

Elatine brachysperma A. Gray, *Eleocharis acicularis* (L.) Roem. & Schult., *Eryngium armatum* (S. Watson) J.M. Coult. & Rose, *Isoetes howellii* Engelm., *Juncus bufonius* (L.) var. *bufonius*, **J. capitatus* Weigel, *Lasthenia conjugens* Greene, *Leptosiphon parviflorum* Benth., *Lilaea scilloides* (Poir.) Hauman, **Lolium multiflorum* Lam., **Lythrum hyssopifolia* L., *Microseris paludosa* (Greene) J.T. Howell, *Montia fontana* L., *Plagiobothrys chorisianus* var. *hickmanii* (Greene) I.M. Johnst., *Pilularia americana* A. Braun, **Plantago coronopus* L., *P. elongata* Pursh, *P. erecta* E. Morris, *Psilocarphus chilensis* A. Gray, *Ranunculus californicus* Benth., *Sisyrinchium bellum* S. Watson, *Trifolium barbigerum* Torr., *T. buckwestiorum* Isely, *T. polyodon* Greene, *T. truncatum* (Greene) Greene, *T. variegatum* Nutt., and **Vulpia bromoides* (L.) Gray” (Peterson et al. 2011).

Agrostis lacuna-vernalis is known only from one occurrence within Butterfly Valley (former Fort Ord Army Military Base) and Machine Gun Flats (Fort Ord Public Lands) on the Monterey Peninsula (east of Monterey Bay). As of April 20, 2012, the entire known distribution of *A. lacuna-vernalis* lies within Fort Ord National Monument, even if they are on U.S. Army land (D. Styer pers. comm. 2012). It is locally frequent within wetlands in an area of 2.5 km², and there are estimated to be between 1,000 and 10,000 individuals. *Agrostis lacuna-vernalis* has a limited maximum potential range; the more or less mima mound/vernal pool habitat within the region is estimated to be less than 5 km² (Peterson et al. 2011).

Possible threats to *A. lacuna-vernalis* include competition from non-native grasses and other plants, habitat destruction from road building, off road vehicles, livestock grazing, and adverse changes to drainage patterns (Peterson et al. 2011).

Based on the available information, CNPS and CNDDDB recommend that *Agrostis lacuna-vernalis* be added to California Rare Plant Rank 1B.1. The current known distribution, small population size, limited potential remaining habitat, and possible threats to *A. lacuna-vernalis* indicate that it clearly meets the requirements for Rank 1B of the CNPS Inventory.

Recommended Actions

CNPS: Add to CNPS 1B.1

CNDDDB: Add to CNDDDB G1 / S1

Please review the draft CNPS Inventory record below, respond Yes or No on the proposal to add this species to the Inventory and CNDDDB, and provide any edits/comments. If responding No, please provide supporting information.

Draft CNPS Inventory Record

Agrostis lacuna-vernalis P.M. Peterson & Soreng
vernal pool bent grass
Poaceae
Rank 1B.1

Monterey

Marina (366A) 3612167, Salinas (365B) 3612166, Seaside (366D) 3612157, Spreckels (365C) 3612156

Vernal pools (mima mounds); elevation 115 – 145 meters.

Annual herb. Blooms April to May.

Known only from Butterfly Valley and Machine Gun Flats [of Ft. Ord National Monument on the Monterey Peninsula](#). Possibly threatened by non-native plants, road construction, vehicles, grazing, and hydrological alterations. Similar to *A. blasdalei*, *A. densiflora*, and *A. variabilis*. Not in *TJM 2*. See *Journal of the Botanical Research Institute of Texas* 5(2):421-426 (2011) for original description.