

**Added to California Rare Plant Rank 4.3 of the CNPS Inventory on
November 18, 2016**

Rare Plant Status Review: *Adiantum shastense*

Proposed Addition to California Rare Plant Rank 4.3, G3 / S3

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Changes made to the original document are in blue text.

Background

Adiantum shastense Huiet & A.R. Sm. is a perennial herb in the Pteridaceae known from Shasta County, California. It was recently described, and is therefore not included in *The Jepson Manual* (1993), *The Jepson Manual, Second Edition* (2012), or *Flora of North America* (Vol. 2). *Adiantum shastense* was discovered, by chance, during a worldwide molecular study of *Adiantum capillus-veneris*. While confirming the identity of the few *Adiantum* collections from Shasta County, it was determined that several specimens labeled as *A. capillus-veneris* or *A. jordanii* were neither of these species, but actually an undescribed sister to *A. jordanii* (Huiet et al. 2015). *Adiantum shastense* was first collected in 1894 by Milo Baker and Frank Nutting and was originally determined to be *A. jordanii* (*Baker and Nutting s.n.*, UC62723). It can be identified by its dark brown to purplish rhizome scales (versus golden or light brown scales in *A. capillus-veneris*) and mature fronds persistent and evergreen through summer and into winter (versus mature fronds dying in late spring or early summer, and unseen in late summer in *A. jordanii*) (Huiet et al. 2015). *Adiantum shastense* is also readily distinguishable from these species in having diamond shaped pinnules (versus cuneate or fan-shaped pinnules in *A. capillus-versus* and reniform pinnules in *A. jordanii*).

Adiantum shastense occurs in mesic hardwood-conifer forests around Shasta Lake and attached waterways in Shasta County, and is sometimes associated with limestone. It occurs between 330 and 1,535 meters in elevation and sporulates in mid to late spring with the likelihood of sporulating throughout the summer (Huiet et al. 2015).

Adiantum shastense is known from approximately 51 occurrences (comprised of 116 collections and observations) in a very narrow range, mostly around Shasta Lake and the associated rivers in Shasta County. It is known from approximately 12 additional sites not accounted for in the locations section of the attached "NewAdd_AdiantumShastense" spreadsheet, which document its extent downstream of Shasta Dam towards the Keswick area, and in the southwestern portion of Whiskeytown Recreation Area in the Clear Creek watershed (L. Lindstrand III pers. comm. 2016). Four of the 51 occurrences are historical (occurrences not seen in over 20 years are considered historical by the CNDDDB). One occurrence is on land owned by Bureau of Land Management, 39 occurrences are in the Shasta-Trinity National Forest, and 11 occurrences have an unknown land ownership. In order to establish the geographic range of *A. shastense*, additional collections of *A. jordanii* and *A. capillus-veneris* from neighboring counties and Oregon were surveyed and correctly identified, and new collections were made during surveys in 2014 (Huiet et al. 2015). Although geographically restricted and only known from approximately 51 occurrences, there are

a significant number of individuals of *A. shastense*, and its occurrences and numbers are only expected to increase as more botanists become aware of it in comparison to its more common ancestor, *A. jordanii*. That said, its overall range is not expected to significantly increase based on its occasional to frequent affinity for carbonate substrates.

Overall threats to *A. shastense* are considered minimal at this time. A portion of its range is potentially threatened by hydrological alterations and development from the reservoir expansion of Shasta Lake, but this is not expected to significantly impact this species as a whole, due to its many occurrences situated in more upland habitat.

Based on the available information, CNPS and CNDDDB recommend adding *Adiantum shastense* to California Rare Plant Rank 4.3 of the CNPS Inventory. If knowledge on the distribution, threats, and rarity status of *A. shastense* changes in the future, we will re-evaluate its status at that time.

Recommended Actions

CNPS: Add *Adiantum shastense* to CRPR 4.3

CNDDDB: Add *Adiantum shastense* to G3 / S3

Draft CNPS Inventory Record

Adiantum shastense Huiet & A.R. Sm.

Shasta maidenhair fern

Pteridaceae

CRPR 4.3

Shasta

Oak Run (646A) 4012261, Bella Vista (646B) 4012262, Project City (647A) 4012263, Shasta Dam (647B) 4012264, Chalk Mountain (663A) 4012187, Goose Gap (664A) 4012281, Bollibokka Mountain (664B) 4012282, Minnesota Mountain (664C) 4012272, Devils (664D) 4012271, Lamoine (665B) 4012284, Bohemotash Mountain (665C) 4012274, O'Brien (665D) 4012273, Lake McCloud (681A) 4112221, Girard Ridge (681B) 4112222, Yellow Jacket Mtn. (681C) 4112212, Shoeinhorse Mtn. (681D) 4112211, Chicken Hawk Hill (682C) 4112214

Lower montane coniferous forest / sometimes carbonate; elevation 330 – 1,535 meters. Perennial herb. Sporulates April to August.

Originally identified as *A. jordanii* and also similar to *A. capillus-veneris*; distinguished from these species in having diamond shaped pinnules [and by its perennial habit, with the presence of old fronds underlying its fresh fronds](#). See *PhytoKeys* 53:73-81 (2015) for original description.

Literature Cited

Consortium of California Herbaria. 2016. 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 16 August 2016].

Huiet, L., M. Lenz, J.K. Nelson, K.M. Pryer, and A.R. Smith. 2015. *Adiantum shastense*, a new species of maidenhair fern from California. *PhytoKeys* 53: 73–81.