

Added to California Rare Plant Rank 1B.3 of the CNPS Inventory on June 3, 2014

**Rare Plant Status Review: *Orthotrichum holzingeri*
Addition to California Rare Plant Rank 1B.3, G3 / S2**

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Background

Orthotrichum holzingeri is one of 29 bryophytes that are being added to the CNPS Inventory and CNDDDB based on decisions made at one to three California Bryophyte Working Group (CBWG) meetings held on January 18, 2010, January 28, 2013, and January 30, 2014. The CBWG is a committee of bryology experts that are familiar with the taxonomic, rarity, and/or conservation status of bryophytes in California. If you are interested in joining and/or learning more about this group, please contact the first author at asims@cnps.org or (916) 324-3816.

Orthotrichum holzingeri is a rheophytic moss in the Orthotrichaceae that is endemic to a small region of western North America. "This species is distinguished by having smooth leaf cells, smooth exostome [outer row or rows of the peristome], naked calyptra [hood that forms from wall of archegonium], and exserted, lightly-ribbed capsules" (Vitt 2007). *Orthotrichum holzingeri* is most closely related to *O. laevigatum*, but is distinguished from this species in having both smooth (versus papillose) exostome teeth and leaves, naked (versus hairy) calyptra, a large prostome (rudimentary structure outside and usually adhering to the main peristome teeth) that extends 1/3 of the way up exostome (versus prostome small or absent), and in occurring on seasonally wet rocks (versus occurrence on dry rocks for *O. laevigatum*) (Vitt 2007).

Orthotrichum holzingeri usually occurs on moist rocks in and along streams of cismontane woodland, lower and upper montane coniferous forest, and pinyon and juniper woodland. It was also found on moist limbs of *Quercus* in Amador County, but all other known occurrences in California are on rocks. *Orthotrichum holzingeri* is known from an approximate elevation of 715 to 1,800 meters.

Orthotrichum holzingeri is known from approximately seven occurrences in California, from Amador, Modoc, Siskiyou, Tulare, and Tuolumne counties. The only historical occurrence of *O. holzingeri* is from Boles Creek, Modoc County (Norris 79166, DHN) (occurrences not seen in the past twenty years are considered historical by the CNDDDB). More populations are likely to show up in Modoc County, and *O. holzingeri* is also expected to show up in Lassen County (CBWG 2013). Six occurrences are on protected federal lands, and a single occurrence is from an unknown landowner, from Irongate Reservoir (Lenz 636a). There is a single occurrence of *O. holzingeri* known from the following five National Forests (NF) and one National Park (NP) in California: Eldorado NF, Klamath NF, Modoc NF, Sequoia NP, Shasta-Trinity NF, and Stanislaus NF.

Orthotrichum holzingeri is ranked S1 in Idaho and Oregon, and is unranked (SNR) in Washington and Wyoming by NatureServe (2014). Along the Idaho / Washington border it is threatened by a major road construction project. The type locality of *O. holzingeri* is on private property in Lewiston, Nez Perce County, Idaho, and is presumed to be very threatened and already severely damaged, possibly from development and urbanization (CBWG 2013).

Orthotrichum holzingeri is possibly threatened overall by quarrying, rock climbing, trail and road construction, and changes in water levels in seasonally high water zones (ISSSSP 2010). Specific threats to *O. holzingeri* in California, however, are unknown. At the 2013 CBWG meeting it was recommended to have a threat rank of .2. Though all of the threats documented at that meeting were for out of state occurrences, and upon further evaluation we are assigning a threat rank of .3 at this time. *Oligotrichum holzingeri* is currently almost entirely known from protected federal lands in California and no threats to the California populations are currently documented. If additional information on the distribution and/or threats to this species in California becomes available in the future, we will review its status at that time.

Actions

CNPS: Added to 1B.3

CNDDDB: Added to G3 / S2

CNPS Inventory Record

Oligotrichum holzingeri Renault & Cardot

Holzinger's orthotrichum moss

Orthotrichaceae

CRPR 1B.3

Idaho, Oregon, Washington, Wyoming

Amador, Modoc, Siskiyou, Tulare, Tuolumne

Giant Forest (354D) 3611857, Ackerson Mtn. (456D) 3711977, Bear River Reservoir (507C) 3812052, Lake McCloud (681A) 4112221, Scott Mountain (700C) 4112236, Pothole Valley (727C) 4112078, Iron Gate Reservoir (733B) 4112284

Cismontane woodland, lower montane coniferous forest, upper montane coniferous forest, pinyon and juniper woodland / usually on rock in and along streams, rarely on tree limbs; elevation 715 to 1,800 meters

rheophytic moss

Possibly threatened by recreational activities, trail and road construction, and hydrological alterations. Similar to *O. laevigatum*. See *Contributions from the United States National Herbarium* 3(4):270 (1895) for original description, and *Bryophytorum Bibliotheca, Band 1:101-103* (1973) for taxonomic treatment.

Literature Cited

Interagency Special Status Sensitive Species Program (ISSSSP). 2010. Species fact sheet: *Orthotrichum holzingeri*. Prepared by J.A. Harpel, edited by R. Huff, and updated by C. Duncan. Inter-Agency Pacific Northwest: Forest Service / Bureau of Land

Management, Oregon – Washington State. Available online at <http://www.fs.fed.us/r6/sfpnw/issssp/species-index/flora-bryophytes.shtml>.

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Renauld, F.F.G. and J. Cardot in J.M. Holzinger. 1895. Report on a collection of plants made by J. H. Sandberg and assistants in northern Idaho in the year 1892. Contributions from the United States National Herbarium 3(4): 270.

Vitt, D.H. 1973. A revision of the genus *Orthotrichum* in North America, North of Mexico. Bryophytorum Bibliotheca, Band 1: 101-103.

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