

Rare Plant Status Review: *Polystichum lonchitis*
Proposed Change from California Rare Plant Rank 3, G5 / S3 to 4.3, G5 / S3
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Changes to the original document are in blue text.

This species review is being expedited through a challenge cost share agreement between the California Native Plant Society and the USDA Forest Service, Pacific Southwest Region. Aside from being advanced as part of this agreement, the process, content, and information provided herein is not altered, modified, or developed differently in any way or form compared to other status reviews developed by CNPS.

Polystichum lonchitis (L.) Roth is a perennial fern in the Dryopteridaceae. It has been included in the Rare Plant Inventory since 1984, when it was added to California Rare Plant Rank (CRPR) 3 (CNPS 2022; <https://rareplants.cnps.org/Plants/Details/1399>). It is a distinct species and has never been subject to any taxonomic questions (Wagner 1979, 1993; Smith 2012). It was added to CRPR 3 due to uncertainty about its distribution and number of occurrences in California. Since that time, additional collections and observations have been made, collections data have become more readily available in online databases, and specimens with questionable identification have been reexamined by experts. Some of the Californian collections ascribed to *P. lonchitis* were found to be misidentified (A. Smith 2021 and 2022, pers. comm.; D. Wagner 2021 and 2022, pers. comm.).

Polystichum lonchitis has a circumboreal distribution and is found in North America mainly along the western mountains from Alaska southward to Arizona and northern California. Disjunct populations are found in Greenland, Quebec, Newfoundland, Nova Scotia, and the Great Lakes region (Wagner 1979, 1993; POWO 2022). As a CRPR 3 plant, *P. lonchitis* has not been mapped at the occurrence level by the California Natural Diversity Database (CNDDB). As a result of the present status review, there are currently 50 known occurrences of this species in California, mostly in the Klamath Ranges (39 occurrences) but also extending to the High Cascade Ranges (3), the High North Coast Ranges (2), the northern High Sierra Nevada (5), and central High Sierra Nevada (1) in Del Norte (2 occurrences), Siskiyou (35), Humboldt (1), Trinity (3), Shasta (1), Tehama (1), Glenn (1), Plumas (2), Sierra (1), Placer (1), Alpine (1), and Mariposa (1) counties (NRIS 2020, Calflora 2021, CCH1 2021, CCH2 2022; D. Wagner 2021, pers. comm.). Thirty-nine occurrences are historical (not revisited within the last 20 years), and 11 are recent. Forty-six occurrences (92%) are on National Forest lands, including the Klamath NF (27 occurrences), Shasta-Trinity NF (7), Rogue River-Siskiyou NF (5), Plumas NF (2), Six Rivers NF (1), Mendocino NF (1), Lassen NF (1), Tahoe NF (1), and Eldorado NF (1). Of the remaining occurrences, one is in Yosemite National Park, and three are on lands of unknown (presumably private) ownership. More than half of the known occurrences are in federally designated Wilderness areas, including the Marble Mountain Wilderness (15 occurrences), the Trinity Alps Wilderness (4), the Siskiyou Wilderness (3), the Red Buttes Wilderness (1), the Russian Wilderness (1), the Castle Crags Wilderness (1), the Yolla Bolly-Middle Eel Wilderness (1), and the Mokelumne Wilderness (1). The number of plants per occurrence is not well documented, and threats are unknown although possibly negligible due to this species' preference for rocky, upper montane habitats well removed from human habitation. Field-work

is needed to rediscover historical occurrences, gather population data, assess site quality and threats, and search for additional occurrences. During the forum review process, several reviewers commented that this taxon is very common at upper elevations in northern California.

Based on the available information, we recommend changing *Polystichum lonchitis* from CRPR 3 to 4.3 in the CNPS Inventory and CNDDDB. If knowledge on the distribution, threats, and rarity of *P. lonchitis* changes in the future, we will re-evaluate its status at that time. After the forum review process was completed, the authors changed their recommendation to CBR.

Recommended Actions

CNPS: Change *Polystichum lonchitis* from CRPR 3 to 4.3-CBR

CNDDDB: Keep *Polystichum lonchitis* as G5 / S3

Draft CNPS Inventory Record (Changes to the original record are in green text)

Polystichum lonchitis (L.) Roth

northern holly fern

Dryopteridaceae

USDA Plants Symbol: POLO4

CRPR 34.3 CBR

Counties: Alpine, Del Norte, Glenn, Humboldt, Mariposa, Placer, Plumas, Shasta, Sierra, Siskiyou, Tehama, Trinity

States: Alaska (AK), Arizona (AZ), California (CA), Colorado (CO), Idaho (ID), Michigan (MI), Minnesota (MN), Montana (MT), Nevada (NV), New York (NY), Oregon (OR), South Dakota (SD), Utah (UT), Washington (WA), Wisconsin (WI), Wyoming (WY)

Quad name (code): ~~Belden (4012113)~~, Boulder Peak (4112351), Carson Pass (3811968), Condrey Mtn. (4112288), Dutch Creek (4112381), Eaton Peak (4112238), English Peak (4112342), Gold Lake (3912066), Granite Chief (3912023), Half Dome (3711965), Happy Camp (4112374), Kangaroo Mtn. (4112382), Marble Mountain (4112352), Mt. Hilton (4012381), North Yolla Bolly (4012228), Plaskett Meadows (3912267), Polar Bear Mtn. (4112385), Preston Peak (4112375), Rainbow Mountain (4112148), Scott Mountain (4112236), Seven Lakes Basin (4112224), Storrie (3912183), Thurston Peaks (4012382), Trinity Mtn. (4112314), Ukonom Lake (4112353)

General Habitat: Subalpine coniferous forest, upper montane coniferous forest

Micro Habitat: Rocky, mesic, carbonate (sometimes), granitic (sometimes)

Elevation: ~~1800–2600~~ 1525 - 2665 meters

Life form: perennial rhizomatous herb

Blooms: Jun-Sep

- Notes: ~~Move to List 2? Location, rarity, and endangerment information needed. Does plant occur in TRI Co.?~~ Previously CRPR 3 due to lack of location, rarity, and endangerment information. Not known to be taxonomically problematic. Changed to CBR after a 2022 status review (exploring change to CRPR 4), because Forum reviewers commented that this species is frequently encountered at high elevations in California.

Taxonomy: Sometimes confused with *P. imbricans*, *P. kruckebergii*, *P. munitum*. In *P. lonchitis*, the lower pinnae (leaflets) become gradually reduced in size (the lowermost \pm deltate in outline) and extend almost to the base of the frond, i.e. the stipe (petiole) is very short, mostly less than 1/6 the length of the blade.

Selected References:

- Taxonomic Treatment: *Pteridologia* 1: 1–64 (1979)

Literature Cited

Calflora. 2021. Information on wild California plants for conservation, education, and appreciation. Website <http://www.calflora.org/> [accessed June 2021].

[CNPS] California Native Plant Society, Rare Plant Program. 2022. Inventory of Rare and Endangered Plants of California (online edition, v9-01 1.5). Website <http://www.rareplants.cnps.org> [accessed July 2022].

[CCH1] Consortium of California Herbaria Portal 1. 2021. 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 June 2021].

[CCH2] Consortium of California Herbaria Portal 2. 2022. Data provided by the participants of the Consortium of California Herbaria and the California Phenology Thematic Collections Network (CAP-TCN). Regents of the University of California, Berkeley and Cal Poly, San Luis Obispo. Website <http://www.cch2.org/portal/index.php> [accessed June 2022].

[NRIS] U.S. Department of Agriculture Forest Service, Natural Resource Information System. 2020. Natural Resource Information System; Threatened, Endangered and Sensitive Plants—Invasive Plants [accessed November 2020].

[POWO] Plants of the World Online. 2022. Website <https://powo.science.kew.org/> [accessed June 2022]

Smith, A. R. 2012. *Polystichum*. In Jepson Flora Project (eds.), *Jepson eFlora*. Available at: https://ucjeps.berkeley.edu/eflora/eflora_display.php?tid=10784 [accessed June 2022].

Wagner, D. H. 1979. Systematics of *Polystichum* in western North America north of Mexico. *Pteridologia* 1: 1–64.

Wagner, D. H. 1993. *Polystichum*. Pp. 290–299 in Flora of North America Editorial Committee (eds.), *Flora of North America*, vol. 2. Oxford University Press, New York.

Personal Communications

Smith, Alan. 2021 and 2022. UC Herbarium, Curator of Pteridophytes. Email correspondence on the distribution and occurrences of *Polystichum lonchitis* in California and identification of collections made outside of the bioregions cited for this taxon in the *Jepson eFlora*. Pers. comm. 01 July 2021 and 15 June 2022.

Wagner, David. 2021 and 2022. Northwest Botanical Institute, Eugene, OR. Email correspondence on the distribution and occurrences of *Polystichum lonchitis* in California and identification of collections made outside of the bioregions cited for this taxon in the *Jepson eFlora*. Pers. comm. 02 July 2021 and 01 July 2022.

