Rare Plant Status Review: *Carex holmgreniorum*
Proposed Addition to California Rare Plant Rank 2B.2, G1G3 / S1

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Changes to the original are in blue text

Background and Taxonomy

Carex holmgreniorum Reznicek & D.F. Murray is a perennial herb in the Cyperaceae known from Mono County in California and the states of Colorado, Idaho, Nevada, and Utah (NatureServe 2025, SEINet 2025). The name *Carex holmgreniorum* was first published in 2013 for plants assigned to the name *C. parryana* Dewey var. *brevisquama* F.J. Herm., since the epithet *brevisquama* was already in use at the species level (Hermann 1968, Reznicek and Murray 2013). *Carex holmgreniorum* is also the name that can be used for plants referred to *C. aboriginum* in MacKenzie (1935, as cited by Reznicek and Murray 2013) (not *C. aboriginum* M.E. Jones). It is not included in *The Jepson Manual* (Mastrogiuseppe 1993) or the *Jepson eFlora* (Zika et al. 2015), and it is included as part of *C. parryana* in *Flora of North America* (Ball and Reznicek 2003). It is distinguished from morphologically similar taxa by having a combination of the following characters: clumped habit with short rhizomes; leaf blades 3.5–48 cm long, 1.5–4 mm wide, much shorter than the culms and more or less folded; inflorescence with lateral spikelets always present, 4–22 mm long and 4–6.8 mm wide; terminal spikelet either staminate or pistillate/staminate; pistillate scales pale reddish-brown to reddish-purple, shorter than the perigynia; perigynia obovate, green to reddish brown, 2.5–3.3 mm long and 1.5–2.3 mm wide, with well-defined cylindrical beak; and achenes 1.3–1.6 mm wide, rounded trigonous to plumply biconvex, filling the perigynia, with three styles (Reznicek and Murray 2013). In the *Jepson eFlora*, this species would be included in Group 6 of the *Carex* key (Zika et al. 2015). The specific epithet was chosen "to honor Arthur H. Holmgren and Noel and Patricia Holmgren who together have collected this species several times and whose scholarship has contributed so much to our knowledge of the Intermountain flora" (Reznicek and Murray 2013).

Ecology

In California, *C. holmgreniorum* has only been observed at Fish Slough in Mono County where it grows in a very alkaline meadow with shallow water table on silty alluvium with *Equisetum laevigatum*, *Anemopsis californica*, *Chloropyron maritimum* ssp. *canescens*, *Helianthus nuttallii*, *Lythrum californicum*, *Asclepias speciosa*, *Cirsium mohavense*, *Sporobolus hookerianus*, and *Cleomella parviflora* (Matson 2024, Matson 2024 pers. comm., CCH2 2025). The elevation of this only known location is 1275 m (4188 ft) (Matson 2024, CCH2 2025). Outside of California this species is known from "Alkaline seeps, adjacent to springs, riparian zones, moist meadows, pasture land, calcareous and often saline soils, with species such as *Juncus balticus*, *Eleocharis rostellata*, and *Schoenoplectus pungens* [at an] elevation [of] 1400–2000 m" (Reznicek and Murray 2013).

Distribution and Abundance

Carex holmgreniorum is only known from one California occurrence on BLM land at Fish Slough in the Owens Valley of Mono County which is at the eastern edge of the state. The population is in a fenced area. The first known observation at this location was made in 2013 (Matson 2024, iNaturalist 2025), and it was first collected and authoritatively identified in 2023 (Matson 2024, CCH2 2025). The 2023 herbarium collection (*Matson 2935*) is the only verified

collection from California (CCH2 2025). The population at the Fish Slough location consists of approximately 70 plants spread out over less than an acre of land (Matson 2024 pers. comm.). Sporadic surveys of similar habitats in and around this location have not turned up more populations (Matson 2024 pers. comm.).

Outside of California, this species is known from approximately 39 locations in Colorado, Idaho, Montana, Nevada, and Utah (CCH2 2025, SEINet 2025). The majority of the locations are in the states of Utah (18) and Nevada (16). The closest to the California location is ca. 140 miles to the northeast in Monitor Valley, Nye County, Nevada (*Tiehm 8941*) (CCH2 2025, SEINet 2025).

Status and Threats
NatureServe ranks *C. holmgreniorum* as G1G3 rounded to G2. Both Colorado and Nevada rank this species as S1 (Critically Imperiled), while it remains unranked in Idaho and Utah (NatureServe 2025). The single known occurrence is located in a fenced area of the Fish Slough BLM Area of Critical Environmental Concern in Mono County (Matson 2024). "This fenced area is also the site of a population of the federally- and state-endangered Owens pupfish (*Cyprinodon radiosus*) and the federally-threatened […] Fish Slough Milkvetch (*Astragalus lentiginosus* var. *piscinensis*)" (Matson 2024). The most immediate threat to *C. holmgreniorum* is hydrological alteration that would affect the shallow water table where it is found. Ground water pumping in the region has been investigated and shown to be changing the hydrology and water table of Fish Slough (Zdon et al. 2019). Changes in hydrology and general climate change are seen as the greatest threats to the integrity of the existing alkali meadow habitat at this site and other sites in the region (Matson 2024). Wildfire is a threat to this species in California. There have been at least three wildfires (Pleasant, Airport, Silver) impacting riparian corridors in this area in the last ten years (forum comment from Maria Jesus).

Summary
Based on the available information, CNPS and CNDDB propose adding *Carex holmgreniorum* to California Rare Plant Rank 2B.2 of the CNPS Inventory. If knowledge of the distribution, threats, or rarity status of *Carex holmgreniorum* changes in the future, it may be re-evaluated at that time.

Recommended Actions
CNPS: Add *Carex holmgreniorum* to CRPR 2B.2
CNDDB: Add *Carex holmgreniorum* to G1G3 / S1

Draft CNPS Inventory Record
Carex holmgreniorum Reznicek & D.F. Murray
Holmgren's sedge
Cyperaceae
USDA Plants Symbol: None
Synonym(s)/Other Name(s): None
CRPR 2B.2
Counties: Mono
States: CA, ID, NV, UT
Quad name (code): Fish Slough (3711844)
General Habitat: Playas, meadows and seeps

Microhabitat Details: At Fish Slough, found in alkaline meadow with shallow water table on silty alluvium.
Microhabitat: Alkaline
Elevation: 1275 m (4190 ft)
Life form: Perennial rhizomatous herb
Blooms: May to Sep
Notes: Discovered in CA by S. Matson in 2013. Fish Slough occurrence within fenced area of the Fish Slough BLM ACEC.
Threats: Threatened by hydrological alterations and wildfire.
Taxonomy: The name *Carex holmgreniorum* was first published in 2013 for Great Basin plants assigned to the name *C. parryana* var. *brevisquama*, since the epithet *brevisquama* was already in use at the species level. *Carex holmgreniorum* was not verified as being in California until 2023. For identification criteria, see the CNPS Status Review in Selected References.
Selected References:
- CNPS Status Review: Proposed addition to CRPR 2B.2, G1G3 / S1 (2025)
- Original Description: *Rhodora* 70: 419–421 (1968)
- Revised Nomenclature: *Journal of the Botanical Research Institute of Texas* 7: 37–51 (2013)
- Taxonomic Treatment: *Journal of the Botanical Research Institute of Texas* 7: 37–51 (2013)

Literature Cited

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[CNDDB] California Department of Fish and Wildlife, Natural Diversity Database. 2025. RareFind 5 [Internet application] and CNDDB Maps and Data, Version 5.3.0. Available at: https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data [Government Version, March 2025].

[CNPS] California Native Plant Society, Rare Plant Program. 2025. Inventory of Rare and Endangered Plants of California (online edition, v9.5). Website https://www.rareplants.cnps.org [accessed March 2025].

[CCH2] Consortium of California Herbaria Portal 2. 2025. 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 March 2025].

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Zika, P. F., A. L. Hipp, and J. Mastrogiuseppe. 2015. *Carex* (Cyperaceae). In: Jepson Flora Project (eds.), *Jepson eFlora*. Website https://ucjeps.berkeley.edu/eflora/eflora_display.php?tid=8902 [accessed March 2025].

Personal Communications

Matson, Stephen (Steve). 2024. Botanist with expertise on the flora of the eastern slope of the Sierra Nevada and Great Basin Region. Email about the discovery of *Carex holmgreniorum* in California as well as submission of Rare Plant Inventory Nomination Form. Personal communication 2 October 2024.