

Plant of the Month

Spiranthes diluvialis – Ute Ladies' tresses

Family: Orchidaceae, orchid family

Habit: plants are 20-60 cm tall; leaves linear to lanceolate or oblanceolate, 30 cm long; white flowers arranged loosely in a spike with each flower diverging at about 90 degrees from the rachis (main stalk); sepals (petal-like structures that surround the petals) distinct or united at the base, 7.5-15 mm long; petal lip 7-12 mm long.

Similar species: *Spiranthes romanzoffiana*

Habitat: Floodplains, along streams, moist meadows and swales, 4500-7000 ft. Blooms July-September.

S. diluvialis has four life stages: seedling, dormant, vegetative, and reproductive. The tiny dust-like seeds have little food storage and likely do not survive long in the soil. To circumvent this shortfall, the newly germinated seed likely develops a relationship with mycorrhizal fungi to obtain nutrients. The orchid seedling may remain subterranean for up to eight years before emerging. The rarity or absence of symbiotic soil fungi may limit the establishment of new populations of Ute Ladies' tresses. Depending on seasonal conditions, *S. diluvialis* may produce an inflorescence or overwinter as a rosette (circular arrangement of leaves at the base of a plant). The flowers entice pollinators with the subtle scent of coumarin (similar to vanilla) and nectar, which could be useful in creating pheromones. The orchid does not self-pollinate or spread through rhizomes, therefore requiring a pollen vector for reproduction.

The Ute Ladies' tresses was listed as threatened under the Endangered Species Act in 1992 when the species was only known to occur in Colorado, Nevada, and Utah. Since its listing, monitoring efforts have found the species in 5 additional states (Wyoming, Montana, Idaho, Washington, and Nebraska) and British Columbia. According to Jennifer Ackerfield (Flora of Colorado), *S. diluvialis* is found in four Colorado counties and is the only federally listed plant species in Boulder County. While the orchid has yet to be found on Boulder County Parks and Open Space property, there are two unconfirmed reports on private property along the Lefthand Creek and St Vrain Creek floodplains. The City of Boulder Open Space and Mountain Parks has monitored and managed populations along the South Boulder Creek floodplain for decades. They have worked with ag tenants by timing grazing and haying outside the flowering period.

Over its entire range, the number of documented occurrences of *S. diluvialis* is estimated at 78 populations. According to NatureServe, 81% of these populations have an estimated 1000 individuals, but only 12% are protected and considered adequately managed. Listing the orchid prompted survey



efforts and allowed entities to preserve and manage existing populations. The US Fish and Wildlife Service has introduced a bill to delist *S.diluvialis* stating,

“Our review indicates that the threats to Ute ladies'-tresses have been eliminated or reduced to the point that the species no longer meets the definition of an endangered or threatened species under the Endangered Species Act of 1973, as amended (Act).”

The habitat of *S.diluvialis* is under constant threat of development, agriculture, stream channelization, and drought, to name a few. Keeping the orchid listed as threatened would give agencies the continued support to protect crucial habitat from development, work collaboratively with land managers, and the time to monitor population stability with potential genetic bottlenecks and a warming climate. If you or anyone you know is interested in keeping Ute Ladies' tresses protected, please use this [link](#) to comment on the Federal Register **before March 10th, 2025**.

Sources:

Ackerfield, J. (2022). *Flora of Colorado*. BRIT Press, Fort Worth Botanic Garden, Botanical Research Institute of Texas.

Spiranthes diluvialis. NatureServe Explorer 2.0. (2025, January 3).

https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.129296/Spiranthes_diluvialis

St. John, L., & Ogle, D. (2009, October). *Plant Guide - Ute Ladys' Tresses*. Natural Resources Conservation Service - Document Library. https://plants.usda.gov/DocumentLibrary/plantguide/pdf/pg_spdi6.pdf

U.S Fish and Wildlife Service. (2024, February 2). *Species profile for ute ladies'-tresses (spiranthes diluvialis)*. Environmental Conservation Online System. <https://ecos.fws.gov/ecp/species/2159>



Photo by Brad Winckelmann

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Spiranthes diluvialis (left) and *Spiranthes romanzoffiana* (right) – note the loose floral arrangement of *S. diluvialis* versus the dense arrangement of flowers and the hood-like sepals of *S.romanzoffiana*.

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