

Ute Ladies'-Tresses Fact Sheet (*Spiranthes diluvialis*)



Species Description

Ute ladies'-tresses consists of a perennating underground rhizome-mycorrhizal complex and seasonal aerial shoots. The rhizome / mycorrhizal complex is thickened and tuberous. The aerial shoots are erect, sparsely glandular-pubescent, 12 to 60 cm tall. Basal leaves are narrowly linear, up to 1 cm wide and 28 cm long, and persistent at anthesis. Cauline leaves become progressively smaller up the stem. The stem grades into a sparsely pubescent spike, 3 to 15 cm long, consisting of 7 to 32 small white or ivory-colored flowers arranged in a 3-ranked spiral. Individual flowers are 7.5 to 15 mm long and faintly vanilla-scented, slightly gaping at the mouth. The sepals are separate or fused only at the base and are mostly ascending or perpendicular to the stem; the dorsal sepal forms a hood, and the lateral sepals often spread abruptly from the base of the flower. The petals are also ascending or perpendicular to the stem; the lip petal is oval to lanceolate, narrowed at the middle, and has crispy-wavy margins. Fruits are cylindrical capsules with numerous tiny, submacroscopic seeds.



Habitat Description

Ute ladies'-tresses is an obligate mesophyte, usually growing in the cobbly sand, shingly sand, gravelly sand or sandy loam of wet meadows, stream or lake margins, abandoned stream meanders, riparian sandbars and subirrigated springs and seeps. Occasionally it may grow in moist swales within *Populus angustifolia* – *Cornus sericea* woodlands, or even in irrigated pastureland. It avoids the shade of woody shrubs and trees, especially *Tamarix*-dominated sites, and prefers open, sunny forb / graminoid-dominated habitats instead. Elevational amplitude is between 4,400 and 6,810 ft amsl.

Associated species

Associated species vary with habitat type, whether riparian, lacustrine, seep, spring or subirrigated meadow. Green River populations are usually associated with *Agrostis stolonifera*, *Cornus sericea*, *Equisetum laevigatum*, various forbs and scattered stands of *Salix exigua* (Fertig *et al.*, 2005).

Similar and Related Species

Ute ladies'-tresses is most similar to hooded ladies'-tresses (*S. romanzoffiana*), from which it is an allopolyploid derivative. The easiest way to distinguish them is by the flower. Hooded ladies'-tresses has more deeply constricted, fiddle-shaped lip petals, sepals fused for at least half their length into a hood-like tube, and pubescence of short hairs along the stem and inflorescence; Ute ladies'-tresses has lip petals merely narrowed at the middle, sepals fused only at the base and only sparse pubescence. In addition, the flowers tend to be more congested on the spike of hooded ladies'-tresses, less so on the spike of Ute ladies'-tresses; ascending-appressed to the stem in hooded ladies'-tresses, more spreading in Ute ladies'-tresses; and closed in hooded ladies'-tresses, gaping-ringent in Ute ladies'-tresses. Ecologically, hooded ladies'-tresses typically occurs in wetlands from montane to timberline elevations throughout the Rocky Mountains; Ute ladies'-tresses typically occurs in lower elevations. The other polyploidy antecedent, Great Plains ladies'-tresses (*S. magnicamporum*), occurs from Nebraska eastward, and therefore does not concern us in VFO.

Phenology and Reproductive Biology

Ute ladies'-tresses flowers from late-July through August. Long-tongue bees (*Anthophora*) and bumblebees (*Bombus*) are the most important pollinators of this species (Sipes & Tepedino, 1995). Fruit matures and dehisces by September or October. Like most other orchids, the seeds are submacroscopic and wind-dispersed. Seed germination requires superficially moist soil throughout the growing season. Seed germination and seedling establishment also require symbiosis with a mycorrhizal fungus. It is believed the plant is mycorrhizae-dependent throughout all phases of its life. The orchid appears tolerant of disturbance caused by natural fluvial processes.

Current Distribution

Ute ladies'-tresses has been reported from Colorado, Idaho, Montana, Nebraska, Nevada, Utah, Washington, and Wyoming, with the greatest concentration of individuals in northeast Utah. In VFO, potential and suitable habitat for SPDI6 occurs in wetland areas throughout Daggett, Duchesne, and Uintah counties.



