

## **Appendix 4**

### **Ladies' Ute Tresses Orchid Brochure**

# WYOMING'S

## *Threatened and Endangered Plant Species*

### Ute Ladies'- Tresses Orchid



Bureau of Land Management



## UTE LADIES'- TRESSES ORCHID

Most people think of orchids as extravagantly showy and colorful flowers that grow only in tropical rain forests or a greenhouse. Surprisingly, 30 native orchid species occur in the wetland and montane forest areas of Wyoming, though most have small, drab greenish or white flowers. Wyoming's rarest orchid is the Ute ladies'-tresses orchid (*Spiranthes diluvialis*), which remained unknown in the state until 1993. B.E. Nelson, manager of the Rocky Mountain Herbarium, discovered the first population in the state in Goshen County, one year after the species was first listed as threatened under the Endangered Species Act by the U.S. Fish and Wildlife Service. At the time of listing the plant was known only from Colorado and Utah in addition to a historical record in Nevada. Since then additional populations of Ute ladies'-tresses orchid have been discovered in Converse, Laramie, and Niobrara counties in Wyoming as well as Idaho, Montana, Nebraska, Washington, and most recently in British Columbia, Canada.

### DESCRIPTION

Ute ladies'-tresses is a perennial herb with stems 5-20 inches tall arising from short, tuberous-



thickened roots. Basal leaves are linear and persist at flowering time. The flowering portion of the plant (inflorescence) is a spike 1½ - 6 inches long with numerous, small white to ivory flowers arranged in loose spirals that somewhat resemble the braids (tresses) of a woman's hair. The petals and

leaf-like sepals are separate from one another or joined only at the very base, and each flower has a characteristic violin-shaped lower lip petal.

Unlike Ute ladies'-tresses, the much more common Northern ladies'-tresses orchid (*Spiranthes romanzoffiana*) has petals and petal-like sepals joined up to half of their length, and the inflorescence is a more condensed spike. Northern ladies'-tresses is a montane species generally found at higher elevations. The resemblance of the two ladies'-tresses is not an accident; genetic studies show that Ute ladies'-tresses originated as a hybrid between *S. romanzoffiana* and another *Spiranthes* that now occurs only in the Great Plains east of Wyoming. Bog orchids also resemble ladies'-tresses, but have a tubular spur jutting out from the back of the lip petal.

### LIFE HISTORY

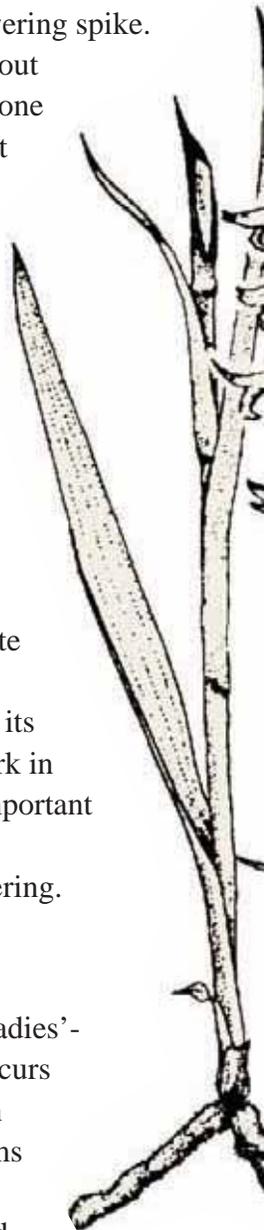
Ute ladies'-tresses orchid appears to be a long-lived perennial and related species have been documented to live over 50 years. After its microscopic seeds germinate, the roots form an

interdependent relationship with a fungus—these “fungus roots” are called mycorrhizae. The plant lives underground for several years before actually putting up leaves. In any given year, individual Ute ladies'-tresses plants may flower, remain in an inconspicuous vegetative stage with narrow leaves, or remain entirely below ground with the help of its fungus ally.

The flowers of Ute ladies'-tresses orchid appear mainly in August, opening from the bottom upward on the flowering spike. Flowering takes about two weeks for any one plant. Flowers must be pollinated to produce seeds, and bumblebees are the primary pollinators. By August, when many Wyoming plants have already flowered or are drawing water from elaborate root systems, Ute ladies'-tresses puts its mycorrhizae to work in order to provide important water and nutrients necessary for flowering.

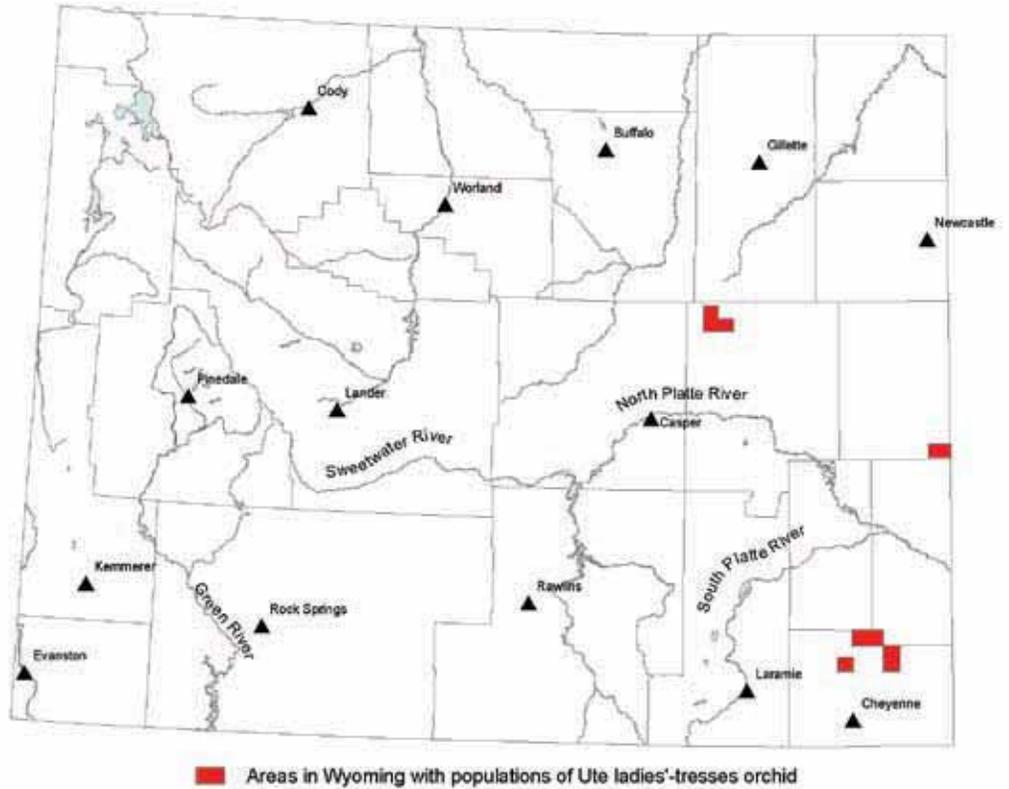
### HABITAT

In Wyoming, Ute ladies'-tresses typically occurs on eastern plains in moist valley bottoms where small perennial rivers and streams are fed by groundwater. Soils are well-drained,



derived from river deposits, and remain moist through most of the growing season. Compared to wet meadow conditions elsewhere in the area, Ute ladies'-tresses habitat is hydrologically stable, comparatively low in dissolved minerals and clay content, and high in Calcium concentrations.

The grassy vegetation of Ute ladies'-tresses habitat is relatively short but dense and is



is likely to become in danger of extinction within the foreseeable future throughout all or a significant portion of its range. Federal law prohibits the removal or destruction of threatened plants on any federal land or as a result of federal actions. As a federally-listed threatened species, the Ute ladies'-tresses orchid is also protected under BLM Special Status Species management policy. The purpose of such policy is to provide protection from potential threats such as energy development, suburban development, noxious weeds, non-selective use of herbicides, water development, and land management practices.

The BLM recognizes that plant conservation and protection are essential to sustain ecological, economic, and aesthetic values of

our public lands. The BLM, in partnership with local, state, and federal agencies, works to achieve its multiple-use mandate of public land management. For over two decades, the BLM has worked with the Wyoming Natural Diversity Database and the Rocky Mountain Herbarium at the University of Wyoming to survey and research plant species as needed to maintain Wyoming's endowment of native plants and their habitats. A rangewide status review was undertaken for Ute ladies'-tresses orchid in 2005 in partial response to a legal request to drop the species from the Endangered Species List. As of Spring 2008, a final decision on potential delisting by the U.S. Fish and Wildlife Service has not been made. Regardless of the outcome, Ute ladies'-tresses will not disappear from Wyoming anytime soon thanks to all of the conservation measures that are now in place.

Act defines a threatened species as any species which

## Suggested Reading

Fertig, W., R. Black and P. Wolken. 2005. Rangewide status review of Ute ladies'-tresses (*Spiranthes diluvialis*). Prepared for U.S. Fish & Wildlife Service and Central Utah Water Conservancy District.

Hartman, R. L. and B. E. Nelson. 1995. Final report on field inventory for Ute lady's tresses – *Spiranthes diluvialis* - in eastern Wyoming and a detailed discussion of a new locality. Rocky Mountain Herbarium, Laramie, Wyo.

Heidel, B. 2007. Survey of *Spiranthes diluvialis* (Ute ladies'-tresses) in eastern Wyoming 2005-06. Wyoming Natural Diversity Database, Laramie, Wyo.



## Citation:

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Note: New data on the biology and status of this species are being collected constantly, and parts of the information in this publication may become outdated. The fact sheet provides a general overview of the status of this species and is not intended as the sole source of species information for planning and research purposes. For additional information on this or other threatened and endangered species, or for additional copies of this publication, refer to the suggested readings or contact the botany contacts of the Bureau of Land Management in Wyoming, U.S. Fish and Wildlife Service in Wyoming, and the Wyoming Natural Diversity Database.

This Ute Ladies'-Tresses Orchid fact sheet is one in a series on Wyoming's Threatened and Endangered Plant Species published by Bureau of Land Management and the Wyoming Natural Diversity Database.

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