

**1997 UTE LADIES' TRESSES (*SPIRANTHES DILUVIALIS*) INVENTORY:  
IDAHO TRANSPORTATION DEPARTMENT, DISTRICT 5 ROAD PROJECTS**

**By**

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**October 1997**

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**Prepared for:  
Idaho Transportation Department  
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## SUMMARY

Ute ladies' tresses (*Spiranthes diluvialis*) is a rare orchid occurring in riparian zones of the Intermountain and Rocky Mountain west. It was listed as Threatened under the Endangered Species Act in 1992. Known populations in Idaho occur along the Snake River between the Henrys Fork confluence and Palisades Dam, a stretch of 49 river miles. The U.S. Fish and Wildlife Service has established a Section 7 consultation area that includes wetland and riparian habitats below 7,000 feet in 24 counties in eastern and east-central Idaho.

Here I report the results of site-specific clearances of two road improvement projects in Idaho Transportation Department District 5: U.S. 30, Alexander to Soda Springs, and U.S. 89, Montpelier to Geneva. These projects are funded by the U.S. Federal Highways Administration and require Section 7 consultation. The sites lie in Caribou and Bear Lake counties. I found no Ute ladies' tresses at either site and potential habitat was limited. This report includes the location of the searches, an ecological description of each site, and an assessment of potential habitat. The preliminary status survey report (Moseley 1997) and the updated status survey, when available, should be used to supplement this report (and *visa versa*) and provide the overall context for Ute ladies' tresses and its potential habitat in Idaho.

TABLE OF CONTENTS

Summary ..... i  
Table of Contents ..... ii  
List of Figures ..... ii  
List of Appendices ..... ii  
Introduction ..... 1  
Methods and Survey Locations ..... 2  
Results ..... 4  
    General Findings and Overall Assessment ..... 4  
    Alexander to Soda Springs ..... 4  
    Montpelier to Geneva ..... 5  
References ..... 8

LIST OF FIGURES

Figure 1. Location of projects in District 5 surveyed for Ute ladies’ tresses in 1997 ... 3

LIST OF APPENDICES

- Appendix 1. Map of segment along U.S. 30 searched for Ute ladies’ tresses in 1997.
- Appendix 2. Site Record for Soda Springs Natural Scenic Area.
- Appendix 3. Maps of wetland impact areas and mitigation sites along U.S. 89 searched for Ute ladies’ tresses in 1997.

## INTRODUCTION

Ute ladies' tresses (*Spiranthes diluvialis*) is a white-flowered orchid that occurs in low to mid-elevation wetlands and riparian zones of the Central Rockies and adjacent plains. The specific epithet, *diluvialis*, is Latin meaning "of the flood" (Sheviak 1984), which is descriptive of a majority of the species' habitat: alluvial substrates along perennial streams and rivers. Ute ladies' tresses was listed as Threatened under the Endangered Species Act (ESA) on January 17, 1992, because of its rarity, low population sizes, and threats of loss or modification of riparian habitats (England 1992). At the time of listing it was known from the Denver metropolitan area, the vicinity of Provo, Utah, and several tributaries of the Green River in eastern Utah. Several populations were known to have been extirpated. It has since been found to occur in eastern Wyoming and adjacent Nebraska, southwestern Montana, and most recently along the Snake River in eastern Idaho.

In 1995, the Section 7, Endangered Species Act, consultation guidelines for Ute ladies' tresses identified Priority Survey Areas for states containing populations, as well as adjacent states known to have potential habitat (U.S. Fish and Wildlife Service 1995). In Idaho, the Bear River and Snake River above American Falls Reservoir were identified as Category 3 watersheds, where surveys were encouraged, although populations were not known to occur there at the time. With the discovery of Idaho populations of Ute ladies' tresses in August 1996, the Section 7 consultation area was expanded to include 24 counties in eastern and east-central Idaho: Bannock, Bear Lake, Bingham, Blaine, Bonneville, Butte, Camas, Caribou, Cassia, Clark, Custer, Franklin, Fremont, Gooding, Jefferson, Jerome, Lemhi, Lincoln, Madison, Minidoka, Oneida, Power, Teton, and Twin Falls. Under these expanded guidelines, specific habitats to be looked at within these counties includes all riparian and wetland communities below 7,000 feet.

I prepared a preliminary status report for Ute ladies' tresses, summarizing our knowledge of the distribution, abundance, and conservation status of the plant in Idaho through the 1996 field season (Moseley 1997). Our knowledge was limited to a few surveys at that time, however, and it was recognized that considerably more field work needed to be done in Idaho. During 1997, federal and state agencies from throughout the "consultation area" were active in conducting intensive, project-specific inventories, as well as extensive, systematic surveys of potential habitat.

In spite of all these inventories, the known distribution of Ute ladies' tresses in Idaho is still restricted to the Snake River. Populations are scattered along 49 river miles from near the confluence of the Henrys Fork, upstream to Swan Valley, nine river miles below Palisades Dam. In Idaho, this stretch of river is known as the South Fork. A total of 1,171 (mostly flowering and fruiting plants) were observed along the river in 1997.

By May 1998, the Conservation Data Center (CDC) will prepare an updated status report for Ute ladies' tresses in Idaho, summarizing results of the 1996 and 1997 field seasons. Here I report the results of site-specific clearances of two road improvement projects in Idaho Transportation Department District 5: U.S. 30, Alexander to Soda Springs, and U.S. 89, Montpelier to Geneva.

These projects are funded by the U.S. Federal Highways Administration and require Section 7 consultation. The sites lie in Caribou and Bear Lake counties. The Montpelier to Geneva route was inventoried in 1993 for other rare plants species known to occur in the area (Moseley 1993). This report includes the location of the searches for Ute ladies' tresses and an assessment of potential habitat. The preliminary status survey report (Moseley 1997) and the updated status survey, when available, should be used to supplement this report (and *visa versa*) and provide the overall context for Ute ladies' tresses and its potential habitat in the state.

## METHODS AND SURVEY LOCATIONS

During late August, I conducted the surveys for both projects, Alexander to Soda Springs, Caribou County, and Montpelier to Geneva, Bear Lake County (Figure 1). For the Alexander to Soda Springs project, I searched the entire right-of-way along U.S. Highway 30 and along the lower part of Soda Creek, north of the highway. Along the Montpelier to Geneva stretch, I searched all the wetlands that had been delineated for the project during previous studies. During the searches, I used my knowledge of the species and its habitat in Utah and Idaho to identify and assess potential habitat. The 1996 status survey and draft recovery plan were also used as guides (U.S. Fish and Wildlife Service 1995; Moseley 1997). The projects range in distance from 55 (Alexander to Soda Springs) to 75 miles (Montpelier to Geneva) from the nearest known Ute ladies' tresses populations.

Location of the two projects are as follows:

Alexander to Soda Springs: This project involves improvements to U.S. 30 between Alexander and Soda Springs. The project area searched was approximately four miles long, beginning about 1.5 miles east of Alexander and proceeding east along the highway to the outskirts of Soda Springs at Soda Creek. The elevation is about 5,720 feet.

Montpelier to Geneva: This project involves improvements and realignments to U.S. 89 between Montpelier and Geneva. The road segment is approximately 14 miles long, with wetlands and mitigation areas scattered throughout that length. Elevations range from 6087 to 6900 feet.

Figure 1. Location of projects in District 5 surveyed for Ute ladies' tresses in 1997.

Alexander to Soda Springs

Montpelier to Geneva

## RESULTS

### General Findings and Overall Assessment

I found no Ute ladies' tresses at either project area. In general, potential habitat, as indicated by the presence of redtop (*Agrostis stolonifera*), was nonexistent or, in a few cases, limited in extent. Below is an ecological description of the two sites along with an assessment of potential habitat.

### Alexander to Soda Springs

**Description:** This stretch of highway runs more or less level and straight across the valley bottom along the north shore of Alexander Reservoir. The right-of-way is largely fill, because the existing roadbed had to be elevated above what is mostly subirrigated ground. Outside of the fill, wetlands predominate along this stretch, but to create better drainage, they had to be ditched. So, ditches lie adjacent to the fill throughout most of the length of the study area. There are a few stretches of upland vegetation. The north side of the highway is closely paralleled by Union Pacific railroad tracks for the western 2+ miles of the route. A narrow strip of mostly ditched and otherwise disturbed upland and wetland vegetation occupies this zone. A detailed description of the habitats along the highway are discussed below, beginning on the western end:

Note: Mile 0.0 = the section line between sections 8 and 9, T9S, R41E, about 1.5 miles east of Alexander. See Appendix 1 for a map indicating the segments outlined below.

1. Mile 0.0 - 0.6 - The road traverses dry pasture and farmland with no wetland habitat, except for a short, discrete stretch on the south side that abuts an open water bulrush (*Scirpus acutus*) marsh.
2. Mile 0.7 - 1.0 - A causeway across an embayment of Alexander Reservoir. Little vegetation exists here.
3. Mile 1.0 - 1.8 - From the end of the causeway to Steamboat Hill, west of the golf course, the north side of the road is bordered by a ditch between the highway fill and railroad. The ditch is wet throughout most of its length. The wetter portions having cattail (*Typha latifolia*), sandbar willow (*Salix exigua*), and beaked sedge (*Carex utriculata*). Most of it is much drier, however, being dominated by varying amounts of Baltic rush (*Juncus balticus*), tufted hairgrass (*Deschampsia cespitosa*), reed canarygrass (*Phalaris arundinacea*), clustered field sedge (*Carex praegracilis*), Kentucky bluegrass (*Poa pratensis*), mat muhly (*Muhlenbergia richardsonis*), and areas seeded with smooth brome (*Bromus inermis*). The south side is similar, except for a stand of limber pine (*Pinus flexilis*) and Rocky Mountain juniper (*Juniperus scopulorum*) near the Steamboat Hill end.

4. Mile 1.8 - 2.3 - This stretch goes from Steamboat Hill to the western boundary of the Natural Scenic Area. Vegetation along the north side of the road is similar to that described in the above section. South of the road it progresses from the dry slopes of Steamboat Hill, past an open water bulrush marsh, with a narrow fringe of Baltic rush and tufted hairgrass, to the well-manicured golf course.

5. Mile 2.3 - 3.0 - The Soda Springs Natural Scenic Area lies on both sides of the road. This unique area has unusual stands of limber pine and Rocky Mountain juniper associated with wetland communities. Two rare plants occur in the wetland also, Kelsey's phlox (*Phlox kelseyi*) and green muhly (*Muhlenbergia racemosa*). For a detailed description of the Natural Scenic Area see Appendix 2, which contains a Site Record from the CDC data base. Along the road, vegetation is dominated by Rocky Mountain juniper and limber pine in the overstory, with Kentucky bluegrass, tufted hairgrass, and Baltic rush in the understory. There is a patch of cattail where a small stream crosses the road near the golf course. There are a few scattered stands of redbtop (*Agrostis stolonifera*).

6. Mile 3.0 - 3.3 - Upland with commercial development; part of the town of Soda Springs.

7. Mile 3.3 - 3.4 and upstream for 0.3 mile along Soda Creek (between highway and railroad tracks) - The south (downstream) side of the road is either developed commercially (east side of creek) or is a thoroughly grazed pasture (west side). The segment of Soda Creek north of the road to the railroad tracks is a high quality wetland. Immediately adjacent to the creek are dense stands of beaked sedge and reed canarygrass. The gentle slopes on either side of the creek are extensive, subirrigated wetlands dominated by Baltic rush, tufted hairgrass, shrubby cinquefoil (*Potentilla fruticosa*) and an interesting and state-rare stand of the wandering spike-rush (*Eleocharis rostellata*) community. Little redbtop was seen.

**Habitat Assessment:** There are only a few scattered stands of redbtop in the study area, which is the mostly likely habitat in which to find Ute ladies tresses. Some are quite dense, but none are more than a few square yards in size. No ladies' tresses was seen during thorough searches of these patches.

### Montpelier to Geneva

**Description:** The study area lies along 14 miles of U.S. between Montpelier, in the Bear Lake Valley, and Geneva, in the Thomas Fork Valley near the Wyoming border. East from Montpelier, the road follows the narrow valley bottom of Montpelier Canyon and is immediately adjacent to or crosses the creek for several miles. The road goes over 6,922-foot Geneva Summit and wetlands occur near the road almost to the pass. On the eastern slope of the pass, the road follows an unnamed tributary of Bischoff Canyon and then crosses the floor of the Thomas Fork Valley near Geneva. Wetlands are scattered near the road in this area, although not at the same extent as in Montpelier Canyon.



Wetlands to be impacted by the proposed construction were delineated, measured, and classified prior to 1997. I used the maps prepared from that delineation as my guide for the Ute ladies' tresses survey. Proposed mitigation sites were mapped as well and they were also searched for the orchid. Each of the wetland impact areas was numbered beginning on the western end, and the descriptions below follow that identification system. Locations of the impact and mitigation areas are mapped in Appendix 3.

Area 1 and 2 (Palustrine Emergent, 0.13 acre) - Cattail stand with beaked sedge understory.

Area 2A (Palustrine Scrub Shrub, 0.48 acre) - Very dense yellow willow (*Salix lutea*), red-osier dogwood (*Cornus sericea*), and Wood's rose (*Rosa woodsii*) stand.

Area 2C (Palustrine Scrub Shrub, 0.24 acre) - Tall, dense stand of yellow willow and lesser amounts of water birch (*Betula occidentalis*), red-osier dogwood, and hawthorn (*Crataegus douglasii*), with one small opening of beaked sedge.

Area 3 (Palustrine Emergent, 0.08 acre) - Very wet stand of water birch, Booth's willow (*Salix boothii*), beaked sedge, and cattail.

Area 4, 5, and 6 (Palustrine Scrub Shrub, 0.73 acre) - Mostly dense, tall shrubs and trees in the aspen (*Populus tremuloides*)/red-osier dogwood community type. Other shrubs include Booth's willow, yellow willow, hawthorn, sandbar willow, and water birch. Some herbaceous openings of Kentucky bluegrass occur in the area.

Area 7, 8, 9, and 9A (Palustrine Scrub Shrub, 0.24 acre) - Dense shrubs dominated by Booth's willow, hawthorn, sandbar willow, and yellow willow. There are no herbaceous openings.

Area 10 and 10A (Palustrine Scrub Shrub, 0.76 acre) - Mostly a mix of tall shrubs - red-osier dogwood, hawthorn, sandbar willow, and yellow willow - with two small herbaceous openings containing small patches of redtop. Marginal potential habitat exists here.

Mitigation Area (2.4 acres) - Very dense shrub stand of red-osier dogwood with a few yellow willow, Booth's willow, and water birch stems. There are no herbaceous openings.

Area 13A and 14 (Palustrine Scrub Shrub, 0.42 acre) - Mostly stands of shrubs dominated by sandbar willow with lesser amounts of red-osier dogwood, water birch, and yellow willow. Small herbaceous openings of beaked sedge and Baltic rush occur within these stands. A very small patch of redtop occurs here. There is marginal potential habitat.

Area 16 and 16A (Palustrine Scrub Shrub, 0.60 acre) - Mostly a dense stand of Booth's willow. Herbaceous openings range from wet sites dominated by beaked sedge and woolly sedge (*Carex lanuginosa*) to drier sites dominated by Kentucky bluegrass and Canada thistle (*Cirsium arvense*).

Area 17, 18, and 19 (Palustrine Scrub Shrub, 0.32 acre and 1.6 acres) - Mostly dense Geyer's willow (*Salix geyeriana*), Booth's willow, and sandbar willow stands with dry herbaceous openings of smooth brome, Kentucky bluegrass, and Baltic rush. Small wet openings of beaked sedge, Nebraska sedge (*Carex nebrakensis*), Baltic rush, and small amounts of redtop.

Area 20 and 21 (Palustrine Scrub Shrub, 0.13 acre) - Dense Geyer's willow. No herbaceous openings are present.

Montpelier Creek Mitigation Area (3.3 acres) - An open stand of willows with many herbaceous openings between the clumps of Booth's and Geyer's willow. The openings are dominated by smooth brome, Baltic rush, beaked sedge, Kentucky bluegrass, and timothy (*Phleum pratense*). The site is heavily impacted by campers. Very little redtop occurs here.

Area 22 and 23 (Palustrine Scrub Shrub, 0.42 acre) - Adjacent to and the same community as the mitigation site (above), except with less recreational impacts.

Area 24 and 25 (Palustrine Scrub Shrub, 1.07 acres) - Dense Geyer's and Booth's willow stand with small openings of Baltic rush and beaked sedge. Very little redtop is present.

Area 26 (Palustrine Emergent, 0.34 acre) - Nebraska sedge dominates the narrow riparian zone along a small stream. The zone is 1 - 1.5 yards wide. It was so thoroughly mowed by cattle that it would be hard to see Ute ladies' tresses if it occurred there, but there appears to be very little potential habitat. It's mostly too wet. There are a few somewhat drier areas dominated by winged sedge (*Carex microptera*), Baltic rush, clustered field sedge, and redtop, which is a very minor component.

Twin Springs Creek Mitigation Area (1.1 acres) - Same as Area 26, except there are a few Geyer's willow plants.

Area 27 (Palustrine Scrub Shrub, 0.11 acre) - Mostly a dry, rocky, open aspen and chokecherry (*Prunus virginiana*) stand with a few Booth's willow around a seep (? , I guess).

Area 28 (Palustrine Scrub Shrub, 0.55 acre) - A stand of Booth's willow with a beaked sedge understory. There are a few Baltic rush patches. Little redtop is present.

Geneva Summit Mitigation Area (0.5 acre) - Herbaceous wetland with no surface water at the time of the survey. Nebraska sedge, clustered field sedge, Baltic rush, silver sagebrush (*Artemisia cana*), and Kentucky bluegrass dominate.

Area 30, 31, 33, and 34 (Palustrine Emergent and Palustrine Scrub Shrub, 0.15 acre and 0.16 acre) - Shrubby stand of Geyer's willow/beaked sedge community with big patches of Baltic rush and beaked sedge. Booth's willow and honeysuckle (*Lonicera involucrata*) are other prominent shrubs.

Area 35 and 36 (Palustrine Scrub Shrub, 0.12 acre) - Dense stand of yellow and Booth's willow surrounded by a dry stand of smooth brome.

Area 37 (Palustrine Emergent, 0.35 acre) - Dense stand of reed canarygrass with a couple of Booth's and sandbar willow stems.

Geneva Mitigation Area - Thomas Fork Creek runs through the site and is a degraded, entrenched, very low gradient stream that has very steep banks adjacent to the water. Reed canarygrass, sandbar willow, and some yellow willow line the bank. Other prominent shrubs are hawthorn, golden currant (*Ribes aureum*) and Wood's rose. The few herbaceous patches along the creek are very wet and dominated by spike-rush (*Eleocharis palustris*). The "Existing Established Wetland" at the site is a degraded sandbar willow stand (some yellow willow) with lots of weeds in the understory and in openings. The two "Create Wetlands" sites are dry areas with weeds and exotic pasture grasses.

**Habitat Assessment:** Like the Alexander to Soda Springs project area, there are only a few scattered stands of redbud between Montpelier and Geneva. Most of the wetlands are dense shrub stands, which are too shaded for the orchid. Open habitats dominated by herbaceous species are mostly too wet or too dry.

## REFERENCES

- England, J.L. 1992. Endangered and threatened wildlife and plants; Final rule to list the plant *Spiranthes diluvialis* (Ute ladies' tresses) as a Threatened species. Federal Register 57(12):2048-2054. (January 17, 1992).
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- U.S. Fish and Wildlife Service. 1995. Recommendations and guidelines for Ute ladies' tresses orchid (*Spiranthes diluvialis*) recovery and fulfilling Section 7 consultation responsibilities. Utah Field Office, U.S. Fish and Wildlife Service, Salt Lake City, UT. 7 p., plus attachments.

## APPENDIX 1

Map of segment along U.S. 30 searched for Ute ladies' tresses in 1997

NOTE: Numbered segments refer to descriptions in the text. This map is copied portions of the Alexander and Soda Springs USGS quadrangles.

## APPENDIX 2

Site Record for Soda Springs Natural Scenic Area

Idaho Conservation Data Center  
Site Basic Record

SODA SPRINGS NATURAL SCENIC AREA  
# 416

***Location***

Ecoregion Section: NORTHWEST BASIN AND RANGE SECTION (342B)  
Watershed: 16010201

County: Caribou

USGS Quad: ALEXANDER                    4211166  
                  SODA SPRINGS                4211165

LAT: 423928N S: 423913N E: 1113717W  
LONG: 1113747W N: 423944N W: 1113820W

Legal Description (township/range, section, meridian, note)

009S041E 11                    BO    N2, N2N2SE4  
009S041E 12                    BO    W2W2NW4SW4

**Directions:**

Soda Springs Natural Scenic Area is located west of downtown Soda Springs and east of the Soda Springs Golf Course, between Alexander Reservoir and the Union Pacific Railroad tracks. From town, travel W on Hwy. 30 for 0.5 mile to the historical information marker. The site is on the N and S sides of the road and extends about 1.0 mile.

***Site Design:***

Designer: Idaho Department of Transportation, 1969.

Date:

**Design Justification:**

The boundaries encompass an area of native vegetation between the Union Pacific Railroad track and Alexander Reservoir on the north and south, and Soda Springs Golf Course and Soda Springs on the west and east.

***Biological and Physical Characteristics:***

Size. Primary and Secondary Acres: 152.00

Elevation (ft). Minimum: 5700                    Maximum: 5790

**Site Description:**

The Soda Springs Natural Scenic Area is a mosaic of wetland and upland

types. Phreatophytic woodlands are dominated by *Pinus flexilis* and *Juniperus scopulorum*. Wetlands are influenced by subsurface water flows, springs, and spring channels, and consist of a repeating mosaic of several community types with *Deschampsia cespitosa* and *Potentilla fruticosa*/*D. cespitosa* having the largest aerial extent.

Key Environmental Factors:

Mineral accumulation, frost heaving.

Element Occurrences (element/size in acres):

Communities

<i>POTENTILLA FRUTICOSA/DESCHAMPSIA CESPITOSA</i>	30
<i>PHALARIS ARUNDINACEA</i>	7.5
<i>CAREX UTRICULATA</i>	7.5
<i>SPARTINA GRACILIS</i>	7.5
<i>DESCHAMPSIA CESPITOSA</i>	30
<i>CAREX SIMULATA</i>	4.5
<i>ELEOCHARIS ACICULARIS</i>	1.5
<i>JUNCUS BALTICUS</i>	7.5
<i>SCIRPUS ACUTUS</i>	7.5
<i>TYPHA LATIFOLIA</i>	1.5
<i>ELEOCHARIS ROSTELLATA</i> HERBACEOUS VEGETATION	1.5
<i>PINUS FLEXILIS-JUNIPERUS SCOPULORUM/POTENTILLA FRUTICOSA</i>	45

Rare Plants

<i>PHLOX KELSEYI</i> VAR <i>KELSEYI</i>	20
<i>MUHLENBERGIA RACEMOSA</i>	20

Biodiversity Significance: B2

The site contains a disjunct *Pinus flexilis* community type and two rare plant species: *Phlox kelseyi* var. *kelseyi* and *Muhlenbergia racemosa*.

***Protection and Stewardship:***

Designation: NATURAL AREA

Protection Comments:

The site is a designated Natural Scenic Area.

Information Needs:

Protection Urgency: P4

The site has been protected as a Natural Scenic Area under the National Highway Beautification Act.

Management Needs:

Management Urgency:

Current Landuse:

Onsite:

Offsite: The surrounding landscape is largely converted to agriculture. Water development (both surface and ground) may influence site hydrology.

Exotic Species Comments:

*Poa pratensis*, *Melilotus* sp., *Taraxacum officinale*, and *Carduus nutans* are present. Weedy taxa are generally restricted to disturbed areas and occur primarily on drier travertine flats.

Pests/Pathogens Comments:

MA Comments:

Idaho Transportation Department.

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**Record Maintenance:**

Lead Responsibility: USIDHP

Edition Date: 93-05-05 Edition Author: J. H. KALTENECKER



## APPENDIX 3

Maps of wetland impact areas and mitigation sites along U.S. 89  
searched for Ute ladies' tresses in 1997