

**1997 UTE LADIES' TRESSES (*SPIRANTHES DILUVIALIS*) INVENTORY:  
IDAHO TRANSPORTATION DEPARTMENT, DISTRICT 6 BRIDGE PROJECTS**

**By**

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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 we report the results of site-specific clearances of 13 bridge reconstruction projects in Idaho Transportation Department District 6. These projects are funded by the U.S. Federal Highways Administration or Federal Emergency Management Agency and require Section 7 consultation. The clearance sites lie in Fremont, Teton, Custer, Lemhi and Madison counties. We found no Ute ladies' tresses at any site and potential habitat was limited or nonexistent. 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.

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## 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; Provo, Utah, area; and several tributaries of the Green River in eastern Utah. Several populations were known to have been extirpated. It has since been found 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.

Moseley (1997) 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. 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 we report the results of site-specific clearances for 13 bridge reconstruction projects in Idaho Transportation Department District 6. These projects are funded by the U.S. Federal Highways Administration or the Federal Emergency Management Agency and both require Section 7 consultation. The

report includes the location of the searches 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 August and September, we visited all the proposed bridge projects at least once. A few sites were visited as many as four times. The projects and locations are listed in Table 1 and shown on Figure 1. We searched all wetland habitats within a reasonable distance up and downstream from the bridge on both sides of the river or creek, using our 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 a few hundred yards (Twin Brides) to over 130 miles (Salmon River bridge west of Clayton) from the nearest known Ute ladies' tresses populations.

Table 1. Location of bridge projects in District 6 surveyed for Ute ladies' tresses in 1997.

<i>Bridge Project Name</i>	<i>Project No.</i>	<i>Key No.</i>	<i>County</i>	<i>Highway</i>	<i>Mile Post</i>	<i>Wetland Acreage</i>	<i>Legal Description</i>	<i>Elev.</i>
Salmon River, W of Clayton	BR-3290(106)	6504	Custer	SR-75	220.6	<0.5	T11N R17E S27	5,480
E Fk Salmon River	BRF-6390(105)	6279	Custer	SR-75	226.9	<0.1	T11N R18E S22	5,380
Lemhi River	STR-6450(616)	6461	Lemhi	SR-28	130.3	<0.1	T21N R22E S24	4,180
Lemhi River	STR-6450(617)	6462	Lemhi	SR-28	128.5	<0.1	T21N R23E S29	4,260
Mulkey Slough	BRF-6450(104)	5698	Lemhi	SR-28	124.7	<0.5	T20N R23E S10	4,420
Lemhi River	BRF-6450(103)	5697	Lemhi	SR-28	122.8	<0.1	T20N R23E S24	4,500
Green Can Rd to Mesa Falls Rd (Osborne Bridge)	NH-6470(108)	6498	Fremont	US-20	378.4 to 379.8	<0.5	T12N R42E Sec 36	6,100
Ashton	NH-6470(103)	6296	Fremont	US-20	363.3 to 363.5	<0.5	T9N R42E Sec 13	5,210
Bitch Creek	STR-6804(604)	6650	Teton	SR-32	7.6-8.3	<0.5	T7N R45E Sec 18	5,950
Salem Road	BRS-6770(101) and STP-6770(101)	6277 5687	Fremont	Local Road	5.9	~2.5	T7N R40E Sec 17, 18, 19, 20	4,860
Canyon Creek	STP-6830(102)	6314	Madison	SR-33	115.1 to 115.8	<0.1	T6N R42E Sec 13	5,720
Texas Slough	BROS-3300(101)	6031	Madison	Local Road	102.5	<0.1	T5N R39E Sec 4,5	4,820
Twin Bridges	?	?	Madison and Jefferson	Local Road		~2.0	T4N R40E Sec 16, 17, 21	4,945

Figure 1. Location of bridge projects in District 6 surveyed for Ute ladies' tresses in 1997. Numbers refer to those in the Key No. column in Table 1.

6504

6279

6461

6462

5698

5697

6498

6296

6650

6277/5687

6314

6031

Twin Bridges

## RESULTS

### General Findings and Overall Assessment

We found no Ute ladies' tresses at any of the project sites. In general, potential habitat, as indicated by the presence of redtop (*Agrostis stolonifera*), was nonexistent or, in a few cases, limited in extent. It should be noted that several populations of Ute ladies' tresses were discovered on Twin Bridges Island within a few hundred yards of this bridge project. After several visits, it was determined that bridge construction itself would not impact the populations, however, moving equipment to and from the construction sites needs to be evaluated carefully as construction begins. Below is an ecological description of each site along with an assessment of potential habitat.

### Salmon River Bridge - West of Clayton

**Description:** There is a sand and gravel beach below the high water mark along the south side of the river that gently slopes towards the adjacent uplands. Sandbar willow (*Salix exigua*) is the dominant shrub along this strip both upstream and downstream of the bridge. There are also scattered patches of herbaceous vegetation, including one small area between the willows and nearby upland vegetation that supports a mix of redtop, common horsetail (*Equisetum arvense*), smooth horsetail (*E. laevigatum*), common spike-rush (*Eleocharis palustris*), and Baltic rush (*Juncus balticus*). Other portions of the beach are barren. Along the north side of the river a rocky bank rises about 3 m to an upland terrace. There are only a few scattered shrubs and forbs growing in the rocky embankment. Another segment near the bridge on the north side of the river supports a narrow riparian tangle of sandbar willow mixed with red-osier dogwood (*Cornus sericea*), Wood's rose (*Rosa woodsii*), and black cottonwood (*Populus trichocarpa*). Surveys were conducted on September 3.

**Habitat Assessment:** No Ute ladies' tresses was found. A small zone of potential habitat occurs in the redtop patch between the willows and upland vegetation. Additional patches of this kind of habitat may occur further upstream, but not near the bridge. Other beach segments appear to be underwater too long into the growing season or devoid of much herbaceous vegetation, while some portions closer to the adjacent uplands are too dry. Habitat on the north side of the river is too rocky or the vegetation is too dense.

### East Fork Salmon River Bridge

**Description:** The East Fork is entrenched approximately 10-15 m above the adjacent sagebrush-dominated uplands in the vicinity of the bridge. There is no floodplain and the narrow riparian zone is characterized by a band of the black cottonwood/red-osier dogwood c.t. An associated dense mix of shrubs includes sandbar willow, whiplash willow (*S. lasiandra*), Wood's rose, water birch (*Betula occidentalis*), chokecherry (*Prunus virginiana*), and mountain alder (*Alnus incana*). This woody riparian strip along the high water mark is less than five meters wide

near the bridge, where steep, rocky slopes rise to the adjacent upland terrace. Patches of herbaceous vegetation occur in scattered sandy deposits below the high water mark, with common spike-rush, Baltic rush, long-styled rush (*J. longistylus*), beaked sedge (*Carex utriculata*), and another sedge species all common. Surveys were conducted on September 3.

**Habitat Assessment:** No Ute ladies' tresses was found and no suitable habitat for this species was found near the bridge. The narrow cottonwood and shrub zone is too shaded or too dry and rocky, while the exposed, small sandy deposits below high water are largely too wet. Highway 75 crosses another bridge, this one over the Salmon River, about 0.1 mile upstream from the East Fork bridge. Riparian vegetation near this bridge is similar to that described above and also does not support suitable Ute ladies' tresses habitat.

#### Lemhi River Bridge at milepost 130.3

**Description:** Near the bridge there is a short (about 3 m), steep, rocky embankment above the river. The adjacent upland terrace is mostly either agricultural land or weedy. A narrow strip of riparian vegetation occurs both upstream and downstream of the bridge. It contains black cottonwood with sandbar willow. Gaps in the cottonwood cover are dominated by the sandbar willow. Wood's rose is common, but other shrubs such as red-osier dogwood are infrequent. Reed canarygrass (*Phalaris arundinacea*) is the most common graminoid. There is no floodplain in the vicinity of the bridge. Surveys were conducted on September 3.

**Habitat Assessment:** No Ute ladies' tresses was found and no suitable habitat for this species exists in the vicinity of the bridge. The narrow riparian strip is too rocky or the vegetation too thick to provide suitable habitat.

#### Lemhi River Bridge at milepost 128.5

**Description:** A low rocky embankment separates the river from the adjacent upland vegetation near the bridge. Strands of sandbar willow are associated with the embankment, which is steep in places. A black cottonwood/sandbar willow community occurs along part of the embankment on the north side of the river and extends onto a nearby bench on private land. Black cottonwood becomes more common along the other banks about 20-30 m downstream and upstream from the bridge. Reed canarygrass and several pasture grasses are common along the riparian strip. Vegetation on nearby private land is mostly weedy pasture, intermixed with several wetland patches. Surveys were conducted on September 3.

**Habitat Assessment:** No Ute ladies' tresses was found in the vicinity of the bridge. The rocky embankments do not provide suitable habitat for this species. The cottonwood woodland found on adjacent private land is too shady for Ute ladies' tresses.

### Mulkey Slough Bridge

**Description:** Near the bridge, the slough supports a riparian band that is connected to adjacent patches of wetland or grades into upland vegetation. These adjacent areas are fenced and posted. The riparian vegetation consists of a shrub mix supporting yellow willow (*Salix lutea*), Booth's willow (*Salix boothii*), sandbar willow, Wood's rose, and scattered black cottonwood and red-osier dogwood. The herbaceous layer is comprised of both native and introduced herbaceous species. Cattail (*Typha latifolia*) is also common along the slough. The highway right-of-way both north and south of the bridge is a swath of cheatgrass (*Bromus tectorum*), green brittlegrass (*Setaria viridis*), smooth brome (*Bromus inermis*), berteroa (*Berteroa incana*), chenopods and other weedy species. Sand dropseed (*Sporobolus cryptandrus*) is also common along the right-of-way. The associated borrow pits are wetter and support either mesic shrub species or dense swards of herbs such as reed canarygrass, sedges, Canada thistle (*Cirsium arvense*) and common tansy (*Tanacetum vulgare*). Surveys were conducted on September 3.

**Habitat assessment:** No Ute ladies' tresses was found in the vicinity of the bridge. Suitable habitat is basically non-existent because the slough's riparian area is too wet or shaded, the mesic herb vegetation associated with the borrow pit is too dense, and other areas near the road too dry.

### Lemhi River Bridge at milepost 122.8

**Description:** The river is bordered by a low, gentle to steep, rocky bank in the vicinity of the bridge. One riparian segment supports a black cottonwood/Wood's rose community that extends from the river onto a low bench. The other main riparian community is sandbar willow/reed canarygrass. This varies from narrow to relatively wide in places. Subirrigated borrow pit bottoms support patches of mixed mesic graminoids (common spike-rush, Baltic rush, several sedge species), including some redtop. Surveys were conducted on September 3.

**Habitat assessment:** No Ute ladies' tresses was found in the vicinity of the bridge. The cottonwood woodland is too shady, while the sandbar willow areas tend to be rocky and with relatively dense vegetation. The borrow pit bottoms below the road contain small patches of marginal potential habitat.

### Osborne Bridge

**Description:** There are three areas of wetlands along Highway 20 between the Green Canyon Road and the Mesa Falls Road. The area around Osborne Bridge, along the Henrys Fork, has a very narrow riparian zone that is mostly disturbed with steep fill slopes. Two other small drainages, both highly disturbed, cross the road between Osborne Bridge and the Mesa Falls Road. Most of the areas are vernal wet, being dry by late summer. Common spike-rush is prominent in these wetlands. One of the drainages has some water left in August, creating a narrow fringe of habitat that remains wet in late summer. The site was surveyed on August 1.

**Habitat Assessment:** No potential habitat exists near Osborne Bridge. Along the small drainage that is still wet in August, redtop occurs as a very narrow fringe in some places, but most of the coverage is a diversity of forb species. No *Spiranthes* was observed.

#### Ashton Bridge

**Description:** The Henrys Fork flows under this high bridge. The riparian area around the bridge abutments has been highly disturbed in the past from the large fill slopes needed for original bridge construction. On both the north and south banks, the riparian vegetation is narrow, mostly rocky, and weedy. The seeded, sod-forming grass, smooth brome, dominates the riparian zone on both banks. One area on the north bank is dominated by Canada goldenrod (*Solidago canadensis*) and a few mountain alder occur along the south shore. The site was visited on August 1.

**Habitat Assessment:** Redtop is present in only trace amounts. No potential habitat exists near the bridge.

#### Bitch Creek Bridge

**Description:** Bitch Creek flows under this high bridge. The riparian area around the bridge abutments has been highly disturbed in the past from the large fill slopes needed for original bridge construction. On both the north and south banks, the riparian vegetation is narrow, mostly rocky, and dominated by dense willows (*Salix exigua*, *S. boothii*, *S. lutea*, *S. drummondiana*, and *S. lasiandra*). The site was visited on August 1 and potential habitat was rechecked on Aug 24.

**Habitat Assessment:** One very small patch of suitable-looking habitat occurs on the north shore, about 50 yards downstream from the bridge. It is a narrow strip of *Salix lutea* and *S. boothii* with a moderate cover of redtop in the small openings. No *Spiranthes* was seen.

#### Salem Road Bridge

**Description:** The Henrys Fork flows under this low bridge. Much of the shore around the bridge has been rip-rapped. The southern bank has been rip-rapped 1upstream of the bridge, or is relatively dry, being dominated by aspen (*Populus tremuloides*) and Wood's rose. The northern shore has also been rip-rapped in places. Native vegetation is dominated by the black cottonwood/western snowberry (*Symphoricarpos occidentalis*) community type on higher ground and the black cottonwood/red-osier dogwood community type in wetter areas. Small stands of dense sandbar willow also occur on the north bank. The area immediately adjacent to the bridge was visited on September 11, 1997. A larger area around the bridge was also surveyed in September 1996.

**Habitat Assessment:** No potential habitat exists here. The habitats are either too disturbed, too dry, or too densely covered with shrubs.

### Canyon Creek Bridge

**Description:** Canyon Creek is a high gradient creek that flows through a deep, narrow canyon under this high bridge. The riparian zone is narrow and steep, confined to a small strip of habitat along the creek at the rocky base of the steep canyon walls. It is dominated by a dense stand of red-osier dogwood, with an open overstory of Douglas-fir (*Pseudotsuga menziesii*). The site was visited on August 1.

**Habitat Assessment:** No potential habitat exists at this site.

### Texas Slough Bridge

**Description:** Texas Slough is an old overflow channel of the Snake River, before the Snake was leveed. It is now used to carry irrigation flows at higher-than-natural rates throughout the summer and fall irrigation season. Basically, it's an irrigation ditch and the vegetation is typical of those types of habitats. Around the bridge, dense stands of beaked sedge, reed canarygrass, and cattail occur in standing water. From this there is an abrupt transition to dry ground on the slough banks. The site was visited on September 11.

**Habitat Assessment:** No potential habitat exists here.

### Twin Bridges

**Description:** The Snake River splits and flows around Twin Bridges Island with two big channels.

Vegetation around the bridge on the north channel is mostly a dense, high and dry narrowleaf cottonwood (*Populus angustifolia*) stand with no herbaceous openings or is very dense red-osier dogwood. Reed canarygrass, quackgrass (*Agropyron repens*), and Kentucky bluegrass (*Poa pratensis*) are in the understory. Dense patches of sandbar willow occur throughout the survey area. One bank is completely rip-rapped and is bordered by tennis court and lawn habitat.

Along the south channel, vegetation in the vicinity of the bridge is dominated by narrowleaf cottonwood. Dense stands of red-osier dogwood occur in the understory on the north side of the channel and the dry-indicator, western snowberry, occurs beneath the cottonwood on the south side. A long stretch of rip-rap also occurs on the south side.

The downstream end of the island that is immediately upstream from the southern bridge is dominated by an impressive stand of reed canarygrass, with a small area of higher ground dominated by narrowleaf cottonwood and red-osier dogwood.

Visits were made to Twin Bridges Island by CDC staff on August 18, 22, 25, and September 11.

**Habitat Assessment:** No potential habitat exists in the immediate vicinity of the bridges. The habitats are either too dry or too shrubby. Almost all of the herbaceous openings (the most likely place to find Ute ladies' tresses) are dominated by thick monocultures of reed canarygrass. As mentioned earlier, several populations of Ute ladies' tresses were discovered on Twin Bridges Island within a few hundred yards of the bridge projects. After several visits, it was determined that bridge construction itself would not impact the populations, however, moving equipment to and from the construction sites needs to be evaluated carefully as construction begins. Mapped locations and habitat descriptions for these populations have been forwarded to the Idaho Transportation Department.

## REFERENCES

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