FIELD INVESTIGATION FOR *SPIRANTHES DILUVIALIS* (UTE LADIES TRESSES) ON BLM LANDS MANAGED BY THE SHOSHONE FIELD OFFICE, SOUTH-CENTRAL IDAHO

by

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December 2000

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Upper Snake River District BLM, Shoshone F.O.
Idaho Department of Fish and Game
Task Order No. DAF000028

ABSTRACT

Ute ladies tresses (*Spiranthes diluvialis*) is a white-flowered orchid that was listed as Threatened under the Endangered Species Act in 1992. Throughout its range, it occurs in various low elevation wetland and riparian zone habitats. In Idaho, Ute ladies tresses is known from the Snake River floodplain in the eastern part of the state, in Jefferson, Madison, and Bonneville counties. No additional populations have been discovered in Idaho despite extensive surveys throughout the state over the past several years. However, the BLM's Shoshone Field Office area in south-central Idaho was one place in Idaho where there had been little Ute ladies tresses survey work. To help determine if this species occurred on lands they administer, I conducted a field investigation at selected wetland and riparian habitats within the Shoshone Field Office area during late summer 2000. Portions of 16 rivers, creeks, lakes, and reservoirs were searched, nearly all of which are part of the Big Wood River basin. The surveys covered approximately 20 linear miles of riparian and wetland habitat. I did not find any Ute ladies tresses during the field investigation. Potential habitat was absent or very limited in extent at all of the survey areas. At best, a few areas supported small scattered patches of marginal potential habitat.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

INTRODUCTION

Ute ladies tresses (*Spiranthes diluvialis*) is a white-flowered orchid that was listed as Threatened under the Endangered Species Act in 1992. It was not known to occur in Idaho until August, 1996, when a population was discovered along the Snake River near Heise (Moseley 1997). It is now known to occur along the Snake River floodplain in the eastern part of the state, in Jefferson, Madison, and Bonneville counties, where occurrences are scattered along approximately 49 river miles from near the confluence of the Henrys Fork, upriver to the Swan Valley area (Moseley 2000).

Ute ladies tresses is a wetland species restricted to various riparian zone and wet meadow habitats. Its habitat is often inundated early in the growing season, gradually draining as the summer progresses. Groundwater is usually high enough to keep surface or subsurface soils moist throughout the growing season. It does not occur in standing water habitats, which in southern Idaho are usually dominated by common spike-rush (*Eleocharis palustris*), or one or more species of sedge (*Carex* spp). Nor does Ute ladies tresses occur on riparian benches or other mesic habitats where the hydraulic lift is insufficient to keep the near-surface soils moist. The herbaceous layer in these drier habitats is often dominated by Kentucky bluegrass (*Poa pratensis*). Throughout the range of Ute ladies tresses, redtop (*Agrostis stolonifera*) is a common associate of the orchid. This distinctive-looking grass species turns out to be the best indicator of ideal microhydrologic conditions for Ute ladies tresses in Idaho (Moseley 1998).

Over the past few years, extensive field surveys have been conducted for Ute ladies tresses throughout much of Idaho. Despite these efforts, no additional populations have been discovered (Moseley 1999). The BLM's Shoshone Field Office area in south-central Idaho is one part of the state that has not received much attention concerning field surveys for Ute ladies tresses. Recognizing this information gap, the Bureau of Land Management (BLM) and the Idaho Conservation Data Center entered into a Challenge Cost-share agreement to conduct a field investigation for Ute ladies tresses on lands administered by the Shoshone Field Office. This report summarizes the results of this project.

METHODS

I conducted a survey for Ute ladies tresses at selected wetland and riparian habitats on the BLM's Shoshone Field Office area in south-central Idaho between August 8 and September 8, 2000 (Figure 1). Prior to initiating field work, I met with Paul McClain at the BLM's Shoshone Field Office to help select and prioritize areas meriting field investigation. A couple of other people familiar with the Shoshone area suggested a few additional areas for investigation. Survey sites were selected based on the occurrence of known or suspected potential Ute ladies tresses habitat located on BLM land within the Shoshone Field Office area. In nearly all cases the target areas were limited in extent.

Portions of 16 rivers, creeks, lakes, and reservoirs were searched, nearly all of which are part of the Big Wood River basin (Table 1). The surveys covered approximately 20 linear miles of riparian and wetland habitat, and survey segments ranged from 0.1 to about 5 miles in length. Most of the areas I looked at were between 4,500 and 5,500 feet elevation, but ranged from about 3,200 at Blue Lakes near Twin Falls, to about 6,100 feet along the East Fork Wood River near Bellevue. The areas I surveyed were delineated on USGS topographic maps (Appendix 1).

Figure 1.

At each target area I searched all potential Ute ladies tresses habitat. Many areas with marginal or poor habitat were searched as well. My assessment of suitable habitat was based on personal knowledge of Ute ladies tresses and its habitat in other parts of Idaho, and on information available in various reference sources (e.g., Heidel 1998; Moseley 1998; U.S. Fish and Wildlife Service 1998). At each survey area I recorded the general vegetation and assessed habitat suitability for Ute ladies tresses. If any Ute ladies tresses was found my plan was to delineate the extent of the population, verify its location using GPS, estimate the number of plants, characterize the habitat, assess threats, and note management uses and potential conservation actions.

Table 1. Ute ladies tresses survey sites.

Survey area	Survey extent (miles)	Location	USGS 7'5 topographic quad.
Wood River Valley area			
Big Wood River – North of Ketchum	1.0	T5N R17E sec 36	Griffin Butte
Big Wood River – Ketchum	0.4	T4N R17E sec 12	Griffin Butte
Big Wood River – South of Bellevue	0.2	T1N R18E sec 12	Bellevue
Big Wood River – Mahoney Flat	0.4	T1N R18E sec 20, 21	Magic Reservoir East
Mammoth Gulch	0.2	T2N R18E sec 27	Bellevue
East Fork Wood River	0.3	T4N R19E sec 31	Hyndman Peak
Little Wood River area			
Lower Silver Creek	0.6	T2S R21E sec 18	Pagari Well
Little Wood River - Tikura	2.4	T3S R20E sec 1,12,13,14,23	Tikura
Little Wood River – Pagari	2.5	T3S R20E sec 34; T4S R20E sec 3, 9	Pagari
Little Wood River – N. of Reservoir	0.2	T2N R20E sec 22	Little Wood River Res.
Friedman Creek	0.7	T2N R21E sec 12; R22E sec 7	Muldoon
Mount Bennett Hills area			
Schooler Creek	0.2	T3S R15E sec 9	McHan Reservoir
McKinney Creek	1.0	T2S R15E sec 31	McHan Reservoir
Thorn Creek – Downstream of Res.	0.5	T3S R16E sec 6	Thorn Creek Reservoir
Thorn Creek – Upstream of Res.	0.7	T2S R16E sec 30, 31	Thorn Creek Reservoir
Summit Reservoir	0.2	T2S R17E sec 18	Summit Reservoir
Spring Creek Reservoir	1.0	T2S R15E sec 11	Spring Creek Reservoir
Tom Gooding Lake	0.1	T4S R17E sec 6	Mammoth Cave
Camas Prairie area			
Camas Creek	5.0	T1S R16E sec 13,14,15,16,17 T1S R17E sec 18	Macon; Magic Reservoir West
Lava Creek	1.1	T1S R17E sec 32, 33	Magic Reservoir West
Wild Horse Creek	1.2	T1S R11E sec 17, 18	High Prairie
Twin Falls area			
Blue Lakes	0.7	T9S R17E sec 28	Twin Falls

RESULTS

I did not find any Ute ladies tresses during my field investigation. Potential habitat was absent or very limited in extent at all of the survey areas. At best, a few areas supported small scattered patches of marginal potential habitat. The nearest known population of Ute ladies tresses

occurs approximately 100 miles east of the study area, along the Snake River, north of Idaho Falls. There is very little habitat comparable to this section of the Snake River in south-central Idaho, especially on lands managed by the BLM. Based on results of this field investigation it seems unlikely that Ute ladies tresses occurs anywhere on land managed by the Shoshone Field Office.

A population of giant helleborine (*Epipactis gigantea*) at Blue Lakes near Twin Falls was the only orchid I saw at any of the survey areas. Hooded ladies tresses (*Spiranthes romanzoffiana*) is a widespread species known from the mountains surrounding the project study area. It looks similar to Ute ladies tresses, but was not encountered during the field investigation. At a few places identifying the main graminoids and searching for Ute ladies tresses was hindered by the effects of recent livestock grazing. A grazed Ute ladies tresses plant would be impossible to see or distinguish.

The following section provides a general description of the vegetation and an assessment of potential Ute ladies tresses habitat for each survey area (see Table 1 for list of survey areas). Information concerning noxious weeds is also included in the descriptions. Selected noxious weed populations have been mapped (Appendix 2) in hopes of expediting control measures.

Big Wood River area

Big Wood River – North of Ketchum (Appendix 1, Map 1)
Description: Riparian floodplain, the upstream portion dominated by black cottonwood (*Populus trichocarpa*), with thinleaf alder (*Alnus incana*) and patches of aspen (*Populus tremuloides*), a mixed shrub understory, and a generally well-developed herbaceous component. Common shrubs included red-osier dogwood (*Cornus sericia*), Wood's rose, (*Rosa woodsii*) and golden currant (*Ribes aureum*). Spotted knapweed (*Centaurea maculosa*) was common on the otherwise largely barren gravel bars. Patches of Canada thistle (*Cirsium arvense*) also occurred in the area. Beginning about 0.2 mile downstream from Lake Creek the riparian zone narrowed and consisted of little more than a thin band of black cottonwoods.

Habitat assessment: A few scattered, small patches of redtop were observed, but they were always beneath at least a partial overstory canopy. At best, these areas could be considered marginal Ute ladies tresses habitat. Habitat conditions varied along the floodplain, but were either too shady, dry, wet, or disturbed for Ute ladies tresses.

Big Wood River – Ketchum (Appendix 1, Map 1)
Description: A low floodplain terrace above the eastern bank supported black cottonwood with a mix of shrub and herbaceous species. Reed canarygrass (*Phalaris arundinacea*) dominated the low-lying spots, and other exotic grasses were also common. Conifer forest vegetation occurred on the terrace above the river's steep western bank. Spotted knapweed was common on the gravel bars.

Habitat assessment: A couple of small swaths of redtop provided very limited and very marginal Ute ladies tresses habitat. The great majority of the area was too shaded and/or too dry to be considered potential habitat.

Big Wood River – South of Bellevue (Appendix 1, Map 2)
Description: Floodplain riparian habitat dominated by a black cottonwood forest that comes right up to the river's edge along most of this stretch. The upstream portion of the stand was younger than the downstream section of the parcel. A thick understory of red-osier dogwood, willows

(*Salix* spp.), and other shrubs occurred in most places. Dense thickets of sandbar willow (*Salix exigua*) were also present in the floodplain.

Habitat assessment: The lowest floodplain areas were too densely vegetated and shaded, while the slightly higher benches were too dry, as well as generally being too shaded for Ute ladies tresses.

Big Wood River – Mahoney Flat (Appendix 1, Map 3)
Description: A relatively broad floodplain supporting a black cottonwood riparian forest mixed with stands of whiplash willow (*Salix lasiandra*), sandbar willow, and scattered graminoid-dominated openings. Red-osier dogwood dominated the shrub understory in many places. The stream channel had recently deposited cobble/sand bars and islands with scattered graminoids and some cottonwood and willow establishment.

Habitat assessment: A few small patches of marginal potential habitat.

Mammoth Gulch (Appendix 1, Map 2)
Description: I was unable to obtain permission to cross private land to access the BLM parcel at the mouth of Mammoth Gulch, near the Big Wood River. As a result, no direct survey was done for this area. Viewed from a distance, the riparian vegetation around the mouth of the gulch appeared to be a thick canopy of black cottonwood, along with willows and other deciduous shrubs.

Habitat assessment: No potential Ute ladies tresses habitat was seen from vantage points east of the gulch.

East Fork Wood River (Appendix 1, Map 4)
Description: A narrow band of riparian vegetation averaging less than 30 m wide that abruptly gives way to upland sagebrush habitat on the low bench above the river. The riparian zone had a Geyer's willow (*Salix geyeriana*)/mesic graminoid plant community. Booth's willow (Salix boothii), thinleaf alder, and Wood's rose were other common shrubs, while redtop, Kentucky bluegrass, timothy (*Phleum pratense*), smooth brome (*Bromus inermis*) and wildrye (*Elymus* spp.) dominated the herb layer.

Habitat assessment: The few small patches of redtop really did not provide suitable habitat for Ute ladies tresses. Other openings in the willow matrix were too dry. In addition, the orchid was not observed in a mesic meadow on nearby private land.

Little Wood River area

Lower Silver Creek (Appendix 1, Map 5)
Description: A narrow greenline averaging less than 2 m wide and strongly dominated by reed canarygrass characterized the streamside vegetation. Other graminoids such as Baltic rush (*Juncus balticus*), Nebraska sedge (*Carex nebrascensis*), common spike-rush, and redtop were intermixed in places or formed occasional small patches. Various forb species were also intermixed, the most common probably being smooth goldenrod (*Solidago gigantea*). A few scattered water birch (*Betula occidentalis*), Wood's rose, red-osier dogwood, and whiplash willow dotted the streambank too. The well-developed aquatic vegetation was dominated by fennel-leaved pondweed (*Potamogeton pectinatus*), coontail (*Ceratophyllum demersum*), and Canada waterweed (*Elodea canadensis*). A narrow band of Kentucky bluegrass separated the

greenline from the adjacent sagebrush habitat along much of the creek. Canada thistle, bull thistle (*Cirsium vulgare*), and some spotted knapweed occurred along or near the creek.

Habitat assessment: A few, tiny, subirrigated points contained a mix of graminoids that included redtop. However, these areas were so limited in extent it would be a big stretch to consider them potential habitat for Ute ladies tresses.

Little Wood River – Tikura (Appendix 1, Map 6)
Description: I surveyed a series of streamside stretches beginning at Preacher Bridge and extending downstream for approximately four miles. Areas between the sections directly searched were viewed from vantage points and contained vegetation patterns identical to segments I directly surveyed. A near monoculture of reed canarygrass dominated the narrow greenline along much of the river. Other graminoids such as Baltic rush, redtop, common spike-rush, hardstem bulrush (*Scirpus acutus*), Nebraska sedge, and/or wooly sedge (*Carex lanuginosa*) occasionally dominated short sections of greenline. Many of the same forbs observed along lower Silver Creek also occurred here, with smooth horsetail (*Equisetum laevigatum*) being locally common in places. Water birch, Wood's rose, yellow willow (*Salix lutea*), and sandbar willow were uncommon along this stretch, except towards the downstream end where a few thickets of sandbar willow occurred. Overall, the greenline averaged less than 3 m wide, although it was wider in some places. The greenline quickly gives way to upland sagebrush habitat. Colonies of whitetop (*Cardaria draba*) and Russian knapweed (*Centaurea repens*) were observed in a couple of places (see Appendix 2, Map 1). I strongly recommend control measures while these colonies are still small. Patches of Canada thistle and widely scattered spotted knapweed plants also occurred along this segment. I also observed a solitary rush skeleton weed (*Chondrilla juncea*) plant in the adjacent uplands.

Habitat assessment: No suitable habitat was observed. The occasional narrow strips of redtop were almost always less than 1 m wide.

Little Wood River – Pagari (Appendix 1, Map 7)
Description: Beginning from near Pagari Bridge, I surveyed most of the area downstream for about 3 miles, to Jim Brown Bridge. Like further upstream, the riparian vegetation along this segment was largely dominated by a narrow band of reed canarygrass. Small patches of hardstem bulrush or other graminoids occasionally interupted this dominance. Scattered patches of sandbar willow, one stand of a few decadent cottonwood trees, and individual water birch or other shrubs helped to add a little structural diversity to the vegetation. Diffuse knapweed (*Centaurea diffusa*) was abundant in the adjacent sandy uplands. A disturbed area directly across the river from the one black cottonwood patch had three knapweed species – diffuse, spotted, and Russian (see Appendix 2, Map 2).

Habitat assessment: I found one relatively large point bar supporting a mix of mesic graminoids, including redtop that could be considered potential habitat for Ute ladies tresses. However, the orchid did not occur there.

Little Wood River – Upstream of Little Wood River Reservoir (Appendix 1, Map 8)
Description: I surveyed a small area along the river near a primitive BLM campground site. Part of the area had a mature stand of black cottonwood. Other parts supported strands of willow and small cottonwoods with a mesic graminoid understory, or mesic graminoid openings. Redtop was a common component of the graminoid mix in some places. Diffuse knapweed was established on open cobble and gravel bars and a large band of sheep were grazing in the area.

Habitat assessment: A few small patches of marginal potential Ute ladies tresses habitat occurred in this area. However, this area receives quite a bit of disturbance and no orchid plants were found.

Friedman Creek (Appendix 1, Map 9)
Description: The riparian vegetation was largely a thick ribbon of Geyer's and Booth's willow, with an understory of mixed mesic graminoids or Kentucky bluegrass. Thinleaf alder and whiplash willow were also important contributors to the overstory, and Wood's rose and yellow currant were common understory shrubs. A few mesic graminoid openings that included some redtop in the mix were scattered along the creek. The riparian area was heavily utilized by cattle and nearly all of the herbaceous vegetation was trampled or grazed. Old and relatively recent beaver activity was evident along the creek.

Habitat assessment: No potential Ute ladies tresses habitat.

Mount Bennett Hills area

Schooler Creek (Appendix 1, Map 10)
Description: Wet meadow complex supporting a mosaic of Nebraska sedge, Baltic rush, common cattail (*Typha latifolia*), and sandbar willow community types. Common associates include water-hemlock (*Cicuta douglasii*), dense spike-primrose (*Epilobium densiflora*), smooth willow-herb (*Epilobium glaberrimum*), field mint (*Mentha arvensis*), common spike-rush, bluegrass (*Poa* spp.), and beaked sedge (*Carex utriculata*). The wetland was more confined to along the creek further downstream from the main road. Dense to moderately dense patches of Canada thistle were scattered throughout the area. Diffuse knapweed was common along the roadway and also intermixed with the surrounding upland vegetation.

Habitat assessment: No potential Ute ladies tresses habitat.

McKinney Creek (Appendix 1, Map 11)
Description: The upstream end of the survey area contained a large subirrigated meadow dominated by a mix of Nebraska sedge and baltic rush, with a band of Geyer's willow along the flowing creek. Another similar, relatively large wet meadow was located near the downstream end of the survey area. In between the riparian zone was much more narrow, varying from only about 2 to 15 m wide. The same two graminoids continued to be the most common herbaceous species along the creek. Scattered Geyer's willow or an occasional whiplash willow also lined the creek. Cattle were present in the area during my survey and had grazed nearly every blade of forage to a nub.

Habitat assessment: No potential Ute ladies tresses habitat.

Thorn Creek – Downstream from Reservoir (Appendix 1, Map 12)
Description: Downstream from Thorn Creek Reservoir the very slow-moving creek supported a greenline of mixed mesic graminoid species. The riparian vegetation was about 10 m wide immediately down from the dam, then averaged 3 - 6 m wide in most places until the creek became more entrenched less than 0.5 mile downstream from the dam. At this point the greenline narrowed to about 1 m wide on either side. The mix of graminoids included Nebraska sedge, short-beaked sedge (*Carex simulata*), clustered field sedge (*Carex praegracilis*), common spike-rush, Baltic rush, dagger-leaved rush (*Juncus ensifolius*), redtop, meadow barley (*Hordeum brachyantherum*), bentgrass (*Agrostis* spp.), and a few other grasses. Of these, Nebraska sedge was probably the most consistent species present. Common forbs included

cinquefoil (*Potentilla gracilis*) and smooth willow-herb, while individual or small clumps of willow (sandbar, whiplash, and yellow willow) were widely scattered along the creek. Canada thistle was common on disturbed banks and diffuse knapweed occurred along the roadway near the dam.

Habitat assessment: Judging strictly by the vegetation composition, there were a few small areas of potential Ute ladies tresses habitat. However, in the context of the associated landscape and hydrology I judged there was no potential habitat.

Thorn Creek – Upstream from Reservoir (Appendix 1, Map 12)
Description: The Thorn Creek channel supported a narrow dark green strip dominated by Nebraska sedge and common spike-rush. A fairly extensive subirrigated mesic meadow covered much of the contiguous bottomland, averaging between about 30 and 50 m wide. The Baltic rush community type was widespread in the bottoms, but a variable mix of other mesic graminoids including Nebraska sedge, short-beaked sedge, clustered field sedge, Kentucky bluegrass, meadow barley, and redtop was even more common. Stands of silver sagebrush (*Artemisia cana*) were also present in the bottoms. Cattle were grazing the meadow during my visit. Diffuse knapweed has established on the dirt two-track road running along the edge of the meadow.

Habitat assessment: No potential Ute ladies tresses habitat.

Summit Reservoir (Appendix 1, Map 13)
Description: At the time of my visit, the reservoir was empty except for some small areas with water near the dam. The area around the reservoir was pulverized by cattle trampling, and because the grassy vegetation had all been grazed to the ground, I was unable to identify the graminoid species present with any certainty. There were also some silver sagebrush patches in the general area.

Habitat assessment: No potential Ute ladies tresses habitat.

Spring Creek Reservoir (Appendix 1, Map 14)
Description: The reservoir, which was still nearly full during the time of my survey has a shoreline surrounded by a monoculture of common spike-rush. The width of the common spike-rush band varied, but was over 50 m at its widest points. The aquatic species Richardson's pondweed (*Potamogeton richardsonii*) and lesser bladderwort (*Utricularia minor*) were abundant in shallow water near the shore. A wet area just downstream from the dam had a mix of common spike-rush, Nebraska sedge, Baltic rush and some sandbar willow.

Habitat assessment: No potential Ute ladies tresses habitat.

Tom Gooding Lake (Appendix 1, Map 15)
Description: A small ephemeral lake that was dry with a cracked mud surface at the time of my survey. The lake has an interesting concentric zonal plant distribution pattern related to how long and often standing water is present. A dried patch of narrowleaf water-plantain (*Alisma gramineum*) was located in the center of the bullseye, followed by a ring of common cattail, and then a ring of common spike-rush that graded into a band of common spike-rush mixed with what appeared to be prickly lettuce (*Lactuca serriola*). This outer part of the "lake" was completely surrounded by a wide ring of threetip sagebrush (*Artemisia tripartita*), which in turn eventually gives way to more upland big sagebrush vegetation.

Habitat assessment: No potential Ute ladies tresses habitat.

Camas Prairie area

Camas Creek (Appendix 1, Maps 16 and 17)
Description: Camas Creek flows through a small canyon lined by steep basalt cliffs or rubble walls over 100 feet high in places. The creek is influenced by beaver activity, and characterized by a series of wide, slow-moving, ponded stretches connected by narrower, usually faster-flowing reaches. Local changes in channel and bank morphology, hydrology, substrate material, disturbance regime, and perhaps other factors affect the extent and distribution patterns of the various riparian plant communities scattered along the creek.

The riparian vegetation was most consistently represented by the sandbar willow/reed canarygrass community type, although in many places this was replaced by a sandbar willow/red-osier dogwood community or simply extensive swaths of reed canarygrass. Stabilized rockfields along the lower slopes just up from the willow zone commonly supported a thicket of red-osier dogwood and Wood's rose. Other shrubs such as golden currant, chokecherry (*Prunus virginiana*), and black hawthorne (*Crataegus douglasii*) were much less common. Some of the low-lying point bars contained a mix of mesic graminoids such as common threesquare (*Scirpus pungens*), Nebraska sedge, redtop, common spike-rush, and reed canarygrass, along with intermixed willows (mainly sandbar and yellow willow). A narrow (usually less than 2 m wide) strip of common spike-rush lined many segments of the watercourse below the high water mark. Cobble bars often contained open sandbar willow- or Louisiana sage- (*Artemisia ludoviciana*) dominated vegetation. Cocklebur (*Xanthium strumarium*), common dogbane (*Apocynum cannabinum*), mat amaranth (*Amaranthus blitoides*), and sandbar willow were probably the most common species found on the sandbars where the vegetation tended to be very open. Some other common forbs along the riparian corridor included western goldenrod (*Euthamia occidentalis*), aster (*Aster ascendens*), and water parsnip (*Sium suave*).

The BLM is considering special management designation for part of Camas Creek. To help document the riparian flora I began a checklist of vascular plants occurring along the creek. This beginning list contains over 60 species (Appendix 3). Several of the species on this list are weeds, including three - diffuse knapweed, leafy spurge (*Euphorbia esula*), and hoary whitetop that are considered noxious weeds in Idaho. I mapped locations where I observed these three species within the survey area (see Appendix 2, Maps 3 and 4). They were not abundant or too widespread in the canyon, but prompt control is recommended before they seriously impact the area's resource values.

Habitat assessment: The best potential habitat for Ute ladies tresses was located from the mouth of Willow Creek, extending downstream for about another 0.7 mile. The low bars along this stretch supported a narrow, but extensive band of mixed mesic graminoids. Redtop occurred at low to moderate density within this graminoid mix. This was probably the most suitable-looking orchid habitat I encountered during my entire field investigation. Similar habitats larger than a small patch were rare elsewhere along Camas Creek.

Lava Creek (Appendix 1, Map 18)
Description: An ephemeral watercourse that did not have any surface flow at the time of my survey. The spring at the upstream end of the survey area had a Baltic rush community type with a patch of common cattail in the center. The fence enclosing the spring needs some repair. A silver sagebrush/Nevada bluegrass (*Poa nevadensis*) community type covered much of the bottoms downstream from the spring area. From the spring, downstream for about 0.5 mile, to

near where it crosses the abandoned railroad line, the rocky bed of Lava Creek contained a mix of mesic graminoids in most places. Common species included common spike-rush, Baltic rush, Nevada bluegrass, and mat muhly (*Muhlenbergia richardsonis*). Downstream from the railroad crossing the creek becomes more entrenched and the vegetation dominated by sandbar - whiplash willow/ mesic graminoids. Beaver pools, some still holding water, were scattered throughout this stretch. Nebraska sedge, Baltic sedge, meadow barley, mat muhly, and Kentucky bluegrass were all common, along with beaked sedge in the wettest spots. Cattle graze this riparian zone pretty hard. Another spring exclosure about 1 acre in size, located south of Water Cress Spring was also searched. This wet area contained a mesic graminoid mix dominated by Nebraska sedge and a band of willows. Diffuse knapweed was abundant along the old railroad bed, which appeared to be one of the main routes this noxious weed was introduced and subsequently spread in the area.

Habitat assessment: No potential Ute ladies tresses habitat.

Wild Horse Creek (Appendix 1, Map 19)
Description: The creek was lined by a graminoid-dominated greenline varying from about 2 to 10 m wide in the upstream half of the survey area, but narrowing to less than 2 m wide in most places further downstream. Common species included Nebraska sedge, Baltic rush, redtop, meadow barley, annual hairgrass (*Deschampsia danthoniodes*), timothy, and Kentucky bluegrass. Beaked sedge and short-beaked sedge were present in the wettest sites, while clustered field sedge was common up from the wet greenline. Willows were rare, and the most common forb was cluster tarweed (*Madia glomerata*). Silver sagebrush was common near the creek in the eastern part of the survey area, and this species covered the large flats south of the road in section 17. The creek channel consisted of a
series of stagnant pools separated by stretches of dry or wet mud. Livestock damage along the streambank was evident in many areas, especially the eastern half of section 17, where bank sloughing and raw banks were common. It looked like some bank healing was beginning in the western part of this section.

Habitat assessment: Small sections of greenline in the upstream portion of the survey area may be marginally suitable for Ute ladies tresses. Realistically however, potential habitat for this species was absent.

Twin Falls area

Blue Lakes (Appendix 1, Map 20)
Description: Blue Lakes was rimmed by a narrow band of wetland vegetation varying from 2 to 10 m wide in most places. The downstream (south) end of the lake supported a mix of Lombard poplar (*Populus nigra*), Russian olive (*Elaeagnus angustifolia*), and Mahaleb cherry (*Prunus mahaleb*) trees. Hardstem bulrush or common cattail communities were scattered around the lake, especially the lower half. The upper lake had much less woody vegetation and was largely dominated by reed canarygrass and stinging nettle (*Urtica dioica*). Other areas had a few scattered Russian olive trees and a hodgepodge of herbaceous species, some of the more common ones being stinging nettle, Eaton's aster (*Aster eatonii*), catnip (*Nepeta cataria*), western goldenrod, Canada goldenrod (*Solidago canadensis*), and Canada thistle. A new population of giant helleborine, a BLM Sensitive plant species, was discovered near the footbridge located near the center of the lake.

A little north of Blue Lakes, basalt cliffs rise above Warm Spring. This small wetland is comprised of a pond ringed with common cattail and a mix of many of the same herbaceous

species seen at Blue Lakes. I also searched Alpheus Springs south of Blue Lakes. Russian olive, Mahaleb cherry, water birch and thick herbaceous patches line this area. Stinging nettle, yellow monkeyflower (*Mimulus guttatus*), watercress (*Rorippa nasturium-aquaticum*), and water-hemlock were all locally abundant.

Habitat assessment: No potential Ute ladies tresses habitat.

DISCUSSION

Most of the areas I surveyed were on BLM lands, however, a few areas included were partly or exclusively on state land. A few low priority targeted areas were not surveyed, they were:

1. The Thorns – a small spring area located about 13 miles northwest of Shoshone. Difficult access was the primary reason I did not visit this area.

2. Big Wood River northwest of Shoshone – a segment of the Big Wood River about five miles northwest of Shoshone passes through BLM land. I inadvertently missed putting this segment on my list of survey areas and therefore forgot to do it. I did not realize this omission until writing this report.

3. The Little Wood River in the vicinity of Richfield - I searched much of the Little Wood River in the Tikura and Pagari areas and realized there was no real suitable habitat for Ute ladies tresses along the river. Habitat conditions seemed the same further downstream, north of Richfield, and not worthy of further field investigation.

4. I wanted to survey along the Little Wood River downstream from the U.S. Forest Service boundary. However, I could not access this area because the road had been recently gated and posted where it goes through private land near Baugh Creek.

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Appendix 1

Maps of areas surveyed for Ute ladies tresses.

Appendix 2

Map locations and information for selected noxious weed populations.

Map 1. Portion of USGS 7.5' Tikura quadrangle.

1. Russian knapweed – apparently a small local colony.
2. Hoary whitetop – apparently a small local colony.

Map 2. Portion of USGS 7.5' Pagari quadrangle.

1. Russian knapweed – intermixed with diffuse and spotted knapweed.

Map 3. Portion of USGS 7.5' Macon quadrangle.

1. Leafy spurge – scattered, uncommon. Common dogbane is abundant along parts of Camas Creek and superficially looks similar to leafy spurge when only vegetative plants are around. Care should be taken not to confuse the two species during weed control activities.
2. Diffuse knapweed – local and uncommon.
3. Leafy spurge – scattered, locally common; and diffuse knapweed – local and uncommon.
4. Diffuse knapweed – common along old jeep trail and nearby slopes and flats; abundant along old railroad line less than 0.5 mile to the south.
5. Diffuse knapweed – common in vicinity of two-track dirt road along rim and around gauging station and footbridge. It occurs infrequently/ sporadically, often with only a few plants, from the footbridge, downstream for about 1 mile.
   Hoary whitetop – a small patch located about 100 m downstream from the footbridge on the north side of the creek.
6. Leafy spurge – only a few plants in a small area were observed.
7. Leafy spurge and diffuse knapweed – both scattered locally and not too common.
8. Leafy spurge – scattered and uncommon.
9. Leafy spurge – scattered and uncommon.

Map 4. Portion of USGS 7.5' Magic Reservoir West quadrangle.

1. Diffuse knapweed – local and uncommon.

Appendix 3

Preliminary riparian zone vascular plant checklist for the BLM's proposed Camas Creek Area of Critical Environmental Concern.

The list is organized alphabetically by plant family and scientific name. Taxonomy follows *Intermountain Flora* (Cronquist et al. 1977; 1984; 1994; 1997) and *Flora of the Pacific Northwest* (Hitchcock and Cronquist 1973). Most common names are from the latter reference.

Scientific name	Common name
Amaranthaceae	**Amaranth family**
Amaranthus blitoides	mat amaranth
Amaranthus retroflexus	rough pigweed
Apiaceae	**Carrot family**
Perideridia montana	yampah
Sium suave	water-parsnip
Apocynaceae	**Dogbane family**
Apocynum cannabinum	common dogbane
Asteraceae	**Aster family**
Artemisia ludoviciana	Louisiana sagewort
Aster ascendens	aster
Bidens cernua	nodding beggar-ticks
Centaurea diffusa	diffuse knapweed
Cirsium arvense	Canada thistle
Euthamia occidentalis	western goldenrod
Gnaphalium palustre	lowland cudweed
Haplopappus hirtus	hairy goldenweed
Helianthus annuus	common sunflower
Xanthium strumarium	common cocklebur
Boraginaceae	**Borage family**
Plagiobothrys scouleri	Scouler's popcorn-flower
Brassicaceae	**Mustard family**
Cardaria draba	hoary whitetop
Sisymbrium altissimum	tumblemustard
Thlaspi arvensis	field pennycress

Chenopodiaceae	**Goosefoot family**
Chenopodium botrys	Jerusalem-oak
Salsola kali	Russian thistle
Cornaceae	**Dogwood family**
Cornus sericia	red-osier dogwood
Cyperaceae	**Sedge family**
Carex athrostachya	slenderbeaked sedge
Carex nebrascensis	Nebraska sedge
Carex lanuginosa	wooly sedge
Eleocharis acicularis	needle spike-rush
Eleocharis palustris	common spike-rush
Scirpus pungens	common threesquare
Euphorbiaceae	**Spurge family**
Euphorbia esula	leafy spurge
Equistaceae	**Horsetail family**
Equisetum arvense	common horsetail
Equisetum hyemale	Dutch rush
Equisetum laevigatum	smooth horsetail
Fabaceae	**Pea family**
Melilotus alba	white clover
Grossulariaceae	**Currant family**
Ribes aureum	golden currant
Hydrocharitaceae	**Frog's-bit family**
Elodea canadensis	Canada waterweed
Juncaceae	**Rush family**
Juncus spp.	rush species
Lamiaceae	**Mint family**
Mentha arvensis	field mint

Onagraceae	**Evening-primrose family**
Camissonia tanacetifolia	tansy-leaved evening-primrose
Epilobium densiflorum	dense spike-primrose
Epilobium glaberrimum	smooth willow-herb
Oenothera villosa	common evening-primrose
Plantaginaceae	**Plantain family**
Plantago major	common plantain
Poaceae	**Grass family**
Agrostis stolonifera	redtop
Bromus tectorum	cheatgrass
Crypsis alopecuroides	crypsis
Echinochloa crusgalli	large barnyard grass
Muhlenbergia richardsonii	mat muhly
Panicum capillare	common witchgrass
Phalaris arundinacea	reed canarygrass
Phragmites communis	common reed
Polygonaceae	**Buckwheat family**
Eriogonum vimineum	broom buckwheat
Polygonum amphibium	water smartweed
Polygonum lapathifolium	willow weed
Rumex crispus	curly dock
Potamogetonaceae	**Pondweed family**
Potamogeton alpinus	northern pondweed
Ranunculaceae	**Buttercup family**
Ranunculus sceleratus	celery-leaved buttercup
Rosaceae	**Rose family**
Crataegus douglasii	black hawthorne
Potentilla anserina	common silverweed
Prunus virginiana	chokecherry
Rosa woodsii	Wood’s rose
Salicaceae	**Willow family**
Salix exigua	sandbar willow
Salix lasiandra	whiplash willow
Salix lutea	yellow willow

Scrophulariaceae	**Figwort family**
Mimulus guttatus	yellow monkeyflower
Verbascum thapsus	moth mullein
Veronica anagalis-aquatica	water speedwell
Solanaceae	**Nightshade family**
Solanum dulcamara	climbing nightshade
Typhaceae	**Cattail family**
Typha latifolia	common cattail
Urticaceae	**Nettle family**
Urtica dioica	stinging nettle