

**FIELD SURVEY FOR
UTE LADIES' TRESSES
(*SPIRANTHES DILUVIALIS*)
ON THE HENRYS FORK,
EASTERN IDAHO**



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ABSTRACT

Ute ladies' tresses (*Spiranthes diluvialis*) is a white-flowered orchid that was listed as Threatened under the Endangered Species Act in 1992. It is a wetland species restricted to various riparian and wet meadow habitats on alluvial substrates. Most occurrences of Ute ladies' tresses in Idaho are known from along the South Fork Snake River floodplain, from near the confluence of the Henrys Fork, upriver to the Swan Valley area in Jefferson, Madison, and Bonneville counties. In 2002, Ute ladies' tresses was found at Chester Wetlands along the Henrys Fork in Fremont County. This discovery raised the possibility that additional, unknown populations could occur along the Henrys Fork, where the Bureau of Land Management (BLM) manages scattered tracts of land from near Ashton, Idaho, downriver to the Menan Buttes area and the confluence with the South Fork Snake River. In an initial effort to determine if Ute ladies' tresses occurs on land they administer on the Henrys Fork, the BLM contracted the Idaho Conservation Data Center to conduct a field investigation in 2003. We did not find any new populations of Ute ladies' tresses during our field investigation. In addition, potential habitat is absent or limited to scattered, small patches of marginal quality in nearly all of the 13 survey areas we searched. The exception is a BLM tract located approximately one mile upriver from Chester Wetlands. We provide a general description of the vegetation and an assessment of potential Ute ladies' tresses habitat for each of the 13 survey areas in the report.

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INTRODUCTION

Ute ladies' tresses (*Spiranthes diluvialis*) is a white-flowered orchid that was listed as Threatened under the Endangered Species Act in 1992 due to its rarity, low population sizes, and threats of loss or modification of riparian habitats (England 1992). It is a wetland species restricted to various riparian and wet meadow habitats on alluvial substrates (Moseley 1998). Ute ladies' tresses was not known to occur in Idaho until August, 1996, when a population was discovered along the South Fork Snake River near Heise (Moseley 1997a). Surveys conducted along the South Fork Snake River floodplain in subsequent years (Moseley 1997b, Moseley 1998, Moseley 1999) found Ute ladies' tresses occurrences to be scattered along approximately 49 river miles; from near the confluence of the Henrys Fork, upriver to the Swan Valley area in Jefferson, Madison, and Bonneville counties (Moseley 2000). In 2002, Ute ladies' tresses was found at Chester Wetlands along the Henrys Fork in Fremont County, approximately 21 miles northeast of the nearest occurrence on the South Fork Snake River (Dixon et al. 2003). At the time, this represented the only Ute ladies' tresses occurrence in Idaho located outside the South Fork Snake River floodplain.

The discovery of Ute ladies' tresses at Chester Wetlands raised the possibility that additional, unknown populations could occur along the Henrys Fork. The Bureau of Land Management (BLM) manages scattered tracts of land along the Henrys Fork from near Ashton, downriver to the Menan Buttes area and the confluence with the South Fork Snake River. Some BLM property along the Henrys Fork may contain habitat suitable for Ute ladies' tresses. In an initial effort to determine if Ute ladies' tresses occurs on land they administer in the area, the BLM contracted the Idaho Conservation Data Center (IDCDC) to conduct a field investigation on selected BLM parcels along the Henrys Fork in 2003. This report summarizes the results of the field investigation project. More detailed information regarding the identification, habitat, range, threats, and conservation status of Ute ladies' tresses in Idaho has been summarized in earlier reports (e.g., Moseley 1998, U.S. Fish and Wildlife Service 1998).

METHODS

We conducted surveys for Ute ladies' tresses on selected BLM parcels along the Henrys Fork between August 28 and September 9, 2003. The location of our Henrys Fork study area in eastern Idaho is shown in Figure 1. BLM property associated with the Henrys Fork occurs as discontinuous, narrow strips or blocks separated by intervening private land. The BLM parcels tend to be isolated in several areas, especially upriver from St. Anthony. We used several criteria to select a subset of BLM tracts for our field investigation: (1) distribution – we wanted to survey areas distributed along various stretches of the river; (2) proximity to Chester Wetlands – we wanted to survey BLM parcels located in the same general area where Ute ladies' tresses was discovered in 2002; and (3) access – we limited our survey to areas having relatively straightforward access without crossing private property.

Surveys were conducted by walking a meandering transect through each survey area targeting habitat with hydrologic conditions and plant communities potentially suitable for Ute ladies' tresses. This allowed us to visit all or nearly all of a given survey area, but concentrate most of our time and effort on the habitat most likely to support Ute ladies' tresses. Targeted potential habitat included plant communities known to support Ute ladies' tresses elsewhere in Idaho, such as: (1) mixed mesic graminoid; (2) coyote willow (*Salix exigua*)/mesic graminoid; (3) silverberry (*Elaeagnus commutata*); (4) variegated scoring rush (*Equisetum variegatum*); woolly sedge (*Carex lanuginosa*); and (6) wandering spike-rush (*Eleocharis rostellata*). Descriptive information concerning these plant communities is provided in other reports and references

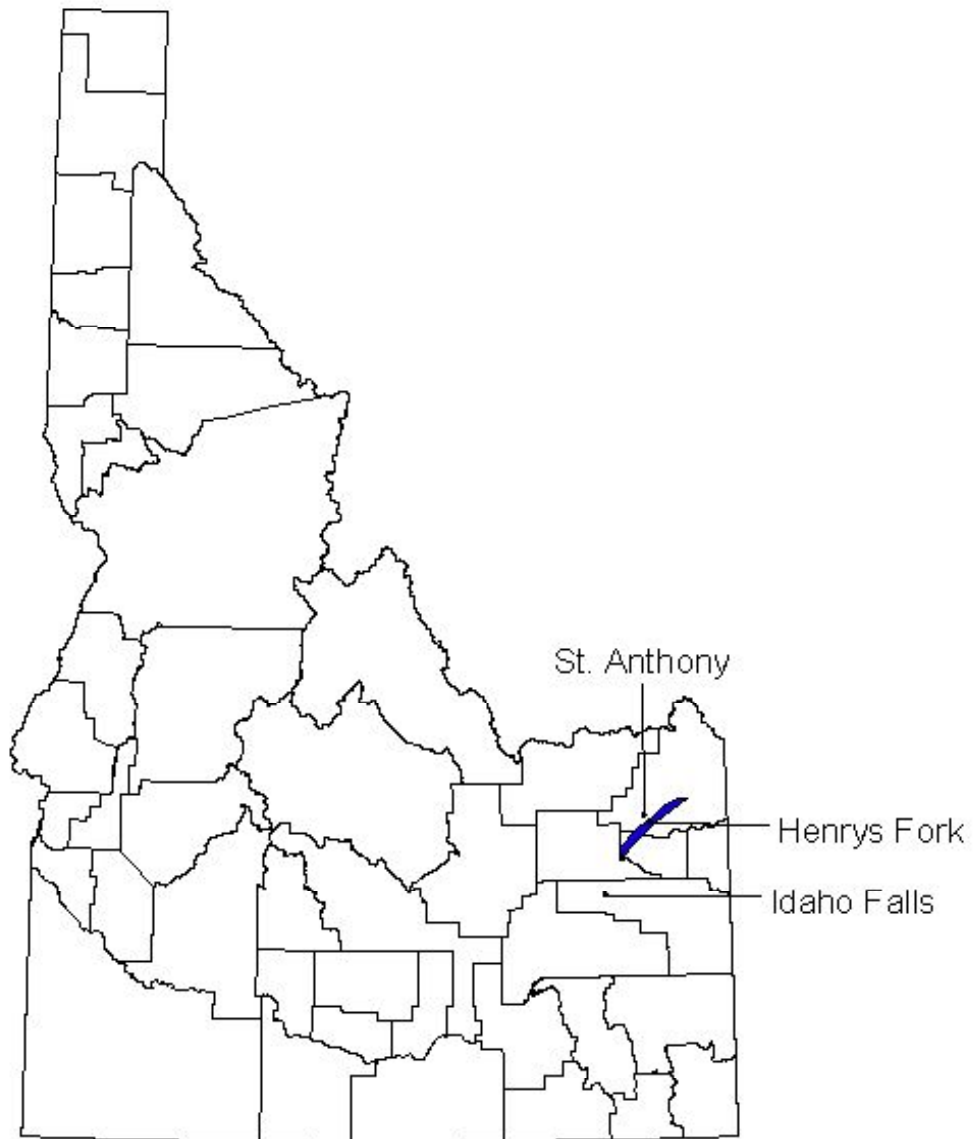


Figure 1. Location of Ute ladies' tresses survey area on the Henrys Fork in eastern Idaho, 2003.

concerning Ute ladies' tresses (e.g., Dixon et al. 2003, Moseley 1998, Moseley 2000, U.S. Fish and Wildlife Service 1998). We also kept eyes open for other, ecologically-related plant communities that could be suitable for Ute ladies' tresses.

At each survey area we recorded the general vegetation and assessed habitat suitability for Ute ladies' tresses. If Ute ladies' tresses was found our 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. We documented our survey areas as polygons on USGS 7.5' topographic quadrangles. The mapped polygons are in Appendix 1. The polygons form the basis of our survey acreage estimates. Legal descriptions for each of the survey areas are listed in Table 1.

Table 1. Ute ladies' tresses survey area location and size information, 2003.

Survey area	Size (acres)	USGS 7.5' quadrangle	Legal description
1	5	Lemon Lake	T9N R42E Sec 33
2	10	Lemon Lake	T8N R42E Sec 6
3	133	Lemon Lake	T8N R41E Sec12
4	74	St. Anthony	T7N R40E Sec 10
5	8	St. Anthony	T7N R40E Sec 15
6	59	St. Anthony	T7N R40E Sec 16
7	75	Parker	T7N R40E Sec 17
8	13	Parker	T7N R40E Sec 17
9	112	Parker	T7N R40E Sec 18 & 19
10	73	Parker	T7N R39E Sec 34
11	35	Menan Buttes	T6N R39E Sec 30
12	17	Menan Buttes	T6N R39E Sec 30
13	31	Menan Buttes	T6N R39E Sec 31

RESULTS

We did not find any Ute ladies' tresses populations during the field investigation. In addition, potential habitat is absent or limited to scattered, small patches of marginal quality in nearly all of the survey areas. The exception is the BLM tract (Survey area #3) located approximately one mile upriver from Chester Wetlands. The southern segment of this survey area contains potential Ute ladies' tresses habitat in a relatively large, subirrigated mesic graminoid meadow. A map showing the location of the meadow is in Appendix 2.

Our field investigation included 13 survey areas scattered between river miles 6 and 43. We surveyed a total of approximately 645 acres, with individual survey areas ranging in size from roughly 5 to 133 acres. The investigation included approximately 7.4 miles of riverbank habitat along the Henrys Fork. Individual survey areas encompassed between 0.2 and 1.2 miles of riverbank habitat.

The following section provides a general description of the vegetation and an assessment of potential Ute ladies' tresses habitat for each of our 13 survey areas. General location and topographic setting information is provided as well.

Survey Area 1 – This survey area is a small, isolated BLM parcel located approximately four miles west of Ashton along the east side of the Henrys Fork near river mile #43. It is the furthest upstream parcel included in the field survey project. The parcel is comprised of gently sloping uplands that abruptly give way to steep, rocky cliffs.

Vegetation – The survey area has no wetland habitat. Steep, broken cliffs approximately 25 m high rise up from the edge of the river. Cliff vegetation is characterized by a Rocky Mountain juniper (*Juniperus scopulorum*) and chokecherry (*Prunus virginiana*) overstory and a mix of shrubs such as bigtooth maple (*Acer grandidentatum*), mountain snowberry (*Symphoricarpos oreophilus*) and rose (*Rosa* spp.) in the understory. Most of the BLM property above the cliff face burned in the past and now supports only patches of the former sagebrush/Idaho fescue (*Artemisia tridentata*/*Festuca idahoensis*) community type. It appears parts of the area received a post-fire seeding with a bluebunch wheatgrass cultivar (*Agropyron* spp.) and a small amount of crested wheatgrass (*Agropyron cristatum*).

Ute ladies' tresses habitat - No Ute ladies' tresses habitat occurs within the survey area.

Survey Area 2 – This survey area is a small, narrow BLM parcel located approximately six miles southwest of Ashton along the east side of the Henrys Fork near river mile #41. The survey area is a low, gently sloping bench above the river. Cattle were present in the general area at the time of our survey.

Vegetation – The survey area contains no well developed wetland habitat. Most of the rocky riparian strip supports a narrow band of deciduous shrubs dominated by chokecherry and thinleaf alder (*Alnus incana*) along with a few interspersed Rocky Mountain juniper. A narrow (<1 m wide in most places) strip of reed canarygrass (*Phalaris arundinacea*) occurs right along the river edge in places. Sagebrush comes down to the river bank in the middle section of the parcel. Sagebrush-bunchgrass vegetation dominates the vegetation above the narrow riparian band.

Ute ladies' tresses habitat - No Ute ladies' tresses habitat occurs within the survey area.

Survey Area 3 – This BLM tract is located on the west side of the Henrys Fork, approximately one mile upriver from the mouth of Falls River near river mile #40. It is also located approximately one mile north of the northern boundary of the IDFG Chester Wetlands segment of the Sand Creek Wildlife Management Area. The BLM parcel contains a mix of flat to gently rolling topography. A diversion ditch (canal) and associated levee more or less parallels the river along the length of the parcel. A two tract dirt road traverses the tract as well.

Vegetation – The great majority of this BLM tract is shrub-steppe upland vegetation, predominately bitterbrush (*Purshia tridentata*)/bunchgrass or sagebrush-bitterbrush/bunchgrass community types. Most of the area is sandy and needle-and-thread grass (*Stipa comata*) appears to be the primary upland bunchgrass species. A narrow riparian strip along the bank of the Henrys Fork is mostly thinleaf alder with interspersed black hawthorn (*Crataegus douglasii*), coyote willow, yellow willow (*Salix lutea*), rose, and golden currant (*Ribes aureum*). The narrow riparian strip has an open to closed canopy, often overhangs the river, and is unsuitable for Ute ladies' tresses. Dry sections of the narrow, rocky levee contain sagebrush-rabbitbrush (*Chrysothamnus* spp.). Other levee sections support a mix of deciduous shrub species. The narrow green strips along the ditch bank slope are characterized by a mix of mesic native and non-native graminoids and forbs. Licorice-root (*Glycyrrhiza lepidota*) is probably the most abundant native forb along the levee.

A subirrigated, mesic graminoid-dominated meadow occurs near the downstream end of the BLM tract between the river and canal. The meadow is located where the levee and canal veer away from the river, leaving a several acre area with relatively intact, subirrigated hydrology. Common graminoids in the meadow include redtop (*Agrostis stolonifera*), Nebraska sedge (*Carex nebrascensis*), short beak sedge (*Carex simulata*), other sedges (*Carex* spp.), Baltic rush (*Juncus balticus*), and some Kentucky bluegrass (*Poa pratensis*). Common forbs include horsetail (*Equisetum* spp.), white clover (*Trifolium repens*), cinquefoil (*Potentilla* spp.), and aster (*Aster* spp.). A band of whiplash willow (*Salix lasiandra*) defines the margin of the meadow nearest the levee. A series of small strips of similar mesic graminoid community occur directly along the Henrys Fork just upriver from this meadow.

Perennial sow-thistle (*Sonchus arvensis*) is an invasive weed species associated with Ute ladies' tresses at several occurrences along the South Fork Snake River. It appears to be an

indicator of environmental conditions suitable for the orchid in eastern Idaho. It occurs at low cover within the meadow. Canada thistle (*Cirsium arvense*) is another noxious weed that occurs in the meadow. It is more abundant along the nearby levee and ditch banks. At least one patch of a third noxious weed species, butter and eggs (*Linaria vulgaris*) occurs in the survey area. This patch is located just east of the dirt road, approximately 0.25 mile north of the southern edge of the BLM tract.

Ute ladies' tresses habitat - The subirrigated, mesic graminoid-dominated meadow complex found between the river and canal near the downstream end of the BLM tract contains potential Ute ladies' tresses habitat. Portions of the approximately 3 acre meadow complex are either too wet or too dry, but much of it appears to have conditions suitable for Ute ladies' tresses. The meadow is located a little over one mile upriver from the known Ute ladies' tresses occurrence at Chester Wetlands. The meadow has general vegetation characteristics comparable to the Chester Wetlands site. A GPS coordinate for the meadow is provided in Appendix 2. The series of mesic graminoid strips located along the Henrys Fork just upriver from this meadow also provide small zones of potential habitat. In addition, a couple of small mesic graminoid patches perched alongside the diversion ditch further upriver may also represent potential Ute ladies' tresses habitat.

Survey Area 4 – This survey area is located approximately two miles west of St. Anthony along the east side of the Henrys Fork, near the Consolidated Farmers Canal diversion dam and river mile #28. I surveyed only the area between the canal and a large side channel of the river. The survey area is a low, flat terrace with scattered old channel scars, abandoned oxbows and other wet inclusions. A network of ATV paths cut through drier sections of the BLM tract. A few dispersed campsites also occur within the survey area.

Vegetation - Most of the area is characterized by an open to closed canopy black cottonwood (*Populus trichocarpa*) forest. Frequent large to small meadow openings are scattered throughout the forest. The primary forest community types are black cottonwood/mixed deciduous shrub, black cottonwood/reed canarygrass, and black cottonwood/Kentucky bluegrass. In places, the deciduous shrub understory is so dense and intertwined to be nearly impenetrable. Opening along the Henrys Fork are dominated by reed canarygrass, while other sections along the river contain a shaded black cottonwood or whiplash willow overstory. Forest openings tend to be relatively dry and are often dominated by Kentucky bluegrass. These openings also tend to have one or more noxious weedy forb species present.

Wet inclusions within the study area often support bands or patches of willow (*Salix* spp.), black hawthorn, and/or thinleaf alder. Wet inclusion lacking shrubs usually contain swards of reed canarygrass, beaked sedge (*Carex utriculata*), or Baltic rush. Beginning approximately 0.3 mile southwest of the diversion dam there is a long, relatively narrow strip of mesic graminoid meadow vegetation between the road and cottonwood forest. The meadow is dominated by a Baltic rush community type, with patches of Kentucky bluegrass, Nebraska sedge, and threepart sagebrush (*Artemisia tripartita*) community types. Redtop is intermixed in varying degrees throughout much of the meadow complex. Nearly all of the graminoid vegetation in the meadow was grazed to nubs except for the Baltic rush.

At least three noxious weed species are well established within the survey area. Canada thistle generally occurs in dense patches and is the most abundant of the weedy forbs. Leafy spurge (*Euphorbia esula*) occurs as widely scattered individuals or as thick clonal patches. Butter and eggs is more thinly dispersed, but occurs in small dense patches in places. A fourth noxious weed, spotted knapweed (*Centaurea maculosa*) is not as well established yet, occurring in only

a few scattered patches. Another weedy forb of interest and concern is *Berteroa* (*Berteroa incana*). It is widespread in the survey area, but does not occur in dense patches at the present time.

Ute ladies' tresses habitat - A few small wet swale inclusions are dominated by redtop. The small size of these microsites (<10 x10 m) precludes them from being anything but marginal Ute ladies' tresses habitat. The relatively large meadow complex located approximately 0.3 mile southwest of the diversion dam contains a few small patches of what at best represents marginal Ute ladies' tresses habitat.

Survey Area 5 – This small BLM tract is located approximately 0.3 mile downriver from Survey Area 4, near river mile #27. The survey area is a low terrace 2 –3 m above and adjacent to the Henrys Fork.

Vegetation – A narrow strip of black cottonwood mixed with narrowleaf cottonwood (*Populus angustifolia*) and a depauperate (some Kentucky bluegrass) understory occurs along the river bank. The band of cottonwood gives way to upland vegetation dominated by threetip sagebrush within roughly 20 m of the river's edge. This BLM parcel appears to have a long history of intensive livestock use. Canada thistle and butter and eggs both occur within the survey area.

Ute ladies' tresses habitat - No subirrigated or floodplain habitat suitable for Ute ladies' tresses occurs within the survey area. BLM property occurs across the river along the north bank. It was not directly surveyed, but clear views from the south bank indicate Ute ladies' tresses habitat is also absent from the north side of the river.

Survey Area 6 – This survey area is located approximately three miles west of St. Anthony and one and one-half miles south of Parker along the east side of the Henrys Fork near river mile #26. The survey area is a low terrace with several old, abandoned river features and low spots. An enclosure fence protecting the river banks runs near the boundary of the riparian and dry meadow vegetation. Much of the survey area was intensively grazed by cattle prior to my visit.

Vegetation – Small groves or bands of black cottonwood occur primarily along the river, but also extend inland in several places. A black cottonwood/mesic graminoid community type is common close to the river, but it gives way to a Kentucky bluegrass understory on slightly higher ground further from the river. A few sand and gravel bars that extend away from the river have cottonwood (including young individuals) and willows along with abundant leafy spurge in the understory. Open areas along or near the river bank are dominated by reed canarygrass. The downriver segment of the survey area supports large clonal patches of this tall grass.

The bulk of the survey area supports graminoid-dominated vegetation. The northern half of the meadow complex is relatively dry and dominated by Kentucky bluegrass. Livestock had recently grazed most of the grasses in this area to nubs. Weedy forbs such as white clover and dandelion (*Taraxacum officinale*) are common in this part of the meadow. The southern portion of the meadow complex is wetter and characterized by graminoids such as Nebraska sedge, redtop, Baltic rush, mat muhly (*Muhlenbergia richardsonii*), and some Kentucky bluegrass. Forb diversity and abundance is low in this area.

Ute ladies' tresses habitat – The southern portion of the meadow complex contains a few small, scattered swales with redtop and a mix of other mesic graminoids. These microsites represent marginal, but the best potential habitat for Ute ladies' tresses within the survey area.

Survey Area 7 – This survey area is located approximately two miles south of Parker, just east of the Red Road bridge, on the north side of the Henrys Fork near river mile #25. The survey area is a flat low terrace adjacent to the river. The narrow BLM strip along the river a little east of the bridge has a raw, eroding bank dropping about 2 m to the water. ATV tracks that likely connect to adjacent private lands occur in the eastern part of the survey area.

Vegetation – A black cottonwood/deciduous shrub woodland occurs in the very westernmost (downstream) portion of the survey area. Quackgrass (*Agropyron repens*) is one of the main understory species. Just upstream from this woodland is a dry graminoid (probably Kentucky bluegrass, but everything was grazed to nubs making positive identification difficult) meadow. The remainder of the parcel is a mosaic of wetland and upland vegetation. Roughly half of the area is black cottonwood forest and woodland, including black cottonwood/mixed deciduous shrub, black cottonwood/mesic graminoid, and black cottonwood/Kentucky bluegrass community types. Intermixed, and usually associated with old river features or other low, wet spots are patches and stringers of coyote willow, whiplash willow, black hawthorn, and occasionally aspen (*Populus tremuloides*) that have a mesic graminoid or Kentucky bluegrass understory. Non-wooded areas are largely either Kentucky bluegrass or threetip sagebrush/Kentucky bluegrass vegetation. Bare ground is common in places. Large to small patches of mesic graminoid vegetation are scattered throughout the parcel in subirrigated areas. Butter and eggs, and leafy spurge are widespread and locally common within the BLM tract. Spotted knapweed occurs in only a few places.

Ute ladies' tresses habitat - Most of the wet meadow vegetation in the survey area is grazed hard by cattle. This makes grass identification and looking for Ute ladies' tresses problematic. The best potential habitat for Ute ladies' tresses is a series of narrow, linear, moist swales in the upstream quarter of the survey area. Overall, potential Ute ladies' tresses habitat is limited.

Survey Area 8 – This survey area encompasses a small section of BLM property located approximately 0.1 mile north of the Fort Henry Historic Monument along the south side of the Henrys Fork and across the river from Survey Area 7 near river mile #25. The survey area is a low terrace adjacent to the river. Land ownership maps show the survey area to be BLM property. However, the area is posted along Red Road with at least one unfriendly no trespassing sign. I did not directly search the survey area for this reason. The survey area does not include adjoining BLM land further upstream that could not be adequately observed from the road. Assessment of the survey area was made from Red Road along the downstream end of the parcel using binoculars.

Vegetation – The vegetation is a mix of mesic and dry graminoid meadow types. Cattle were in the area at the time of the survey.

Ute ladies' tresses habitat - I did not observe any suitable-looking Ute ladies' tresses habitat within the survey area.

Survey Area 9 – This survey area is located approximately two miles southwest of Parker, west of the Red Road bridge, on the north side of the Henrys Fork near river mile #24. The survey area is a flat low terrace adjacent to the river with scattered sloughs, old river channels, and other low, wet spots. BLM property directly along the Henrys Fork is limited in this survey area. Only minimal evidence of cattle occurs in this parcel. I did see ATV paths in the southwestern part of the parcel that lead to adjacent private lands.

Vegetation – The large meadow west of the road and most other open areas are strongly dominated by an unknown (probably planted, but no or few flowers/fruits to aid in identification) species or cultivar of bluebunch wheatgrass. Scattered moist depressions and swales contain reed canarygrass, Baltic rush, or beaked sedge. Gently flowing sloughs are lined mostly with leersia (*Leersia oryzoides*) and beaked sedge. Depressions with standing shallow water are dominated by cattail (*Typha latifolia*) or beaked sedge. The driest open areas have Kentucky bluegrass. Patches or stringers of black cottonwood, whiplash willow, or coyote willow occur along the margins of wet open areas. Small to fairly large groves of aspen dominate much of the western portion of the survey area. Understory vegetation beneath the aspen varies from Kentucky bluegrass and snowberry (*Symphoricarpos* spp.), to willows and other tall deciduous shrubs.

Leafy spurge occurs in a few places in low abundance within the BLM parcel. Some larger patches occur on nearby private land. Butter and eggs is established in scattered areas at low abundance as well. Patches of Canada thistle are most common in the southwestern segment of the parcel.

Ute ladies' tresses habitat – Potential Ute ladies' tresses habitat within this survey area is rare. It is limited to a few small mesic mixed-graminoid patches. The rest of the survey area is either too dry, too wet, or too shaded.

Survey Area 10 – This survey area is located approximately one and one-half miles north of Hibbard, on both sides of the Henrys Fork near river mile 18.5. The survey area is a flat terrace interspersed with old river channels, abandoned oxbows, and other low, wet places. Standing or shallow flowing water occurs in several places outside the main river channel. Evidence of past livestock use is more prevalent on the east side of the river compared to the west side.

Vegetation – The survey area on the west side of the river has a steep, often sloughing bank that drops one or more meters down to the river. Two main plant communities form a riparian band along and near the river bank. The aspen/deciduous shrub community type contains hawthorn and/or coyote willow, with lesser amounts of rose and red-osier dogwood (*Cornus sericia*) as the main associated shrubs. Patches of licorice-root are common in the understory. Coyote willow/reed canarygrass is the other main riparian community type. It is characterized by dense reed canarygrass colonies beneath thickets of coyote willow. Few other plant species occur.

I observed recent beaver activity in the southern part of the parcel, portions of which are being flooded. Wet sites associated with or near the flooded area support intermixed patches of reed canarygrass, cattail, hardstem bulrush (*Scirpus acutus*), coyote willow/common spike-rush (*Eleocharis palustris*), and a mixed wet graminoid community that includes reed canarygrass, leersia, retrorse sedge (*Carex retrorsa*), and Baltic rush. Dead or dying coyote willow shrubs occur in one area being flooded. This area also has a few small patches of purple loosestrife (*Lythrum salicaria*). Slightly higher ground has a grove of black cottonwood/Kentucky bluegrass.

An open meadow occupies a large strip of land closest to the road. It contains a hodgepodge of native and exotic herbaceous species, including Kentucky bluegrass, mat muhly, redtop, quackgrass, horsetail, Louisiana sage (*Artemisia ludoviciana*), curly-gup gumweed (*Grindellia squarrosa*), aster, clover (*Melilotus* spp.), and licorice root.

Vegetation within the survey area on the east side of the river is characterized by a mosaic of woody plant community types, the most common being aspen/Kentucky bluegrass, black

cottonwood/ deciduous shrub/Kentucky bluegrass, and thickets of coyote willow/reed canarygrass. Small inclusions of black cottonwood/Kentucky bluegrass, coyote willow/Kentucky bluegrass, and coyote willow/sand-gravel bar also occur. Swards of reed canarygrass mixed with other mesic graminoids are intermixed throughout the area. Canada thistle is widespread and locally dense in places. Scattered individual or small patches of bull thistle (*Cirsium vulgare*) also occur within the survey area.

Ute ladies' tresses habitat – Nearly all of the survey area west of the river is either too wet, too dry, or too shaded for Ute ladies' tresses. The only potential habitat includes a few small patches of redtop-dominated "lawn". Potential Ute ladies' tresses on the east side of the river is equally as limited and marginal. A narrow strip of mesic graminoids below the high water line along one section may have been suitable Ute ladies' tresses habitat in the past, but is now quite weedy. A few small patches of redtop-dominated "lawn" may represent potential habitat.

Survey Area 11 – This survey area is located approximately seven miles west of Rexburg, just south of Highway 33 at the North Fork Bridge, on the east side of the Henrys Fork near river mile #9. The survey area is low, flat ground with interspersed floodplain, old channel features, swales, and other wet zones.

Vegetation – Most of the northern and southern ends of the survey area are dominated by dense thickets of coyote willow and/or red-osier dogwood interspersed with lesser amounts of whiplash willow, yellow willow, and aspen. The low-lying margin of the inlet at the southern end of the survey area is dominated by common spike-rush along with retrorse sedge and common sneezeweed (*Helenium autumnale*) in seasonally flooded areas that grade into a flooded emergent zone with hardstem bulrush and arumleaf arrowhead (*Sagittaria cuneata*). Middle sections of the survey area contain a relatively dry meadow dominated by creeping wildrye (*Elymus triticoides*), or moister river bank and floodplain vegetation dominated by reed canarygrass. Small mesic graminoid patches tend to be dominated by clustered field sedge (*Carex praegracilis*) with low associated cover of redtop, Baltic rush, Kentucky bluegrass, reed canarygrass, and a few forb species.

Noxious weeds are common in the survey area. Canada thistle is widespread and abundant, while leafy spurge and musk thistle (*Cardus nutans*) are more patchy in their distribution.

Ute ladies' tresses habitat – Minimal potential Ute ladies' tresses habitat occurs in the survey area. A few small swales dominated by clustered field sedge represent the best, but marginal potential habitat.

Survey Area 12 - This survey area is located approximately seven miles west of Rexburg, east of the Cartier Slough, on the west side of the Henrys Fork near river mile #8. This narrow survey area occurs along the Henrys Fork and grades into the adjacent flat floodplain owned by the Bureau of Reclamation and managed by the Idaho Department of Fish and Game. The floodplain is interspersed with old channel features and swales, with the water table keeping depressions moist for much of the season.

Vegetation - Reed canarygrass is the dominant grass lining much of the river channel. Redtop, fowl mannagrass (*Glyceria striata*) and Baltic rush are present in smaller amounts. In the slower eddies, hardstem bulrush is well established. Narrow but dense thickets of coyote willow and Woods' rose (*Rosa woodsii*) overhang the bank and leave small or no openings. These woody species extend from the bank edge for approximately 2-4 meters into the floodplain. At the edge

of the woody thicket the vegetation transitions to an open meadow dominated by quackgrass, smooth brome (*Bromus inermis*), timothy (*Phleum pratense*), meadow horsetail (*Equisetum arvense*), and Baltic rush. Licorice-root, Louisiana sage, and cinquefoil are the most common forbs. Canada thistle occurs in scattered patches, but is more abundant, along with leafy spurge on the adjacent floodplain owned by the Bureau of Reclamation. Another aggressive weed species near BLM property is chamomile (*Chamomilla recutita*). A 2-3 m diameter patch occurs on the river bank just north of survey area.

Ute ladies' tresses habitat – Minimal potential Ute ladies' tresses habitat occurs in the survey area. The best potential habitat occurs on the adjacent Bureau of Reclamation land in the wet swales, where meadow horsetail and Baltic rush occur.

Survey Area 13 - This survey area is located approximately one-half mile downriver from survey area #12, on the west side of the Henrys Fork near river mile #7. Portions of the survey area occur directly along the Henrys Fork, but most of it extends out into the adjacent floodplain.

Vegetation – Vegetation patterns are similar to survey area #12. Areas along the river support bands of coyote willow and Wood's rose. Meadow vegetation dominated by introduced grasses occurs further away from the channel. Canada thistle is the only noxious weed species occurring on the BLM property.

Ute ladies' tresses habitat – Minimal potential Ute ladies' tresses habitat occurs in the survey area. Similar to survey area #12, the best potential habitat occurs on the adjacent Bureau of Reclamation land in the wet swales, where meadow horsetail and Baltic rush occur.

DISCUSSION

Most of the areas we searched in 2003 contain no more than a few small, scattered patches of potential Ute ladies' tresses habitat. The small size and fragmented distribution of these habitat patches probably makes the establishment and persistence of Ute ladies' tresses highly unlikely. An exception is the relatively large mesic graminoid meadow in the southern portion of Survey Area #3. It contains the best potential Ute ladies' tresses habitat encountered during the field investigation. I recommend this area be resurveyed at least one more time in the future to be more confident Ute ladies' tresses does not occur at the site. None of the other survey areas included in this field investigation are a priority for future field revisits. This is the case even though cattle grazing prior to our field visits made searching for Ute ladies' tresses problematic at a few survey areas. Patches of mesic graminoid turf in survey areas # 4, 6, and 7 are the most notable areas where cattle grazing limited the completeness of our survey.

The BLM has played a leading role in the conservation of Ute ladies' tresses in Idaho since this species was discovered in the state. Most Ute ladies' tresses occurrences on the South Fork Snake River are located at least partially on land managed by the BLM. It is now clear that potential Ute ladies' tresses habitat on BLM land along the Henrys Fork is much less extensive compared to the South Fork Snake River. We surveyed roughly 50% of the BLM property located along the Henrys Fork in 2003. Unsurveyed parcels occur near St. Anthony, in the Warm Slough area, and both upriver and downriver from the mouth of the South Fork Teton River. It is not unreasonable to assume pockets of potential Ute ladies' tresses habitat could be present on one or all of these BLM tracts. The use of boats would greatly expedite any future field surveys on these tracts.

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Appendix 1

Maps of Ute ladies' tresses survey areas.

Appendix 2

Location of potential Ute ladies' tresses habitat on BLM property north of Chester Wetlands.

GPS coordinate for meadow containing potential habitat for Ute ladies' tresses:
4874947 N 454171 E (UTM 12T, NAD 27)