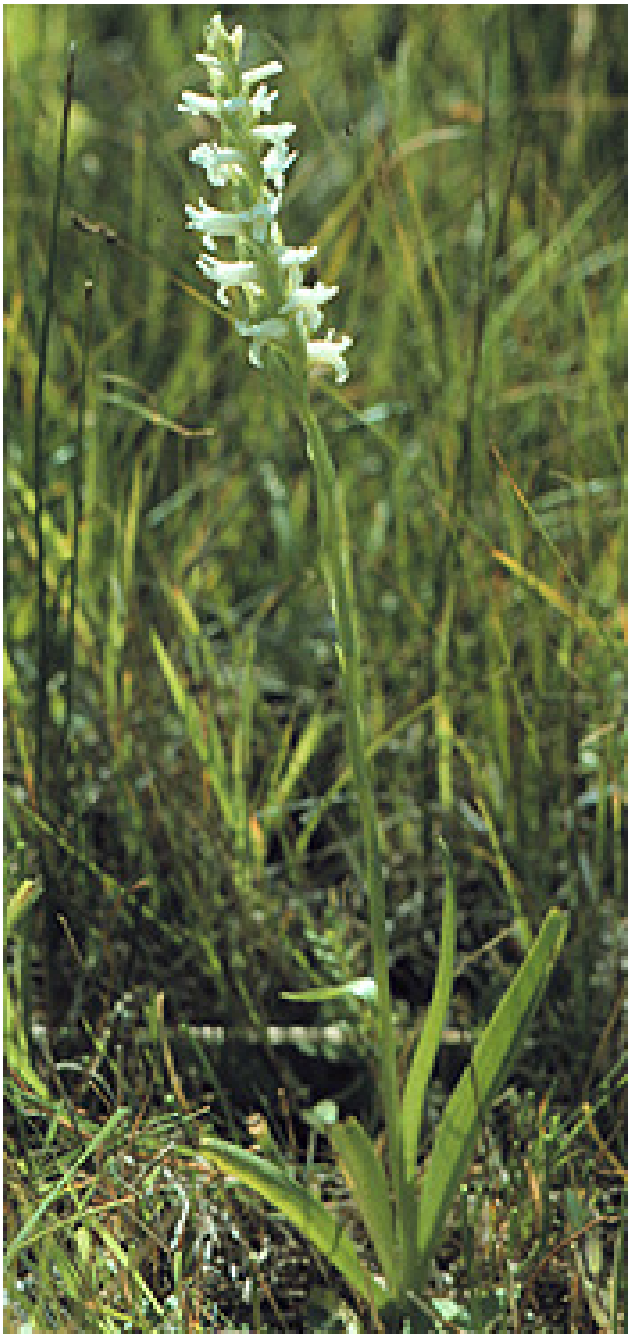
FINAL REPORT

STATEWIDE PROGRAMMATIC BIOLOGICAL ASSESSMENT: UTE LADIES'-TRESSES ORCHID (*Spiranthes diluvialis*)



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ACRONYMS AND ABBREVIATIONS

ACEC	Area of Critical Environmental Concern
BA	Biological Assessment
BAER	Burned Area Emergency Rehabilitation
BLM	Bureau of Land Management
BMP	Best Management Practices
BUP	Biological Use Proposal
CFR	Code of Federal Regulations
CO	Carbon Monoxide
COA	Condition of Approval
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act
FO	Field Office
IMP	Interim Management Policy
MLA	Mineral Leasing Act
MLAAL	Mineral Leasing Act for Acquired Lands
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NO2	Nitrogen Dioxide
NRHP	National Register of Historic Places
NSO	No Surface Occupancy
OHV	Off-Highway Vehicle
Orchid	Ute Ladies'-tresses Orchid
PM10	Particulate Matter
PSD	Prevention of Significant Deterioration
PUP	Pesticide Use Proposal
R&PP	Recreation and Public Purpose
RMP	Resource Management Plan
SO2	Sulfur Dioxide
USFWS	U.S. Fish and Wildlife Service
VRM	Visual Resource Management
WAAQS	Wyoming Ambient Air Quality Standards
WDEQ	Wyoming Department of Environmental Quality
WGFD	Wyoming Game and Fish Department
WSA	Wilderness Study Area
WSR	Wild and Scenic River
WYNDD	Wyoming Natural Diversity Database

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1.0 INTRODUCTION

PURPOSE

This programmatic biological assessment (BA) assesses the potential effects to the Ute Ladies'-tresses orchid (orchid) (*Spiranthes diluvialis*) from management actions included in Resource Management Plans (RMPs) approved by the Wyoming Bureau of Land Management (BLM). The orchid is a Federally listed threatened plant species. The objectives of this BA are to:

- Summarize the biology of the orchid, including its known and potential distribution in Wyoming;
- Review pertinent RMPs and RMP amendments and identify management actions with the potential to affect the orchid or its habitat;
- Assess the potential effects of actions proposed in the RMP on the orchid and its habitat;
- Prepare an effects determination on the orchid for each of the proposed actions identified in the RMPs; and
- Provide conservation strategies to reduce or eliminate adverse effects on the species.

The analysis area for each management action is based on the planning area boundaries specified in the individual RMPs. These boundaries are described in the analysis section for each RMP. The determination is based on the nature of each management action as described in the RMP and on the available data for the orchid in the area that is affected by the management action.

ORGANIZATION OF REPORT

This BA is organized into six sections, as described below:

1.0 Introduction – describes the purpose of the analysis, the scope of the BA, the action area, and the methods used for this BA.

2.0 Species Information – summarizes the current listing status, species ecology, abundance and distribution in Wyoming, and threats to the orchid.

3.0 Analysis of General Program Descriptions – describes habitat and occurrence of the orchid in the area affected by the Platte River (Casper FO), Newcastle and Great Divide (Rawlins FO) RMPs and potential habitat in all other field offices (FOs), analyzes the effects from management actions authorized under each program for all FOs, and includes an effects determination specific to each management action for all field offices and a cumulative effects section for all non-Federal activities potentially impacting the orchid.

4.0 Cumulative Effects - are those effects of future State of private activities, not involving Federal activities, that are reasonably certain to occur within the action area (RMP planning area boundaries in this BA) of the Federal action subject to section 7 consultation [50 CFR §402.02].

5.0 Conservation Strategies – provides recommendations that may further reduce potential effects to the orchid. These measures were prepared in coordination with the U.S. Fish and Wildlife Service (USFWS) office in Cheyenne, Wyoming.

6.0 References – provides a list of documents that were reviewed while preparing this report.

METHODS

The methods used in this BA included a review of scientific literature and the relevant RMPs, contacts with agency biologists, an analysis of management actions, and a determination of effects. First, literature was reviewed to gather information about the ecology and habitat of the orchid (referred to as "orchid" for the remainder of this document). Biologists from Casper Field Office (FO) of the BLM were contacted as part of this review. In an effort to collect the most recent information about ecology, occurrence, and listing status, personnel were contacted in the USFWS office in Cheyenne, Wyoming. The University of Wyoming (UW), Wyoming Natural Diversity Database (WYNDD) was referenced for species information, including description, distribution, and habitat preferences specific to occurrences in Wyoming.

Within Wyoming, the orchid is known to exist in at least at seven locations (**Map 1**). These known locations occur in Converse, Goshen, Laramie, and Niobrara, counties (Fertig 2000b). Two of the locations are within two miles of current orchid occurrences and are considered to be extensions of the original occurrences at this time. This BA assesses the potential effects of actions included in RMPs throughout Wyoming. The Platte River RMP (BLM 1985) is considered the most germane, because three known populations (separate occurrences) of the orchid are found within the Casper FO on public lands, however, populations are also found on non-Federal lands managed under the Newcastle and Great Divide (Rawlins FO) RMPs. The remaining seven BLM RMPs that cover Wyoming were addressed, because potential habitat exists within all of the BLM field offices. These seven field offices correspond to the area modeled as potential habitat for the orchid (Fertig and Thurston 2003), however, the models were built on current habitat attributes and since the orchid has not been discovered on lands in the western two thirds of Wyoming, attributes are lacking so the habitat model does not have any potential habitat mapped for that portion of the state. The RMPs were reviewed, and the proposed actions and minimization measures were summarized.

After the RMPs were reviewed, management activities and Federal actions were analyzed for their potential to directly or indirectly affect the orchid. The Endangered Species Act (ESA) does not prohibit incidental take of listed plant species. Furthermore, Sections 7(b)(4) and 7(o)(2) of the ESA generally do not apply to listed plant species. Limited protection of listed plants from take is provided to the extent that the ESA prohibits removal, reduction in habitat, and possession of Federally endangered plants. It also prohibits malicious damage of these plants on areas under Federal jurisdiction and destruction of endangered plants on non-Federal areas in violation of state law or regulation or during any violation of a state law on criminal trespass.

The results of the effects analysis were used to determine effects on the orchid for each general program description. A determination was also provided for the specific management action in all of the RMPs statewide. These determinations are provided in Chapter 3. Each determination was based on the management prescription described and on any measures intended to minimize the effects to the species. Mitigation measures presented in the Conservation Measures section of this BA were not included in the RMPs. However, conservation measures were considered to minimize impacts to the orchid in the effects determination analysis. The following categories are possible effects determinations:

- No effect;

- May affect, but **is not likely to adversely affect** due to:
  - Beneficial effects,
  - Discountable effects, or
  - Insignificant effects;

- May affect, is **likely to adversely affect**.

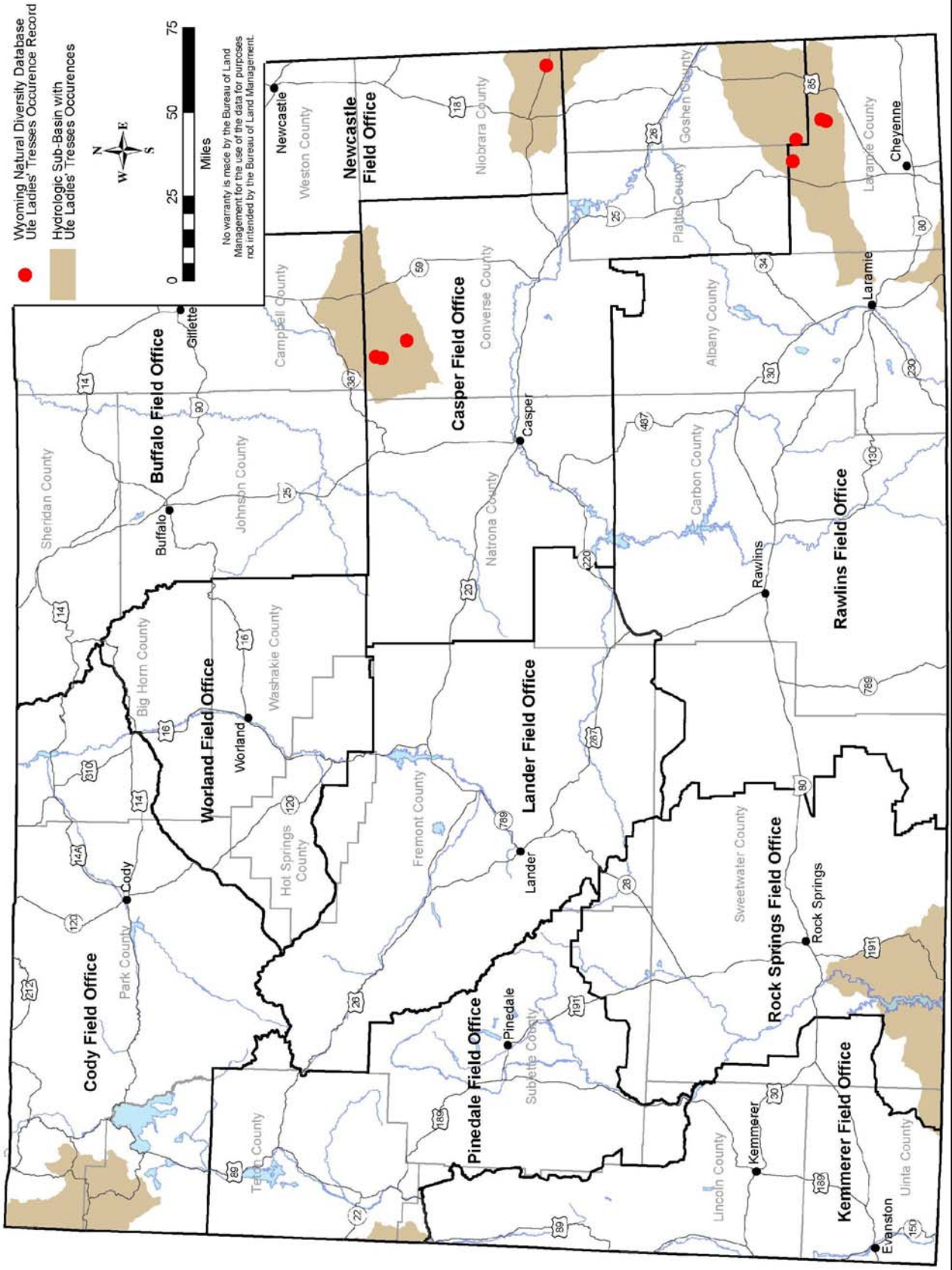
These determinations are further defined in the USFWS Endangered Species Consultation Handbook (USFWS 1998), as summarized in the following text.
"No effect" means there are absolutely no effects to the species and its critical habitat, either positive or negative. A no effect determination does not include small effects, or effects that are unlikely to occur. If effects are insignificant (in size) or discountable (extremely unlikely), a determination of "not likely to adversely affect" is appropriate.

"Not likely to adversely affect" means that all effects to the species and its critical habitat are beneficial, insignificant, or discountable. Beneficial effects have contemporaneous positive effects without adverse effects to the species (for example, there cannot be "balancing," so that the benefits of the action would outweigh the adverse effects). Insignificant effects relate to the size of the impact and should not reach the scale where damage or destruction occurs. Discountable effects are considered extremely unlikely to occur. Based on best judgment, a person would not: (1) be able to meaningfully measure, detect, or evaluate insignificant effects; or (2) expect discountable effects to occur (USFWS 1998). In cases where determinations of "not likely to adversely affect, due to beneficial, insignificant, or discountable effects" are made, BLM must obtain written concurrence from USFWS.

"Likely to adversely affect" means that the action would have an adverse effect on the species. Any action that would result in damage or destruction of an endangered or threatened plant species is considered an adverse effect. A combination of beneficial and adverse effects is still considered "likely to adversely affect," even if the net effect is neutral or positive. Adverse effects are not considered discountable because they are expected to occur. In addition, the probability of occurrence must be extremely small to qualify as discountable effects. Likewise, an effect that can be detected in any way or that can be meaningfully articulated in a discussion of the results of the analysis is not insignificant; it is an adverse affect. Determinations of "likely to adversely affect" for listed species require formal section 7 consultation under the ESA.

General determinations for statewide management programs are provided in Chapter 3. Field-office-specific determinations in this BA are provided for each program type described in the RMPs for all 12 RMPs in **Table 3-1**, Chapter 3.

Map 1 - Wyoming Ute Ladies' Tresses Orchid Map



The areas mapped above (**Map 1**) are hydrologic sub-basins that contain populations of the orchid. The three occurrences on BLM land in Converse County are in the Antelope Creek sub-basin, the occurrence on the Niobrara River in Niobrara County is in the Niobrara River sub-basin and the remaining occurrences in Goshen and Laramie Counties are in the Horse Creek sub-basin. The other shaded sub-basins are those that have orchid occurrences in other adjacent states, i.e.; the shaded area in Teton County is a portion of the Snake River sub-basin that also occurs in Idaho where an occurrence of the orchid is documented.

2.0 SPECIES INFORMATION

LISTING STATUS

The Ute ladies' tresses orchid (*Spiranthes diluvialis*) is a Federally listed threatened species. The Natural Heritage rank is G2 and S1, meaning that the species is imperiled because of rarity on the global level (often known from six to 20 locations) and critically imperiled because of extreme rarity on the state level (known from five or fewer occurrences). WYNDD lists the orchid as sparse and a High Conservation Priority.

Distribution

Populations of the orchid occur in southeastern Wyoming, western Nebraska, north central Colorado, northeastern and southern Utah, east central Idaho, southwestern Montana, and central Washington (Fertig 2000b). The orchid is currently known from eight sites in eastern Wyoming, including: a small population along a tributary to Antelope Creek (a tributary to the Cheyenne River); a population along North Wind Creek, a tributary to Antelope Creek; a population along Stinking Water Creek, a tributary of Sand Creek, which is a tributary to Antelope Creek – all three of these populations are on BLM lands in northwest Converse County (Casper FO); one population along Bear Creek in southwestern Goshen County (Casper FO) and a second population along Bear Creek in northcentral Laramie County (Rawlins FO) – both of these populations are on State lands; a large population along the Niobrara River near McMaster's Reservoir in southeastern Niobrara County (Newcastle FO) on private land; and two populations along Sprager Creek in Laramie County (Rawlins FO) on privately owned lands. Another population occurs on private lands in the Horse Creek watershed in Laramie County (Rawlins FO), but due to the wishes of the landowner, is not shown on **Map 1**. These populations were all discovered between 1993 and 2005. They are monitored on a limited basis and appear to be stable. Mowing occurs on at least four of the sites and grazing occurs on all of the sites and appears to have only minor impacts on the populations (Fertig 2000a). In fact, the combination of mowing and grazing appears to be a beneficial affect to the orchid on the private parcels.

Because it may not flower or emerge every year, additional unknown populations may exist throughout the state. However, as of 2002, only four populations had been documented in Wyoming (Fertig 2002). The total number of individuals from known populations within the state is estimated at approximately 3,000 to 4,000 plants in a total area of about 50 acres, although the population numbers may fluctuate from year to year. Populations range in size from small patches of 12 to 35 individuals to the largest population of 1,000 to 2,000 plants.

ECOLOGY

Habitat Description

The orchid is an endemic orchid that occurs primarily in seasonally moist peat, sand, silt, or gravel soils near wet meadows, springs, lakes, ponds, or perennial streams. The orchid establishes in open grass and forb dominated riparian areas that are not particularly dense or overgrown (Coyner 1989, 1990; Jennings 1989, 1990). The orchid seems generally intolerant of shade, though a few populations in eastern Utah and Colorado occur in riparian woodlands. Most populations occur as small, scattered groups occupying relatively small areas within the riparian system. Populations occur in mesic or wet meadows near riparian edges, gravel bars, and old oxbows along perennial streams at elevations ranging from 4,000 to 7,000 feet. Most sites are sub-irrigated and seasonally flooded, remaining moist into the summer.

The orchid is well-adapted to periodic disturbances from stream movement and grazing (USFWS 1995). It is known to establish in heavily disturbed sites, such as revegetated gravel pits; heavily grazed riparian edges; and along well-traveled foot trails on old berms (USFWS 1995).

Species Description

The species is a perennial plant with stems 20 to 50 centimeters (cm) tall, arising from tuberous-thickened roots. Basal leaves are linear, up to 1 cm wide and 28 cm long. Leaves are smaller in size and number higher up the stem. The species is characterized by a flowering stalk 3 to 15 cm long with numerous small, ivory white flowers arranged in a helix at the top of the stem. The lip petal is oval to lance-shaped, narrowed at the middle, and has wavy margins. Sepals are separate or fused only at the base and often spread at their tips. In general, the orchid blooms from late July to early September, however it does not necessarily flower every year. The peak of flowering occurs in Wyoming around the 10th of August, but is dependent upon temperature and moisture. It reproduces by seed only.

The orchid is commonly associated with horsetail (*Equisetum* spp.), milkweed (*Asclepias* spp.), verbena (*Verbena* spp.), blue-eyed grass (*Sisyrinchium montanum*), reedgrass (*Calamagrostis* spp.), goldenrod (*Solidago* spp.), and arrowgrass (*Triglochin* spp.). The orchid has an irregular flowering tinetable, and the ability to persist below ground for years between periods of flowering. Similar species in Wyoming include hooded ladies'-tresses orchid (*Spiranthes romanzoffiana*), which typically occurs in montane wetlands above 8,000 feet, and leafy white orchid (*Platanthera dilitata*), which has a more elongate inflorescence and broader leaves (Fertig 2000b).

Threats

Orchids, in general, are not common plants. Most are rare in their distribution. This makes it difficult to assess the stability of any given population. Furthermore, the naturally occurring low population numbers make the species susceptible to localized extinction caused by natural or man-made disasters. Historical accounts typically help realize the population trends, but populations in Wyoming were not discovered until 1993. Although no trend data are available, populations in Wyoming are considered stable (Fertig 2002). Continued presence/absence surveys and population studies will provide data necessary to quantify statewide trends in distribution and populations.

Changes in large ungulate populations have probably affected the distribution of the orchid. This species likely evolved according to the seasonal presence of large herbivores such as American bison, elk, deer, and bighorn sheep. Changes in these species' distribution could have negatively impacted the orchid populations by removing them during late winter and early spring, possibly leading to a buildup of live and dead vegetation. Additionally, cattle grazing may alter both plant communities and stream ecology. Depending when a site is grazed, there is the possibility of removing flowering or fruiting stalks. With cattle introduction there runs the risk of noxious weed invasion. Both Canada thistle, reed canarygrass , and leafy spurge pose threats as they compete vigorously with the orchid.

Herbicides applied to control noxious weeds and fertilizers from agricultural fields possibly affect the orchid. Both direct applications to nearby agricultural fields and runoff from sites upstream have potentially harmful effects on orchids. Pesticides applied to nearby sites could affect bumblebee populations, which are the orchid's primary pollinators.

Development in or near wetlands certainly has had an effect on the distribution of the orchid. Water diversion, channelization, and irrigation have all impacted the species. All of these factors decrease the

input of water into riparian systems or completely destroy habitat, thus eliminating potential habitat for this species. Conversely, some irrigated plots have proven to create habitat for the orchid.

ENVIRONMENTAL BASELINE

The environmental baseline describes past and current factors in the area that may have contributed to the current status of the species and protective measures that are currently in place.

Nine populations of the orchid occur in Wyoming in eight sites, in the following counties: Goshen, Laramie, Converse, and Niobrara. Three of these, the Converse County populations, are on BLM land in the Casper FO. The population in Goshen County is on state land, and the other five populations are on state or private land. The populations that are not on BLM land do not have any mineral estate under them. Federal involvement by the BLM would only occur on the three known populations in Converse County. Baseline data on all occurrences are, however, addressed here.

All populations have been grazed in the past (primarily by cattle) with varied grazing intensities.

The sites on BLM land have not been developed. Development, including homes and associated roads, has occurred near the other sites. Noxious weeds are present at all eight sites with varying degrees of infestation. Broad-scale treatment has not occurred on these sites, though some small-scale mechanical and chemical treatments may have occurred.

Although the remaining seven FOs have been inventoried to various amounts, presence of the orchid has not been confirmed on BLM land or non-Federal lands within these FOs. However, the orchid has been found on non-Federal surface lands in the Newcastle and Rawlins FOs. As further surveys are conducted, previous and current factors affecting areas with the orchid will be addressed on a case-by-case basis.

The degree of noxious weed invasion may vary widely in potential habitats. Sites may be completely free of weeds or have a wide-scale invasion, thereby influencing orchid populations.

3.0 ANALYSIS OF GENERAL PROGRAM DESCRIPTIONS

The proposed actions for the 12 RMPs, covering all 10 field offices, are summarized below. The management actions have been combined in this section to more efficiently discuss the general types of activities and management actions that occur programmatically throughout the Wyoming BLM field offices. The following sections describe the management actions that may affect the orchid. For specific management program information, please refer to each RMP. These can currently be reviewed online by accessing the Wyoming BLM Resource Management Plans website (www.blm.gov/planning/links.html). Following the descriptions and determinations is a table (**Table 3-1**) summarizing the effects determinations for all programs under all RMPs.

Access

Management Actions

The objective for access management is to provide suitable public access to BLM-administered public lands. This may include acquiring new access where needed, maintaining and expanding existing access facilities, or abandoning and closing access where it is not compatible with resource values and objectives.

Access across private lands will be pursued as needed through a variety of methods including, but not limited to, purchase of rights-of-way or easements, land exchange, reciprocal rights-of-way, and other statutory authorities. Specific routes and acquisition procedures for securing access are determined through route analyses and environmental analyses as part of specific project and activity planning. Access acquisition needs (typically for roads) are most commonly identified for public access for recreational use, timber harvests, grazing, etc. This may be for hunting, sightseeing, rockhounding or general exploring. Acquisition of access to public lands has been identified in locations that would provide the public with an opportunity to utilize resources that have previously been unavailable because the public lands had no public access. An increase in access could result in an increase in human activity in an area that previously had little activity, development of roads, trails, parking areas and other facilities to enhance the public's use of the area. The construction of access roads, trails, parking areas, and other associated facilities would require the use of heavy equipment and machinery, as well as surface disturbance at the site. Where appropriate, land exchanges or cooperative agreements are considered to provide access needs.

Areas with high road densities may be evaluated to determine needs for specific road closures or rehabilitation. Specific mitigation measures and design requirements for roads are developed through environmental analyses as part of specific projects or activity planning. Access closure, abandonment, and acquisition are considered and established through activity planning and environmental analysis processes. Road or trail closure and abandonment is based on desired road or trail densities, demands for new roads, closure methods (e.g., abandonment and rehabilitation, closures by signing, temporary or seasonal closures), type of access needed, resource development or protection needs, and existing uses.

Effects Analysis

Any new access, primarily access roads, through riparian areas may destroy individual plants and could alter stream dynamics resulting in loss of habitat. Culverts would likely be placed in streams where roads intersect them, potentially impacting the orchid's habitat. However, given the BLM-committed conservation measures (see Section 4.0), wetland and riparian areas will be avoided, or their impacts will be minimized, on BLM lands, thereby minimizing impacts to the orchid.

Determination

Implementation of access management actions **may affect**, but is **not likely to adversely affect**, the Ute ladies'-tresses orchid due to **discountable effects**. This determination is based on the avoidance of riparian areas wherever possible and the conservation measures in place (see Section 5.0) for riparian areas during road construction.

Air Quality

Management Actions

The objective of air quality management is to maintain or enhance air quality, protect sensitive natural resources and public health and safety, and minimize emissions that cause acid rain or degraded visibility. Typical air quality management includes dust control, weather monitoring, and air quality data monitoring. The air quality management program may evaluate or restrict surface development. The BLM requires that operators cover conveyors at mine sites, restrict flaring of natural gas, limit emissions, and restrict spacing on projects.

BLM-initiated actions or authorizations are planned in accordance with Wyoming and national air quality standards. This is accomplished through coordination with the Wyoming Department of Environmental Quality (WDEQ) and the U.S. Environmental Protection Agency (EPA). Laws controlling air pollutants in the United States include the Clean Air Act of 1970 and its amendments, and the 1999 Regional Haze Regulations. The concentrations of air contaminants in the planning area need to be within limits of Wyoming ambient air quality standards (WAAQS) and national ambient air quality standards (NAAQS). Both WAAQS and NAAQS are legally enforceable standards for particulate matter (PM10), nitrogen dioxide (NO2), ozone, sulfur dioxide (SO2), and carbon monoxide (CO). Air quality stations used to monitor particulates, if located in the orchid's habitat, could cause disturbances through the building/construction of the station and associated access roads, maintenance and upkeep, and equipment reading and repair. No known monitoring stations are currently in the orchid's habitat on BLM lands in Wyoming, although additional Federal and state funded stations are being placed in Wyoming annually.

In addition to NAAQS and WAAQS, major new sources of pollutants or modifications to sources must comply with the New Source Performance Standards and Prevention of Significant Deterioration (PSD). The PSD increments measure PM10, SO2, and NO2. The PSD program is used to measure air quality to ensure that areas with clean air do not significantly deteriorate while maintaining a margin for industrial growth.

Effects Analysis

Air quality management actions are typically associated with limitation, reduction, and monitoring of pollutants and dust during other BLM management actions. It is possible that activities associated with dust abatement (water trucks, etc.) could occur near the orchid's habitat and result in a decrease in dust settling on leaves and flowers, benefiting the plants through improved photosynthesis and improved pollination success. These effects would be only in localized areas, and the actual effects to the orchid would be minimal. Most air quality management actions would result in secondary beneficial effects due to decreased particulates in the air. No known direct or indirect negative effects to the orchid are anticipated through air quality management actions.

Determination

Implementation of air quality management actions **may affect**, but is **not likely to adversely affect**, the Ute ladies'-tresses orchid, due to **beneficial effects**. This determination is based on the potential for management actions to maintain or improve the condition of air quality through decreased airborne particulates in riparian habitats associated with the orchid.

Areas of Critical Environmental Concern

Management Actions

The objectives of special management areas, such as Areas of Critical Environmental Concern (ACECs), are to ensure continued public use and enjoyment of recreation activities while protecting and enhancing natural and cultural values. They offer opportunities for high-quality outdoor recreation. Other objectives include improving visitor services related to safety, information, and interpretation as well as developing and maintaining facilities.

ACECs can be identified based on many criteria including but not limited to: cultural, historic, scenic significance, fish and wildlife resources, and natural hazards. In the case of an ACEC designation due to natural hazards (e.g. a dangerous landslide area) management actions may include a prohibition on use of the area for recreational activities. Because an area is designated as an ACEC doesn't necessarily mean that development actions are precluded in the area. The only required ACEC prescription is to have at least one management action developed which provides special management attention (Easley 2005).

Under the Special Areas Management program, the BLM closes areas where accelerated erosion is occurring, applies restrictions on ground-disturbing activities, and implements restrictions on logging and heavy equipment use. Recreational trails could be built and land exchanges pursued. Activities also ensure protection of petroglyphs, artifacts, and cultural deposits from weathering and vandalism. The BLM evaluates noxious weed and grasshopper control measures. Significant sites and segments along the Oregon/Mormon Pioneer Natural Historic Trails will be designated as ACECs.

Special Management Areas are those areas where a decision to focus a special emphasis management of some kind was made in the RMPs. Not all of the RMPs specified in detail the kinds of management needed in the ACECs. For some ACECs a plan was to be developed at a later date that would outline and specify management actions. Activities in each of the ACECs will be similar to those contemplated under the various other management actions, except that additional restrictions on ground disturbance will be applied. Special restrictions will be applied to management actions in ACECs that include cultural and paleontological resources, minerals, fire, ORV, vegetation and soils, and wildlife habitat. None of these additional restrictions is specifically directed toward protecting habitats for the orchid, but they may indirectly benefit potential habitat by preventing some disturbances. The designation of ACECs in an RMP is simply a designation, and does not automatically convey specific management or protections, although with designation, some resource management protections are spelled out and implemented. If access roads or other types of facilities are specifically required, then these will be described within the appropriate activity section in this document. If an area is designated as an ACEC, it will require a plan of operations to be completed for any operations causing surface disturbance greater than causal use and a National Environmental Policy Act (NEPA) review before locatable mineral claims can be explored, mined and developed (43 CFR 3809 regulations). Generally, ACEC status is a beneficial impact on wildlife and plant species.

Effects Analysis

No known occurrences of the orchid occur within any ACECs in Wyoming. In areas with potential habitat, BLM management generally restricts ground disturbance within ACECs and seeks to protect those sites by maintaining them in a natural condition.

Determination

Implementation of ACEC resource management will have **no effect** on the Ute ladies'-tresses orchid. This determination is based on the absence of known populations within any ACECs in Wyoming. However, if orchid populations were identified within an ACEC, the current management practices would be considered **beneficial** to the species.

Cultural Resources

Management Actions

The objective of cultural resource management is to protect, preserve, interpret, and manage significant cultural resources for their informational, educational, recreational, and scientific values. Site-specific inventories for cultural resources would be required before the start of surface disturbance or if BLM-administered lands were proposed for transfer out of Federal ownership.

The BLM performs inventories as well as land management. During inventory activities, the BLM inventories, categorizes, and preserves cultural resources, conducts field activities, performs excavations; maps and collects surface materials, researches records, and photographs sites and cultural resources. Inventory data collection is used for documentation and development of mitigation plans before other resource program surface disturbance. Inventory activities commonly entail the use of hand tools, power tools, or heavy machinery. These inventories are divided into Class I, Class II, and Class III. The BLM normally completes cultural resource inventories in response to surface-disturbing projects. Survey intensity varies among inventories, which may involve two to seven individuals and trucks, and may last from one day to several weeks.

Cultural resource land management involves managing sites for scientific, public, and sociocultural use by developing interpretive sites and preparing interpretive materials. Use limiting activities include restricting certain land uses, closing certain areas to exploration and prohibiting some surface-disturbing activities. This program also allows the collection of certain invertebrate fossils. Archeological collections are authorized through a permit system. The cultural resource program may authorize installation of fencing to protect trail segments, stabilize deteriorating buildings, acquire access to sites when necessary, perform certain surface-disturbing activities, pursue land withdrawals, explore and develop locatable minerals, designate avoidance areas, pursue cooperative agreements, and identify and interpret historic trails. Cultural resource interpretive sites, such as historic trails or rock art sites, may be developed to provide public benefits such as scenic overlooks, signs, and walking trails.

Adverse effects on significant cultural resources are mitigated by avoiding surface disturbance in culturally-rich areas, as well as by managing sites and structures for their cultural importance. Surface disturbance is avoided near significant cultural and paleontological resource sites and within ¼ mile or the visual horizon of significant segments of historic trails and canals. Sites listed on, or eligible for, the National Register for Historic Places (NRHP) are protected and would be managed for their local and national significance in compliance with the National Historic Preservation Act, the Archaeological Resources Protection Act, the American Indians Religious Freedom Act, and the Native American Graves Protection and Repatriation Act, as appropriate.

Effects Analysis

Most of the activities associated with cultural resource inventories, including surface surveys, record searches, and artifact characterization would not affect the orchid. More intensive excavation efforts do have the potential to harm this species if such activities occurred in occupied habitats. As with any surface disturbing activity, a pre-construction presence or absence survey would be conducted in potentially suitable habitats prior to excavation. Direct and indirect effects to occupied habitats would be avoided. Development of interpretive sites will, of necessity, occur where the cultural objects and sites themselves are located. If such a site were discovered or occurred in the orchid's habitat, it could create a conflict. However, the likelihood of this event is extremely remote.

Determination

Implementation of cultural resource management actions **may affect** but are **not likely to adversely affect** the Ute ladies'-tresses orchid, due to **discountable effects**. This determination is based on the avoidance of occupied habitat for surface disturbing cultural resource activities, the conservation measures BLM currently has in place regarding implementation of cultural resource inventories, and the low likelihood that an interpretive site would occur or be developed in the orchid's habitat.

Fire

Management Actions

The objectives of fire management are to restore the natural role of fire in the ecosystem and to protect life, property, and resource values from wildfire. The two major activities involved with the BLM's fire management are prescribed burning and wildfire suppression.

Prescribed fire objectives are to restore natural fire regimes and enhance rangeland habitats for livestock and wildlife. The prescribed fire program authorizes fire plans, firebreaks, prescribed burns, and coordination with necessary parties on a case-by-case basis. Some prescribed fires are conducted to dispose of slash and residue from timber sales, improve wildlife habitat and grazing potential, or to reduce hazardous fuel loads.

Wildfires threatening higher resource values, including commercial timber areas, developed recreation sites, and areas of wildland/urban interface, or fires with potential to spread to private, state, or other Federal lands are suppressed. Fire suppression activities vary with the intensity of the wildfire and are conducted on an emergency basis. However, wildfire planning is done in advance to determine what kinds of suppression activities will be allowed in a planning unit, where they will be allowed, and what kinds of equipment will be used. In the event of a wildfire and immediate suppression is required, as many conservation measures as possible will be applied that do not hinder safety or property protection. The USFWS will be contacted and emergency consultation will take place at the earliest possible time if T&E species or their critical habitats are affected or impacted. Fire plans also identify any special concerns or values that need to be protected. Fire lines are constructed to contain the wildfire. Water is withdrawn from nearby sources to suppress fires. Chemical fire suppression agents containing chemical dyes may be used, if needed. The use of aerial fire retardant is restricted near water resources. After a fire is extinguished, the BLM may use rehabilitation techniques to restore a burned or suppression area to its previous vegetative cover. The BLM uses a technique called the Analysis of Burned Area Emergency Rehabilitation (BAER) on all areas damaged by fire. This technique is used to evaluate the impact of restoration efforts on the ecosystems involved.

Activities authorized by this program include tree thinning, construction of roads and fire lines using hand tools to heavy equipment, application of fire-suppressing chemicals by hand and aerial application, and revegetation and mulching stream banks for rehabilitation. Activities often employ the use of off-road vehicles, hand tools, and heavy equipment such as bulldozers.

Effects Analysis

Wildland fires are not expected to directly affect the orchid, because the plant typically occurs in subirrigated, alluvial soils. These areas typically do not burn frequently because of the presence of nearby surface and subsurface water, and the lack of significant fuel associated with orchid's habitat. For these reasons, prescribed burns are also not common in these types of habitats.

Heavy machinery associated with fire suppression and fire prevention could potentially destroy habitat and individuals. However, because wildland fires and prescribed burns are considered rare events in these habitats, this type of impact is unlikely to occur.

Determination

Implementation of fire management **may affect**, but is **not likely to adversely affect**, the Ute ladies'-tresses orchid due to **discountable effects**. This determination is based on the extremely limited potential for fires (both wildland and prescribed) to occur in habitat for the species and the same limited probability that fire equipment would be used in the orchid's habitat. If a wildland fire were to occur within any of the known habitat for the orchid and immediate suppression is required, as many conservation measures as possible will be applied that do not hinder safety or property protection. The USFWS will be contacted and emergency consultation will take place at the earliest possible time if any known habitat for the orchid is affected or impacted.

Forest Resources

Management Actions

The objective of forest management is to maintain and enhance the health, productivity, and biological diversity of forest and woodland ecosystems and to provide a balance of natural resource benefits and uses, including opportunities for commercial forest production. BLM multiple use management prescriptions shall provide for forest products, recreation, livestock grazing, wildlife habitat, as well as the protection and enhancement of other resources.

The forestry program allows the commercial cutting and removal of diseased trees, disease treatment by spraying, herbicidal spraying of grasses and shrubs, and pre-commercial thinning, chaining, and shearing, as well as clearcuts, slash disposal, logging, helicopter logging, and skidder-type and cable yarding may be allowed during timber harvest. Other commercial uses may include post and pole harvest and the removal of wildlings for transplanting purposes. Non-commercial timber harvest under individual permits involves collection and cutting of firewood, Christmas trees, posts, poles, and wildling removal in stands or areas with good public access. The BLM ensures that site regeneration and stand replacement follow timber harvesting. Forest management activities may include conducting surveys; acquiring easements on private, state and other Federal agency lands; designing and developing roads; and installing erosion control, such as drain culverts and water bars.

Timber harvesting occurs on commercial forestlands with slopes less than 45%. Commercial operations are authorized under sale contracts or permits. Individual authorized clearcuts may not exceed 20 acres. Areas within 200 feet of surface water are prohibited from harvest. Slash is to be lopped and scattered,

roller chopped, or burned. Regeneration areas are often enclosed by fence to prevent wildlife and livestock from damaging seedlings.

Forest stand inventories are conducted prior to any management activities, and regeneration surveys are performed following stand management activities. During forest management activities for timber harvest, the BLM allows forest stand improvement activities (initial thinning) of young trees (i.e., regeneration growth usually less than 15 feet in height) in forest stands. This activity may or may not require minimal road construction, and the trees are simply laid down with a chainsaw at a set spacing distance and left where they drop to decay. Pre-commercial harvest and removal of diseased trees and pre-commercial thinning of young trees is conducted to reduce the density of smaller trees, and thereby allowing the remaining trees to have better access to available nutrients, water, and light. These activities generally require creation of minimum to light road or two-track trail construction for access, and use of chainsaws and possibly some light yarding equipment for lay down and retrieval of trees. During commercial harvest activities, the BLM allows removal of commercial size trees (i.e., saw logs), ensures slash piling or lop-and-scatter disposal of debris, allows commercial thinning of saw logs under some types of silvicultural treatment, and allows use of both skidder and cable yarding of harvested trees. Generally, light to medium roads are constructed to the harvest stand and yarding areas and load out landings are built in the sale area to facilitate the removal of logs, utilizing heavy equipment. Trees are laid down with chain saws or harvester machines. During restoration efforts following timber harvest activities, the BLM ensures site re-contouring of landings and most roads, and revegetation of the sale area, as needed. All the above activities require the use of vehicles and human presence.

Currently, cottonwood and willow trees are not harvested by the BLM in Wyoming. Non-commercial woodlands (e.g., riparian areas) are managed to optimize cover and enhance habitat for wildlife and to protect the soil and watershed values.

Effects Analysis

Activities associated with forest resources are not allowed within 500 feet of surface water. Orchid habitat generally lies within this 500-foot buffer, and therefore, would not be disturbed by activities associated with forest resource management. Additionally, the habitat for this species does not occur in forested areas, most forested areas within Wyoming are above the 7,000 foot elevation limit for the orchid and the orchid grows primarily in areas devoid of a forest overstory, so it is unlikely that the species would be found near any timber harvest area or other forest-related management activity. Activities associated with forest resources may occur both upslope and upstream of habitat for the species. This could change the volume of water in orchid habitat due to a reduction in ground cover and an increase in overland water flow and possibly a minimal increase in sedimentation in riparian habitat used by the orchid. However, timber harvests conducted on BLM lands are generally less than 20 acres and any changes in water flow would be negligible. No timber harvests on BLM lands are planned upstream from any known habitat for the orchid in Wyoming. Activities associated with forest resources generally occur on forested lands and the orchid occurs in Wyoming on lower-elevation short-grass prairie, and therefore would not be disturbed by activities associated with forest resource management. Currently in Wyoming there are only between one to six timber sales on BLM lands each year, and all are less than 40 acres (usually less than 20 acres). No impacts to the orchid's habitat are anticipated on BLM lands in Wyoming due to forest resource management.

Determination

Implementation of forest resource management actions are expected to have **no effect** on the Ute ladies'-tresses orchid. This determination is based on the lack of forest management activities occurring in

orchid habitat and the lack of changes in water flow from forest management activities in the orchid's habitat.

Hazardous Materials

Management Actions

The primary objective of hazardous materials management is to protect public and environmental health and safety on lands administered by BLM. Hazardous materials management also seeks to comply with Federal and state laws to prevent waste contamination caused by BLM-authorized actions, and to minimize Federal exposure to the liabilities associated with waste management on public lands.

Hazardous materials and waste management policies are integrated into all BLM programs. Public lands contaminated with hazardous wastes are reported, secured, and cleaned according to Federal and state laws, regulations, and contingency plans. Warnings are issued to potentially affected communities and individuals if hazardous material is released on public land. If a spill of hazardous materials occurs, the site will be reported, secured, and cleaned and an emergency consultation conducted with the USFWS.

Effects Analysis

The goal of the hazardous materials program is to protect the environment from these materials. Hazardous material disposal is not allowed (typically) on BLM lands. In the event that hazardous material disposal were allowed, it is extremely unlikely that such activity would occur within or near wetland and riparian areas. An accidental spill could occur during transportation of hazardous materials. If this occurred in the orchid's habitat, it would be detrimental to the population, however, it is extremely unlikely that one would occur within orchid habitat. If cleanup of a hazardous materials spill was required, there could be negative impacts to the orchid's habitat. However, it is extremely unlikely that such activity would occur at all, and more unlikely that it would occur within or near the orchid's habitat.

Determination

Implementation of hazardous material management actions **may affect**, but is **not likely to adversely affect** the Ute ladies'-tresses orchid due to **discountable effects**. This determination is based on the extremely low potential for an accidental spill and resulting clean-up operations to occur in an area that contains the orchid .

Lands and Realty

Management Actions

The objectives of the lands and realty management program are to support multiple-use management goals of the BLM resource programs; respond to public requests for land use authorizations, sales, and exchanges; and acquire and designate rights-of-way access to serve administrative and public needs.

Public land tracts that are not critical to current management objectives will be disposed of through the realty management program. Non-Federal lands may be acquired through exchange in areas with potential for recreation development or in areas containing important wildlife, cultural, scenic, natural, open space, or other resource values. Generally lands with special status species (SSS), which includes threatened and endangered species, are not eligible for disposal and are retained in Federal ownership for management of those species. Protective withdrawals may be established to protect and preserve important resource values, but require extensive mineral investigations.

Realty management authorizes occupancy of public lands for roads, power lines, pipelines, communication sites, and irrigation ditches authorized by granting a right-of-way. Rights-of-way management actions respond to public requests for access, land authorizations, sales, and exchanges. These rights-of-way may be temporary or may extend for years. If restricted types of rights of way are required in avoidance areas or when such areas cannot reasonably be avoided, the adverse effects of construction will be intensively mitigated in these areas. Most rights-of-way require the use of medium to heavy equipment, vehicles and human presence during their construction.

The program pursues cooperative agreements, develops recreation site facilities, considers offsite mitigation, minimizes access in wildlife habitat, fences revegetation sites, blocks linear rights-of-way to vehicle use, considers temporary-use permits, considers new withdrawals, and leases acres for landfills.

Access management generally supports other resource management programs and is authorized under the Realty Management Program. The BLM rehabilitates access roads that are no longer needed, proposes easement negotiations, pursues access across private lands, acquires rights-of-way or easements, and exchanges lands.

Public lands can be considered for sale or disposal on a case-by-case basis when a definite need for the land is identified and the proposal meets the requirements of the Recreation and Public Purpose (R&PP) Act and local land use plans. Leasing public lands for landfills is allowed under the R&PP Act, and sanitary landfills are common method of solid waste disposal. Cases are considered individually in mineral exchanges.

All BLM-administered public lands will be open to consideration for utility and transportation systems, but these systems will be located next to existing facilities whenever possible. Areas with important resource values will be avoided where possible when planning for placement and routes of new facilities. Effects will be intensively minimized if it becomes necessary to place facilities within avoidance areas.

Effects Analysis

Land disposal and transactions for recreation, exchanges, and disposal and establishment of corridors for utility/transportation systems may negatively impact orchid habitats. Although allowable under the RMPs, the BLM rarely conveys properties with high resource value, in particular, those with known threatened or endangered species. Conversely, land acquisitions and protective withdrawals may provide benefits to orchid habitat by providing conservation measures to protect threatened and endangered species and their habitats. While rights-of-way for roads, powerlines, pipelines, etc. may be requested to cross through the orchid's habitat, the orchid conservation measures (see Section 5) specify that new access roads will avoid occupied habitat for the orchid.

Determination

Implementation of actions associated with lands and realty **may affect**, but is **not likely to adversely affect** the Ute ladies'-tresses orchid due to **discountable effects**. This determination is based on the low potential for land disposal under BLM management, and the extremely low potential for land management activities to disturb or remove the orchid or its habitat due to the implementation of the orchid conservation measures. Land acquisition and protective withdrawal actions may have **beneficial** effects to the orchid by maintaining or acquiring potential habitats.

Livestock Grazing

Management Actions

The management objective of livestock grazing management is to maintain or improve forage production and range condition as a sustainable resource base for livestock grazing on the public lands while improving wildlife habitat and watershed condition.

Management actions on grazing allotments are prioritized by and classified into one of three management categories: maintain (M), improve (I), and custodial (C). Certain areas may be closed to livestock grazing because of conflicts with other resource uses including, but not limited to, re-harvesting timber sale areas, crucial wildlife or endangered species habitat, areas managed for prescribed fire, developed recreation sites, or education areas.

Range management activities include using prescribed fire, vegetation manipulation projects, changing the composition of existing vegetation, controlling noxious weeds, using mechanical or biological vegetative treatments to improve forage production, using heavy equipment, and herbicidal spraying of sagebrush. Cattle are the predominant class of livestock grazed on public lands in Wyoming, however, sheep, horses and bison are also authorized. Livestock grazing on public lands can cause trampling of plants and removal of vegetation to various stubble heights dependent on the number of livestock and the length of time livestock are allowed to graze an allotment.

Fencing activities authorized by the livestock grazing management program may include fence construction and repair, designing and implementing grazing systems, and building livestock exclosures for important riparian habitat. Water management activities associated with range management may include the development of reservoirs, springs, pipelines, and wells, and providing access to these developments. Permit and lease management activities include conducting monitoring studies, performing project work to enhance and improve riparian zones and uplands, managing stock driveways, and developing management plans and agreements.

In some cases cross fencing (subdividing an allotment, pasture or ranch by fencing) is used to accomplish management needs or when a parcel is leased by more than one lessee. Temporary fencing, including electric fencing may be authorized to accomplish management goals. Fencing might be used to reduce grazing intensity, distribute grazing away from important resources (streams, springs, riparian areas, wetlands, cottonwood galleries, etc.). When fencing is proposed, either permanent or temporary, fences are built to standards developed in the Fencing BLM Manual Handbook (H-1741-1, Fencing, Rel. 1-1572, 12/6/1989). These standards are required to reduce the amount of restriction or hazards to wildlife. Fence construction and maintenance would likely require access to the site, possible removal of vegetation or uneven surface materials (rocks, trees, sand, etc.), stringing wire, digging postholes, building fence braces, building rock jacks, cutting or removing on or off site building materials (fence posts, rails, gathering rocks, etc.), weed management (spraying, cutting, pulling, etc.), or if the project is large enough, the possibility of camps for workers. The use of corrals for confinement of livestock for various purposes (sheep shearing, overnight holding of livestock, etc.) would require construction and maintenance activities including, hauling building materials, heavy equipment use, access to the corral site, etc.

The livestock grazing program may also include rangeland improvements such as stock water ponds, pits, or reservoirs; pipeline and trough systems; spring developments; storage tanks and troughs; wells; or temporary tanks and water hauling. These off-stream water improvements better distribute the use and intensity of use by livestock away from streams, rivers or wetlands and help protect important riparian

areas occupied by the orchid, but could require the use of hand tools, mechanical or heavy equipment, hauling/transporting materials (gravel, dirt, tanks, etc.), and clearing vegetation. Placement of salt and mineral blocks or riding horseback and physically moving livestock are other forms of livestock distribution.

Rangeland restoration to improve range health is also a part of livestock management. These activities might include aerial seeding and possibly herbicide application, seeding by disking or drilling (using a tractor or other heavy equipment), fertilizing, plowing, chaining, or rangeland pitting.

Most livestock operators use off-highway vehicles (OHVs), i.e.: pick-up trucks; off road vehicles (ORVs), i.e.: motorcycles or "4-wheelers," or ride horseback or walk to access their allotments. "Herding " (moving) livestock through walking, horseback riding, and the use of dogs to distribute livestock on allotments or trailing (move them from one location to another - on or off of allotments), and the use of domestic sheep bed grounds (a temporary site to bed down flock(s) of sheep) and associated sheep herder camps are commonly employed methods of livestock operations. Road construction and maintenance, for access to various livestock operations would again require heavy equipment use, possible mechanical vegetation removal or spraying with herbicides, and material hauling.

Forage needs for wildlife and adequate vegetation cover for watershed protection are considered before additional livestock use is authorized. Livestock management includes: authorizing livestock grazing, converting to new types of livestock, and adjusting season of use, distribution, kind, and number of livestock. Salt or mineral supplements may be provided, which causes livestock concentrations, but can also move or distribute livestock away from water sources.

Known occupied habitat for the orchid occurs on the eastern side of the state Grazing allotments in this area fall primarily under Sec. 15 of the Taylor Grazing Act of 1934. They are generally scattered in-holdings within a private ranch and are not within a designated grazing district (Taylor Grazing Act of 1934). A typical grazing parcel on public land would be permitted on a yearlong use basis with the amount of allowable forage identified as Animal Unit Months of use or AUM's. The livestock operator may, with concurrence from the BLM, change the use pattern from year to year to compliment healthy rangelands, depending on the available forage, condition of the pasture and weather conditions, or to achieve pre-determined management goals. Permits are normally issued for a 10 year period. If BLM personnel identify a need for specific management or a change in the current pattern of use it can be stipulated on the permit when it is re-authorized each year. Cattle are the predominant class of livestock grazed on these public lands. Typical grazing leases contain several small parcels of unconnected public land within a single lease. Generally livestock operators have a low percentage of public land in their total operation and pastures are predominately private lands with small parcels of public land scattered throughout an allotment.

Effects Analysis

Livestock grazing in riparian areas may lead to adverse environmental effects, including increased soil erosion, stream bank degradation, and noxious weed introduction. The BLM Standards and Guidelines for Livestock Grazing will reduce these impacts because their guidance calls for support of the hydrologic cycle to allow for stable soils, and for management of riparian vegetation to support native, resilient plants, among other things. Close to 100% of the BLM lands in Wyoming are open to livestock grazing, with most livestock operations utilizing vehicles to access their grazing allotments. However, light, infrequent grazing in orchid habitats may benefit the species by reducing competing vegetation (Fertig 1994). Improvements to grazing allotments intended to increase available forage, including use of heavy equipment and alteration of the existing composition of vegetation, may detrimentally impact the orchid's habitat, especially if improvements occurred near known occurrences. Additionally, there is a potential for management actions to limit grazing in riparian areas that are known to contain the orchid.

Three populations of the orchid have been found on BLM lands (all within the Platte River RMP planning area), but limited portions of the public lands included within grazing allotments have potential habitat for the orchid where grazing activities on public lands could influence grazing activities on adjacent private or state owned lands, as much of the public land is not fenced and livestock can travel from one ownership to another unimpeded. Animals (cattle, sheep, etc.) managed through the livestock grazing are able to graze occupied and potential habitat for the orchid unimpeded. Livestock grazing has the potential to result in the destruction of individual orchid plants by grazing and trampling. Implementation of the conservation strategies in Section 5 would minimize any impacts to the orchid from other livestock management activities.

Determination

Implementation of livestock grazing management **may affect** and is **likely to adversely affect** the Ute ladies'-tresses orchid. This determination is based on the potential for range management actions to occur within orchid habitat and result in destruction of individuals by grazing and trampling, and on the absence of measures included in this action that would minimize these negative effects, however, implementation of the conservation strategies in Section 5 would minimize any impacts to the orchid from other livestock management activities. Livestock grazing in some riparian areas may produce **beneficial effects** on orchid habitat, however, by reducing competing vegetation.

Minerals and Geology Resources

Management Actions

The lands administered by the Wyoming BLM contain some of the most prolific oil, gas, coal and trona producing areas in the Rocky Mountain region. Mineral development is subject to leasing, location, or sale based on the Federal mineral law (such as the Mineral Leasing Acts and amendments) covering a particular commodity. Conditions under which the development of these minerals can occur are determined through land use planning. The planning area will be open to consideration for exploration, leasing, and development of leasable minerals including oil, gas, coal, oil shale, and geothermal.

The objective of minerals management actions is to make public lands and Federal mineral estate available for orderly and efficient development of mineral resources. BLM's minerals program is divided into salable minerals, leasable minerals and locatable minerals.

Salable Minerals

Deposits of salable minerals are scattered throughout Wyoming. Salable minerals include common varieties of sand, gravel, sandstone, shale, limestone, dolomite, and granite rock. Historical use of these materials includes building materials, road surfaces, and tools. Today salable minerals are mainly used for maintaining roads on public lands and also for activities associated with the oil and gas industry.

BLM provides sand, gravel, and stone from Federal mineral deposits as necessary to meet the needs of Federal, state, and local road construction and maintenance projects in the planning areas. Before issuing contracts or free use permits for salable minerals, the BLM conducts the appropriate environmental analyses including special studies or inventories of cultural values, threatened or endangered plant and wildlife species, and other resources. Stipulations or conditions may be included in the terms of the contract or permit to ensure protection of the natural resources present and reclamation of the land following project completion. Sand and gravel, scoria, flagstone, moss rock, and other minerals are

available for free use or sale but are subject to conditions and stipulations developed on a case by case basis. Generally salable minerals are extracted using heavy equipment and moved using large haul trucks.

Site reclamation is required following any surface disturbing activity by mining for salable minerals. Reclamation includes removing all surface debris, recontouring, reducing steep slopes, and planting vegetation, all requiring the use of heavy equipment. All reclamation proposals must conform to State agency requirements and must be approved by BLM.

Salable minerals are disposed of (sold) under the Materials Act of 1947, as amended, and are discretionary actions.

Leasable Minerals

Leasable minerals include fluid (oil, gas, geothermal) and solid minerals such as coal, trona, and phosphate. Bentonite and Uranium are leasable on acquired lands.

Current use of coal is primarily for electric generation. Coal in Wyoming is most generally extracted using surface mining methods although in the past some coal was mined underground. Underground mining method is proposed for some future operations. Surface mining requires a Federal coal lease from the BLM, mining permits from the State, mine plans approved by OSM. Surface mining involves the use of large equipment such as draglines, shovels, haul trucks, etc. Small drill rigs are used for exploration to determine the location, thickness, and obtain cores (for determining quality). Extracting coal using surface mining methods often results in large areas of surface disturbance from road construction, removal of topsoil and overburden, and stockpiling of these materials. Once an area is mined out, reclamation begins and includes recontouring as closely to the original landscape as possible the reconstruction of drainages, reseeding and monitoring to assure the habitat is returned to pre-mining vegetative composition and condition. Coal is leased under the Mineral Leasing Act of 1920 and the Federal Coal Leasing Amendments Act of 1976.

Current uses of trona include baking soda, in paints, glass, toothpaste, soaps, ceramic tiles, porcelain fixtures, paper, water softeners and pharmaceuticals. Wyoming is the largest producer of trona in this country and has the largest known reserve of trona in the world. Trona is generally mined underground by the long-wall mining method. Surface facilities are generally processing plants, offices, and maintenance buildings along with associated roads.

Current uses of uranium are as a nuclear fuel for generation of electricity; nuclear explosives; in medicine, agriculture and industry as radiation for diagnostic tools, to detect welding problems, in the manufacture of steel products, or used to reduce the spoilage of certain foods. Uranium is generally categorized as a locatable, but becomes leasable on acquired lands. Uranium is generally mined underground. Surface facilities include processing plants, equipment maintenance buildings, parking areas and offices.

Leasable bentonite also occurs on acquired lands. Bentonite is surface-mined with heavy equipment including: shovels, haul trucks, etc. Drilling is used to locate the bentonite. Large areas of surface disturbance occur through removal of the overburden, overburden stockpiles, surface facilities and roads. Surface facilities include processing plants, equipment maintenance buildings, parking areas and offices.

Fluid leasable minerals include oil, gas, and geothermal steam. Leasing of oil and gas resources is under the authority of the Mineral Leasing Act of 1920 as amended. Leasing is administered by the BLM through a competitive and non-competitive system. BLM receives nominations of lands to be put up for

sale at the bimonthly competitive oil and gas sales. These nominations are gathered together into a parcel list and are sent to the respective field offices for the attachment of stipulations. These stipulations are derived from the Land Use Plan. The parcel list is returned to the BLM state office and once verified, is put together into the Notice of competitive oil and gas sale booklet. This Notice must be posted for the public 45 days before the lease sale is held. Once the parcel is sold, it is then issued as a lease.

Initial exploration for oil and gas resources is often conducted using geophysical methods. Geophysical exploration involves the use of ATVs and vehicles to lay geophones and drill holes for shot charges, or the use of vibroseis trucks (weighing 50-64,000 lbs.) to create sound waves instead of using charges, and then the removal of the geophones and reclamation of shot holes if used. Exploration for oil and gas (including coal bed natural gas) may also include the drilling of one or more wells to test for a reservoir and its productive viability. During the exploration phase of drilling, surface disturbing activities include the construction of roads, well pads, well drilling, reserve pits, and other facilities.

Prior to conducting site-specific drilling activities, a site specific EA is completed for each APD, or group of APDs. APDs are subject to site-specific conditions of approval which may be more restrictive than lease stipulations. Based on the environmental review, further timing and location restrictions may be added to protect local resources. Once an APD is approved, ground operations may begin. In traditional oil and gas operations, a minimum road capable of handling a well drill rig is constructed to the site. Roads may be two track unimproved roads to crown and ditched roads designed by an engineer. A level 'pad' ranging in size from 1-5 acres is constructed for drill rig and ancillary facility (e.g., pipe racks, production pits, parking areas, etc.) setup. Generally, there is an average of 3 acres of disturbance for each drill pad and 1 mile of road and 1 mile of pipeline for each drill site. This can vary widely with each project. Directional drilling requires a larger pad than required for conventional vertical wells. Size is dependent on the number of wells drilled from each pad.

A drillhole is started (i.e., spudded) and drilling continues until the targeted geologic formation is reached. One day to over a month may be required to drill the well depending on the type of well (vertical or directional), depth and type of rock strata encountered. If a well is not capable of producing economic quantities of oil or gas, it is shut in and plugged and marked and the surface is reclaimed to its previous condition. If a well is a producing well, production facilities (e.g., pipelines and/or storage tanks, water treaters, pipeline compressor stations, powerlines, pumpjacks, fencing, etc.) will be constructed, and road upgrades may occur to accommodate tank trucks used to haul the oil to a terminal or local refinery. Discovery of a producing area may result in additional wells being drilled and a pipeline system established to transport the oil or gas to a storage facility or terminal. Other localized surface uses associated with oil and gas development include construction of storage tank batteries and facilities to separate oil, gas and water. Compressor engines (can be gas/diesel powered or electric) may be required to move gas to a pipeline, and diesel, gas, or electric pumps and other related equipment may be needed to lift the oil, gas, or water from the well to the surface. If extensive reserves of oil are located field development may occur which would result in additional wells and transport systems with well spacing determined by the Wyoming Oil and Gas Conservation Commission. Development of oil and gas fields includes construction of the same types of facilities used during exploration, but in addition it may be necessary to obtain Federal rights of ways for product pipelines and power lines. Drilling and production operations and facilities are inspected and maintained regularly, and varying amounts of human and vehicle activity is present with all the above actions.

Water is often produced concurrently with oil and gas production and disposal methods can range from subsurface re-injection to direct surface discharge to discharge into a containment pond or pit. Some fields may have large volumes of water or very little water. Water that cannot be discharged to the surface because of its chemical makeup may be treated before surface discharge or may be reinjected.

When oil and gas wells are no longer capable of producing economic quantities of product, the field is closed out and abandoned. At each well location, all the "down-hole" and surface facilities are removed and the drillhole is plugged. The pad and production pits are reclaimed to existing standards, and a hole marker is placed at the well site. Reclamation involves revegetation by reseeding or planting and the recontouring of unneeded roads and unneeded portions of the well pads. Various types of heavy equipment and vehicles are used for these activities. Finally, the site is inspected, bonds are released as appropriate, and the site is declared closed.

Geothermal resources are available for exploration, development, and production and are subject to the same surface disturbing and other restrictions applied to oil and gas exploration, development and production. Similar to oil and gas leasing, the BLM administers geothermal leases through a competitive and non-competitive system. The Geothermal Steam Act of 1970 authorizes leasing. There are currently no geothermal steam leases in Wyoming at this time.

Locatable Minerals

Locatable minerals include gypsum, silver, gold, platinum, cobalt and other precious and base minerals. Bentonite and uranium are also locatable except on acquired lands.

Minerals are locatable under the 1872 Mining Law. Most public lands are open to location with the exception of lands withdrawn for other special management uses. The Mining Law of 1872 sets the requirements for lode claims, placer claims, and mill sites as well as discovery, location, annual filings, assessment work, and mineral examinations to establish validity.

BLM has no jurisdiction (non-discretion) over split estate lands for locatable minerals (private surface, Federal subsurface) in the event the mining claimant receives *written* permission to proceed with operations from the surface owner, or the mining claimant owns the surface lands and wishes to mine their lands. This exception applies to Stockraising Homestead Act (SRHA) lands. These lands are those patented under the former provisions of the Taylor Grazing Act (TGA), U.S.C. 315 (p) and Homestead Act (HA) lands that were patented under the provisions of the SRHA, as amended.

Effects Analysis

The potential for direct effects to the orchid will be minimized, because of the no surface occupancy (NSO) restriction for threatened and endangered species that is applied to energy and mineral development. Coordination and consultation with USFWS would occur prior to any proposed drilling, sundry activity, or mining for leasable minerals within known populations or suitable habitat. Both BLM and USFWS would be involved in project design to control the location of roads, pipelines, and other sundries that would be needed for exploration or development. Mineral exploration and development could currently only occur on the three parcels of BLM land in Converse County, however, no mineral activities are taking place in that general area at this time.

Because of the amount of minerals development throughout the state, indirect effects to orchid populations and habitats may occur. For example, although current exploratory wells for oil and gas pose no direct threat to the orchid, the discovery of new oil or gas reserves may impact orchid populations. Oil and gas development in areas near known populations of orchids could result in increased use of vehicles and improved access to the surrounding areas. These activities may negatively affect the species by displacing wildlife and livestock from disturbed habitats to sites that contain orchids. These displaced animals may trample individual plants and may introduce noxious weeds to the area. Increased human use in the area may also cause trampling and illegal collection of individual plants. Other indirect impacts may include elevated dust levels and vehicle exhaust emissions. However, existing populations and

potential habitats of the orchid are generally located along streams, which are generally afforded more protection than other habitats where minerals activities may occur.

Coalbed natural gas and reservoirs associated with developed water, especially in the Powder River Basin area, may result in discharge of water into existing streams or creeks or dry washes, which may possibly increase the potential habitat for the orchid, although the water often has a high salinity content and does not provide suitable habitat parameters for the orchid. Discharge of these waters into a watershed currently occupied by the orchid is unlikely, as no coalbed natural gas operations are near any known populations of the orchid. However, if the orchid population was to occur downstream from a water discharge point, it is highly likely that the contaminated water would kill those plants.

Geophysical exploration with 3-dimensional geophysical exploration, source lines may be as close as ¼ mile apart with similarly-spaced perpendicular lines, covering areas as much as 150 square miles (Oberlie 2004), although these operations would have to survey for and re-route around any habitat occupied by the orchid due to the orchid conservation strategies (see Section 5).

Determination

Implementation of minerals management actions **may affect**, but is **not likely to adversely affect** the Ute ladies'-tresses orchid due to **insignificant effects**. This determination is based on the low potential for location of current and new populations of the orchid in the same areas as those proposed for energy and mineral development. In addition, the implementation of the BLM-committed conservation strategies (see Section 5) will serve to protect yet undiscovered populations of the orchid and avoid adverse impacts to existing orchid individuals or habitat.

Implementation of coal bed natural gas management actions in the Powder River Basin within the Buffalo and Platte River RMP planning areas **may affect**, and is **likely to adversely affect** the Ute ladies'-tresses orchid. This determination is based on the possibility that surface discharge of saline or other contaminated waters into a watershed above habitat occupied by the orchid would likely kill individuals or populations of orchids.

Implementation of geothermal resources will have **no effect** on the Ute ladies'-tresses orchid as no leases for geothermal resources occur in Wyoming at this time.

Off-Highway Vehicles

Management Actions

The objective of OHV management is to offer outdoor recreational opportunities on BLM-administered public land while providing for resource protection, visitor services, and the health and safety of public land visitors. BLM-administered public land is enrolled in the Wyoming State Program Off-Road Vehicle Registration Program. This program requires the purchase of a Wyoming State registration sticker to be displayed on motorized vehicles (four-wheelers, motorcycle, etc.) that are not currently licensed for highway use. The State manages the registration program in cooperation with its partner agencies (BLM, USFS, WGFD, Wyoming State Parks and Cultural Resources). However, the use of OHVs on the BLM administered lands is restricted, depending on the designation contained in the resource management plans for the various field offices (e.g., closed, limited, or open).

Off-highway vehicle management designates closed, limited, or open areas for OHV use, posts signs, maps, or brochures, permits OHV rallies, cross-country races, and outings, monitors OHV use, and performs necessary tasks requiring OHV use.

Off-Highway Vehicle use on BLM-administered lands is designated by area as either limited to designated roads and travel routes, limited to existing roads and travel routes, or in a few areas, designated as open which allows cross-country travel. Most BLM lands in Wyoming are managed classifying OHV use as "limited," so OHV use will only be permitted on existing roads and vehicle routes (including over-the-snow vehicles). Additional restrictions with seasonal closures or restrictions to type of vehicle may also be imposed. OHV travel will be prohibited on wet soils and on slopes greater than 25 percent if damage to vegetation, soils, or water quality would result. Seasonal restrictions may be applied in crucial wildlife habitats as needed. Some areas and roads are closed to all OHV use. Over snow vehicles can also be limited in their use by being designated to roads or travel routes or they may be allowed for cross country travel. OHVs can be used short distances off of roads to conduct necessary tasks (i.e.; set-up a camp, collect firewood or retrieve a big game animal) or in the performance of authorized activities (i.e.; firefighting, etc.).

Effects Analysis

OHV use is prohibited on wet soils, including wetlands and riparian areas. No BLM-approved OHV use would alter or destroy orchid habitat or individuals. There is potential for unauthorized activities resulting in trails through riparian areas and potential stream crossings. These activities could destroy individuals or potentially alter the suitability of the orchid's habitat.

Determination

Implementation of OHV resource management **may affect**, but is **not likely to adversely affect** the Ute ladies'-tresses orchid due to **discountable effects**. This determination is based on the BLM's policy of not allowing OHV use on wet soils and riparian areas and the low likelihood for unauthorized trails to be created in or through occupied orchid habitat.

Paleontological Resources

Management Actions

The objective of paleontological resources management is to manage paleontological resources that are part of the BLM-administered public land surface estate for their informational, educational, scientific, public, and recreational uses.

Using the land for scientific purposes such as paleontological exploration is authorized through a permit system. Since 1985, 53 permits have been issued, and it was estimated that about 12 more could be issued between 1991 and 2005. Fossils fall under paleontological resources and are part of the surface estate, such that whoever owns the surface consequently owns the fossils. A paleontological collecting permit is required before collecting any fossil vertebrates, significant fossil invertebrates, and plants on BLM-administered public lands.

Potential effects on paleontological resources on BLM-administered public lands will be considered in site-specific environmental analyses before authorizing surface-disturbing activities. Site-specific inventories will be required where significant fossil resources are known or are anticipated to occur. Hobby collection of invertebrate fossils and petrified wood are allowed except in specified areas. Excavation or "digs", typically involving less than an acre, may be performed with hand tools, power tools, or heavy equipment that could involve intensive human activity at the site by field crews; placement of crew and evaluation facilities; intense, though usually localized, ground disturbance at the

immediate site; and periodic use of primitive access roads and trails. Rarely, a site will have *in situ* interpretive value, and when this takes place, intensive development could occur which might include the construction of permanent access and service roads, power sources, facilities (including protective fencing), and relatively heavy, though usually localized, human use. The closing of BLM-administered public lands or restricting uses to protect paleontological resources are evaluated on a case-by-case basis.

Paleontological resource values are managed in much the same manner as cultural resources, and the management activities are also similar, however, the statutory authorities are different.

Effects Analysis

Collection of fossils on public land would have minimal effects on the orchid and its habitat. Most activities associated with paleontological resource inventories, including surface surveys, record searches, fossil characterization, and intensive excavation efforts and development of interpretive sites are not likely to be conducted or located within the orchid's habitat, because of the accumulated organic matter and topsoil associated with riparian communities. As with any surface disturbing activity, a pre-construction assessment of the orchid's presence would be conducted in potentially suitable habitats prior to excavation. Direct and indirect effects to the orchid would be avoided as a consequence. Development of interpretive sites will, of necessity, occur where the fossils themselves are located. If such a site were discovered or occurred in the orchid's habitat, it could create a conflict. However, the likelihood of this event is extremely low. Collection of fossils on public land would not include any adverse affects to the orchid and its habitat. Possible effects include increased human activity and minor surface disturbances associated with fossil retrieval, although these activities would be an extremely rare occurrence.

Determination

Implementation of paleontological resources management **may affect**, but is **not likely to adversely affect** the Ute ladies'-tresses orchid due to **discountable effects**. This determination is based on the unlikely chance that paleontological resources management actions would occur within orchid habitat and the rare and unlikely potential for surface disturbance associated with fossil collection and implementation of the orchid conservation strategies (see Section 5) would preclude any impacts to the orchid.

Recreation Resources

Management Actions

The objective of recreation resources management is to offer outdoor recreational opportunities on lands administered by BLM while providing for resource protection, visitor services, and the health and safety of public land visitors.

Recreation management includes allowing recreational access and use by the public, developing recreational areas, imposing restrictions, acquiring recreational access, and assessing effects of recreational use to the environment. The BLM monitors recreational use, develops management plans, and evaluates and updates recreational potential.

Recreational activities allowed by the BLM include hiking, hunting, mountain biking, boating, and fishing, OHV use (including snowmobiles), horseback riding, and camping. Casual use of BLM-administered public land for hiking, bicycling, hunting, fishing, and similar uses are allowed without charge. Large recreational events may include organized group hikes, motocross competitions, or horse

endurance rides. The BLM develops recreational and camping sites, and where these take place, intensive development could occur which might include the construction of permanent access and service roads, power sources, facilities (including protective fencing), and relatively heavy, though usually localized, human use. Recreational site development also includes maintaining or developing recreational sites and facilities, developing campgrounds, providing fishing and floating opportunities, maintaining developed and undeveloped recreation sites, adding developments as opportunities arise, adding interpretive markers, and constructing roads and interpretive sites. Most recreation use on Public lands is dispersed human use by low numbers of individuals (i.e.; hiking, hunting, bicycling, horseback riding, etc.), although individuals often concentration during activities such as forming hunting camps in the fall.

The Recreation program may place boundary signs, identify hazards on rivers, restrict recreational uses, limit motorized vehicles to existing trails, designate road use and recreation areas, require facilities to blend with the natural environment, and conduct field inventories. Most Public land recreation use occurs on or near existing trails or roads.

Recreation areas may have specific restrictions to protect other important resources. Development and enforcement of stipulations and protective measures includes designating OHV use, enforcing recreation-oriented regulations, patrolling high-use areas, and contacting users in the field.

Effects Analysis

No known populations of the orchid are near any developed or proposed recreation sites or special recreation management areas. Riparian meadows on BLM lands do not typically have extensive trail systems through them because of frequent flooding and sensitive vegetation. OHV use and recreation may compact or erode soil; however, these activities are generally precluded by BLM in these areas. An indirect effect may be the introduction of non-native plants into potential habitat for the orchid if recreational hikers or OHV users carry in seeds unintentionally. As with most forms of public access, dispersed recreation occurs on the public lands and is allowed without specific permitting or authorization.

Determination

Implementation of recreation resource management **may affect**, but is **not likely to adversely affect** the Ute ladies'-tresses orchid, due to **discountable effects**. This determination is based on the low likelihood that recreation activities managed by the BLM would occur in areas of known populations of the orchid. If recreation management actions were to occur within potential habitats, implementation of the orchid conservation strategies (see Section 5) would take place, including the completion of surveys prior to implementation of recreational management actions.

Riparian Areas

Management Actions

The objective for riparian areas management is to maintain, improve, or restore riparian value to enhance forage, habitat, and stream quality. Priority for riparian areas management will be given to those areas identified as Wyoming BLM sensitive fish species habitat, including habitat for native cutthroat trout. Laws and guidelines abided by during riparian management include Executive Orders 11990 (wetland) and 11988 (floodplain), and section 404 of the Clean Water Act. In addition, there are species-specific management plans for some riparian areas (i.e., Bonneville and Colorado River Cutthroat Trout Strategy and Management Plans).

Riparian areas management is an integral part of all resources and related management programs. Management actions may include reductions in livestock numbers, adjustments in grazing distribution patterns, fencing, herding, and livestock conversions. Riparian area management may require short-term disturbances from construction activities such as fencing or livestock herding. Those activities that affect or are affected by riparian values, will take into account the riparian areas management objectives and direction. Resource values and uses that affect or are affected by riparian values include wildlife and fisheries habitat, forest resources, livestock grazing, OHV use, visual resources, cultural and historical resources, minerals exploration and development activities, lands and realty activities, watershed and soils resources, recreation uses, fire management, and access. Riparian areas management guides and tempers the activities listed above. No specific ground disturbing activities are implemented through this activity. Monitoring of riparian areas is done by individuals on foot and the likelihood of trampling or destroying individual orchids or habitat is extremely unlikely as most individuals monitoring these areas are searching for the orchid.

Effects Analysis

Riparian areas management is not likely to have detrimental effects on the orchid or its habitat. The orchid occurs in riparian areas, and proper management of these areas would likely improve its habitat. Proper management in riparian areas maintains the health of the system to avoid negative effects. Activities authorized with potential impacts to orchid are addressed within their own management description section. However, riparian areas that are managed for mature, thick riparian vegetation would tend to out-compete the orchid and would have a detrimental impact on the orchid, likely reducing its population.

Determination

Implementation of riparian areas management **may affect**, but is **not likely to adversely affect** the Ute ladies'-tresses orchid, due to **beneficial effects**. This determination is based on the BLM policy to maintain riparian areas in a condition suitable for the species and that riparian area management is only analyzed in the Pinedale RMP, which does not contain any known populations of the orchid.

Sensitive Plants

Management Decisions

The objective for sensitive plants management is to maintain and enhance known populations of sensitive plant species within BLM-administered public lands. As habitats or sites for any future listed species are identified within a resource area, protective measures will be developed in consultation with the USFWS. Most sensitive plant management areas are managed for BLM designated sensitive plant species.

The known populations of sensitive plant species will be protected from disturbance by maintaining or establishing fencing around the populations, or other management techniques and by intensively managing surface disturbance in adjacent areas that could affect the populations. Any proposed surface disturbance will be examined on a case-by-case basis to determine potential adverse effects and appropriate conservation measures implemented to minimize those effects. Development, uses, and facilities will be managed temporally and spatially to avoid damage to the sensitive plant species.

Effects Analysis

Sensitive species management actions would likely benefit the orchid. Although there are currently no management actions specific to the orchid, general protection is afforded to sensitive plant species

populations. The Great Divide (Rawlins FO) and Green River (Rock Springs FO) RMPs and the only two planning areas that set-aside areas to specifically manage sensitive plants. Any management activities within or near the orchid's habitat would proactively manage to improve the habitat for the orchid.

Determination

Implementation of sensitive plants management **may affect**, but is **not likely to adversely affect** the Ute ladies'-tresses orchid, due to **beneficial effects**. This determination is based on the BLM's commitment to protection of sensitive plant species and their habitats under this management action which would include the orchid.

Soils

Management Actions

The objectives for soil resources management are to maintain soil cover and productivity and improve areas where soil productivity may be below potential on surface lands administered by BLM.

Activities associated with soil mapping/sampling may include surveying, core drilling, use of pick-up truck mounted soil augers and core samplers (1½" to 2" in diameter) and back-hoes (usually around 12-24" in width and pits may be up to 6' deep) for digging soil characterization pits and trenches, using hand held shovels to dig holes or pits, and associated human and vehicle disturbances. These trenches are backfilled and revegetated/reseeded when surveys are complete. Disturbances are usually very small of short duration in nature and will reclaim to the native terrain/vegetation quickly. Surface soil erosion studies may also be conduced. These soil resource related activities in the planning area are mainly in support of other programs. Soil mapping and identification may require the digging of trenches to identify and measure soil horizons below the surface. Formal soil surveys are conducted under a contract with the Natural Resource Conservation Service (NRCS).

Other activities associated with soil resources may include reclamation of abandoned mine lands (AML) and open shafts, removal of waste rock in floodplains or streams, or cleanup of tailings. These reclamation programs are covered under the hazardous materials section of this document.

To keep soil from eroding and to protect the water quality, timber harvest activities will be limited to slopes of 45 percent or less. OHV travel will be prohibited on wet soils and on slopes greater than 25 percent if unnecessary damage to vegetation, soils, or water quality would result. Roads and trails will be closed and reclaimed if they are heavily eroded, washed out, or if access roads in better condition are available. No surface disturbance or occupancy will be allowed in areas susceptible to severe erosion between March 1 and June 15.

Effects Analysis

Soil resources management would have limited impacts on the orchid and its habitat and the secondary benefits from improving habitats through revegetation, reseeding, or other rehabilitation would be beneficial. This program prohibits soil-damaging activities on moist soils, which are the orchid's primary habitat. Protective measures for soils, should they occur in or near the orchid's habitat, would have a beneficial impact on the orchid and would be constructive by preventing compaction and rutting from surface-disturbing activities. Soil surveys conducted in the orchid's habitat would be conducted in conformance with the orchid conservation strategies (see Section 5) to prevent direct or indirect impacts

to individuals or orchid habitat.

Determination

Implementation of soil management **may affect**, but is **not likely to adversely affect** the Ute ladies'-tresses orchid due to **discountable effects**. This determination is based on the protection of moist soils under this management program and the implementation of the orchid conservation strategies (see Section 5) to prevent or minimize any direct or indirect impacts to individuals or orchid habitat.

Surface Disturbance Restriction Decisions

Management Actions

Surface disturbance restrictions are necessary to protect certain sensitive resources and areas from adverse affects of surface-disturbing activities and human presence, and are inclusive of the various management actions developed in and analyzed for the approved RMP. These restrictions apply to all types of activities involving surface disturbance or human presence impacts and are applied in accordance with the guidelines described in the BLM Mitigation Guidelines for Surface Disturbing and Disruptive Activities. These guidelines include, where applicable, proposals for waiver, exception, or modification, based on analysis for individual actions. This would allow for situations where a surface-disturbing activity may actually benefit sensitive resources, and allow for those occasions when analysis determines that an activity will not affect those resources.

The Surface Disturbing Guidelines will be used, as appropriate, to condition development activities in all programs where surface-disturbing activities occur and where the objectives of the RMP include the protection of important resource values. On a case-by-case basis, activities will be conditioned by any one or more of the mitigations in the Guidelines to avoid or minimize impacts to other important resource values and sensitive areas. Use restrictions (e.g., dates and distances) may be made more or less stringent, depending on the needs of specific situations. The restrictions identified under the various resource programs are complementary to the standards in the Guidelines and are not all-inclusive. They represent both actual requirements applicable to specific circumstances, and examples of requirements that will be considered and that may be applied, if necessary. Additional restrictions may be placed on surface-disturbing activities as necessary.

The impact minimization measures identified in a particular RMP serve to provide a degree of protection to affected resources, not to unnecessarily restrict activities. The RMP provides the flexibility for modifications or exceptions to restrictions in specific circumstances where a restriction is determined not to apply or is not needed to achieve a desired objective.

Surface disturbance is characterized by the removal of vegetative cover and soil materials. Where actual excavation does not occur, activities may be allowed to occur with less stringent limitations provided that the objectives and purpose for the surface disturbance restrictions are met. Examples where less stringent application of the Guidelines would apply are timber harvesting within 500 feet of streams or riparian areas and on slopes greater than 25%. This would be applicable to those timber harvest activities, such as tree cutting, skidding, and slash disposal that do not fully remove vegetative cover and soil materials. In the past, allowing these activities with a 100-foot streamside buffer distance and on slopes greater than 25% did not produce detrimental effects. However, road construction or staging/loading areas for logging equipment would not meet the less stringent definition and would be subject to the standard requirements of 500 feet and 25% slope.

The impact minimization measures prescribed for Federal mineral development on split estate lands

(Federal minerals beneath a non-Federal surface) apply only to the development of the Federal minerals. These impact minimization measures do not dictate the surface owner's management of their lands. The impact minimization measures present restrictions on only those surface activities conducted for purposes of developing the Federal minerals and that are permitted, licensed, or otherwise approved by the BLM.

When the BLM is considering issuing a mineral lease, the agency has a statutory responsibility under the National Environmental Policy Act to assess the potential environmental impacts of the Federal undertaking. It also has the statutory authority under the Mineral Leasing Act (MLA) of 1920, the Mineral Leasing Act for Acquired Lands (MLAAL), and the Federal Land Policy and Management Act (FLPMA) of 1976 to take reasonable measures to avoid or minimize adverse environmental impacts that may result from Federally authorized mineral lease activities. This authority exists regardless of whether or not the surface is Federally owned.

The MLA, the MLAAL, and the FLPMA are not the only statutes that establish such authority. Other statutes that may be applicable include the Clean Water Act, the Clean Air Act, the National Historic Preservation Act, the Endangered Species Act of 1973, the Federal Coal Leasing Amendments Act of 1976, and the Surface Mining Control and Reclamation Act of 1977. Moreover, the recently enacted Federal Onshore Oil and Gas Leasing Reform Act of 1987 specifically requires the BLM to regulate surface disturbance and reclamation on all leases.

Effects Analysis

There is a minimum 500-foot buffer around streams regarding surface disturbance. Most of the orchid's habitat is within this 500-foot buffer. Some activities, such as roads and pipelines, may cross suitable habitat for the orchid. These activities would be localized and would be analyzed for their effects to the riparian areas and habitat for the orchid. With all surface-disturbing activities there is potential for the introduction of invasive species. Conservation measures are in place to minimize or to prevent such occurrences (see Section 4.0). Surface disturbance restrictions do not implement any ground disturbing actions and are primarily beneficial to the orchid and its habitat.

Determination

Implementation of surface disturbance restrictions management **may affect**, but is **not likely to adversely affect** the Ute ladies'-tresses orchid due to **beneficial effects**. This determination is based on the buffer surrounding streams, where no surface-disturbing activities are allowed.

Threatened, Endangered, and Candidate Species Protection

Management Actions

The management objectives of threatened, endangered and candidate (TEC) species protection are to maintain biological diversity of plant and animal species; to support WGFD strategic plan population objective levels to the extent practical and to the extent consistent with BLM multiple use management requirements; to maintain and improve forage production and quality of rangelands, fisheries, and wildlife habitat; and to provide habitat for threatened and endangered and special status plant and animal species on all public lands in compliance with the Endangered Species Act (ESA) and approved recovery plans.

Known populations of threatened and endangered species will be protected, as mandated by law. BLM will not authorize activities or commit resources that may jeopardize the continue existence of a species or population (BLM Manual 6840).

Although only USFWS can list a species as endangered, threatened, or a candidate for listing, the ESA requires the BLM to protect known populations of threatened or endangered species. The BLM's threatened and endangered species management activities include protecting habitat and known populations, enforcing timing stipulations, conducting surveys, and closing known locations of sensitive populations or habitat to surface-disturbing activities.

Most TEC management activities temper other impacting activities. However, if methods required to protect TEC species include fencing, or other construction, then some short-term, low intensity disturbance may occur. TEC management is beneficial to wildlife and plant species.

Effects Analysis

Threatened, endangered, and candidate species protection management actions would likely benefit the orchid. Although there are no current management actions specific to the orchid, general protection is given to all listed species and no detrimental impacts to the orchid are anticipated under the Threatened, Endangered, and Candidate Species Management program.

Determination

Implementation of threatened, endangered, and candidate species protection actions **may affect**, but is **not likely to adversely affect** the Ute ladies'-tresses orchid, due to **insignificant effects**. This determination is based primarily on the protection of listed plant species and their habitats and that implementation of the orchid conservation strategies (see Section 5) would prevent or minimize any direct or indirect impacts to individuals or orchid habitat if surface disturbing activities are conducted. The majority of the management actions implemented would be **beneficial** to the orchid and its habitat.

Vegetation Resources

Management Actions

The objectives of vegetation resource management are to maintain or improve the diversity of plant communities to support timber production, livestock needs, wildlife habitat, watershed protection, and acceptable visual resources; to enhance essential and important habitats for special status plants species on BLM-administered public land surface and prevent the need for any special status plant species being listed as threatened and endangered; and to reduce the spread of noxious weeds.

Vegetation treatments, including timber harvesting, sagebrush spraying or burning, will be designed to meet overall resource management objectives. Cooperative integrated weed control programs implement weed control work on adjoining deeded and state lands in cooperation with county weed and pest districts. The three types of control used by the BLM on public lands are chemical, biological, and mechanical. Biological control can involve the use of insects such as weevils or beetles, and herbivores like controlled, high intensity goat grazing. This method may be used in cooperation with mechanical control (e.g., dozing, cutting, chaining, or chopping). Mechanical methods employ the use of a tractor or caterpillar to pull mowers or brush hogs, or to use two caterpillars to pull large chains in a "U" shape to knock down vegetation. Sagebrush control measures are also implemented by the BLM with control methods using primarily chemical, mechanical, or prescribed fire. Prescribed fire is used as a management tool to improve range forage production, wildlife habitat, timber stand improvement, timber sale debris disposal, and to reduce hazardous fuel buildup. Noxious weed control is typically implemented along rights-of-way.

Trees will be planted on timber harvest areas that fail to regenerate naturally in order to achieve minimum stocking levels within five years after completing harvest and rehabilitation activities. Pre-commercial tree thinning will be initiated on overstocked seedling- and sapling-size stands. Temporary use of heavy equipment may be associated with these authorized activities.

If herbicides are proposed for use, minimum-toxicity herbicides will be used with appropriate buffer zones along streams, rivers, lakes, and riparian areas, including those along ephemeral and intermittent streams. Only Federally approved pesticides and biological controls are used. Local restrictions within each county are also followed. Projects that may affect threatened or endangered plants or animals will be modified to protect these species. Pesticide Use Proposals (PUPs) and Biological Use Proposals (BUPs) are developed conjunctively with the County Weed and Pest Districts and the BLM. All PUPs and BUPs are reviewed by the state Noxious Weed Coordinator and approved by the BLM Assistant State Director.

Effects Analysis

Vegetation management on BLM lands would apply to species other than the orchid. These activities, although potentially detrimental to the orchid, would also likely be extremely limited in wetland and riparian areas. In addition, limiting activities such as the use of herbicides in wetland or riparian areas could benefit the orchid. Orchid habitat that are unsuitable because of noxious weeds would be treated with environmentally acceptable herbicides.

Determination

Implementation of vegetation management **may affect**, but is **not likely to adversely affect** the Ute ladies'-tresses orchid, due to **insignificant effects**. This determination is based on the protection of, and potential improvements to, the orchid's habitat, the possibility of herbicide application to control noxious weeds in the orchid's habitat, and the implementation of the orchid conservation strategies (see Section 5) that would prevent or minimize any direct or indirect impacts to individuals or orchid habitat if surface disturbing activities, including biological, chemical or mechanical are conducted. The application of herbicides to control noxious weeds in competition with the orchid would be a secondary **beneficial effect**.

Visual Resources

Management Actions

Visual resource management (VRM) classes are the degree of acceptable visual change within a characteristic landscape. A class is based on the physical and sociological characteristics of any given homogeneous area and serves as a management objective. The four classes are described below:

Class I – provides for natural ecological changes only. This class includes primitive areas, some natural areas, some wild and scenic rivers, and other similar areas where landscape modification activities should be restricted.

Class II – areas are those where changes in any of the basic elements (form, line, color, or texture) caused by management activity should not be evident in the characteristic landscape.

Class III – includes areas where changes in the basic elements (form, line, color, or texture) caused by management activities may be evident in the characteristic landscape. However, the changes should

remain subordinate to the visual strength of the existing character.

Class IV – applies to areas where changes may subordinate the original composition and character; however, they should reflect what could be a natural occurrence within the characteristic landscape.

The objective of VRM is to maintain or improve scenic values and visual quality, and establish visual resources management priorities in conjunction with other resource values. Visual resources are managed in accordance with objectives for visual resources management (VRM) classes that have been assigned to each FO. Visual resource classification inventories have been developed for some, but not all, of the FO areas in Wyoming. The designation of VRM classes in an RMP is simply a designation, and tempers or stipulates from a visual resource viewpoint, specific protections or management of other BLM authorized actions. VRM classifications, in and of themselves, do not place on-the-ground projects or ground disturbing activities. Examples of the types of actions or projects required to meet VRM criteria are in the following paragraph.

To improve visual resources, the BLM designs facilities to blend in with the surroundings, requires reclamation of watershed projects and water wells, and restricts activities that might degrade visual resources. No activity or occupancy is allowed within 200 feet of the edge of state and Federal highways. Facilities or structures such as power lines, oil wells, and storage tanks are required to be screened, painted, and designed to blend with the surrounding landscape, except where safety indicates otherwise and dependent upon the VRM classification. Any facilities or structures proposed in or near wilderness study areas will be designed so as not to impair wilderness suitability. Generally, VRM classification benefits wildlife and plant species.

Effects Analysis

Because VRM and its classifications, in and of themselves, do not place on-the-ground projects or ground disturbing activities, no direct affects to the orchid and its habitat would not occur and indirect effects would be primarily beneficial. Activities would attempt to keep sites in their natural condition, possibly benefiting the species. Also, it is unlikely that any activities associated with visual resource management would occur in the orchid's habitat because of the restrictions already in place to minimize impacts to these areas.

Determination

Implementation of VRM management will have **no effect** on the Ute ladies'-tresses orchid. This determination is based on the on the premise that VRM activities would not place any ground disturbing actions within habitat for the orchid.

Watershed and Water Resources

Management Actions

The objective of watershed and water resources management is to maintain or improve surface and groundwater quality consistent with existing and anticipated uses and applicable state and Federal water quality standards, to provide for availability of water to facilitate authorized uses, and to minimize harmful consequences of erosion and surface runoff from BLM-administered public land.

Passing of the Water Resources Research Act, Water Resources Planning Act, and the Water Quality Act of 1965 allowed the BLM to expand its water resources program and increased cooperation with soil

conservation districts.

Activities authorized under water resources management may include implementation of watershed plans, identification of heavy sediment loads, monitoring and treating soil erosion, evaluating and restricting surface development activities, and monitoring water quality.

Monitoring of streams and rivers for water quality would be very small and short term in nature (a few hours or less). Monitoring would be done with small, hand held kits on site, or water samples would be collected and analyzed in a laboratory off site. Other activities would be to measure stream channelization and evaluate streambank and riparian conditions. Access for these activities would be primarily by vehicle (pickup truck, etc.) and monitoring would be done by personnel walking into and along streams and rivers. Permanent in-stream flow monitoring and continuous water quality analysis gauging stations would be small structures that would require some construction to build (backhoe, concrete truck or a lift to place a pre-built structure) and some disturbance to streams or rivers during construction and occasional maintenance activities.

Other smaller scale water resource activities would include plugging abandoned wells to prevent contamination or cross contamination of water aquifers and reclaiming (recontouring and revegetating) the associated drill pad. This activity would consist of pouring concrete into the well casing to plug the well, requiring: vehicles, concrete trucks, concrete pumper trucks, personnel, etc. Reclamation of the drill pad after plugging would require the use of loaders, backhoes, graders or bulldozers, seeding equipment, and trucks and trailers to haul the equipment. Instream flow control structures such as drop structures (made of logs, rock baskets, or concrete); weirs; revetments (streambank erosion control structures (trees, logs, etc.)); rip-rap (rocks, boulders, logs, etc.); placing gravel or concrete in streams for crossings and fish spawning; culverts, all requiring equipment and personnel to construct. Equipment might include: vehicles, backhoes, bulldozers, skid loaders, concrete trucks, etc. Planting of riparian plant species to reduce erosion and sediment movement along watercourses would be done either using hand held tools (shovels, augers, or just jamming stems into the ground (willows, cottonwoods, etc.)) or with smaller equipment like motorized augers, backhoes, tree spades, etc.).

Water is produced as a bi-product of the extraction process of developing Coal Bed Natural Gas (CBNG), natural gas, and oil. The area has been drilled to try and produce some of these shallow coal seams for CBNG with little success. Most produced water in western Wyoming is cycled back into the ground via re-injection wells. Some produced water could possibly flow down perennial, ephemeral, or dry drainages, increasing flows and changing the dynamics of the drainage systems. Some of this produced water can be high in trace metals and sodium, which may be detrimental to plants. Much of the produced water is more “pure” and can also be beneficial to wildlife and plant species. This produced water may also be stored in ponds or reservoirs, requiring construction (see below) and changes in landscape to the area.

Larger scale activities associated with water resource management would include the construction, maintenance (of existing), and rehabilitation (of failed) of impoundments/reservoirs for salt and sediment control. These impoundments would be constructed using heavy equipment (graders, bulldozers, loaders, backhoes, dump trucks, etc. and the trucks and trailers to haul them). They usually require: the removal of soil and materials for the catchment basin; building of earthen dams and protecting the dam face with vegetation, mesh material, or rock; and hauling, placement and contouring of fill material and possible building of access roads. Maintenance would consist of using loaders, backhoes, bulldozers, etc. to clean out and haul or contour nearby the sediment removed from the catchment basin to increase water holding capacity. Water diversions may be allowed in some situations (livestock or wildlife watering projects, the use of existing water rights by farmers/ranchers, etc.) and while construction of diversion structures may be of small scale, dewatering of streams/rivers may have a long-term affect on aquatic systems. Few of

the water resource management projects listed above would be accomplished on public lands in the Wyoming due to limited water courses, the need for improvement, scattered land ownership tracts, and limited budgets to accomplish the work. This trend is expected to continue over the life of the nine RMPs listed in this BA.

No surface disturbance will be allowed within 500 feet of any spring, reservoir, water well, or perennial stream unless waived by the authorized officer. Pollution prevention plans are developed for actions that qualify under the Wyoming Storm Water Discharge Program to reduce the amount of non-point pollution entering waterways. The rights to water-related projects on public lands will be filed with the Wyoming state engineer's office in order to obtain valid water rights.

Effects Analysis

Watershed and water resources management would likely benefit the orchid. Management actions would prevent or reduce erosion and pollution. A 500-foot buffer preventing surface disturbance on perennial streams would encompass the species' habitat. The types of actions described above associated with watershed management would take place very rarely, if at all within the orchid's habitat, occur infrequently, and are small in scale and would likely have minimal impacts to the orchid. Actions associated with watershed management are likely to improve riparian vegetation and habitat for the orchid. Management actions would prevent or reduce erosion and siltation.

Determination

Implementation of watershed and water resources management **may affect**, but is **not likely to adversely affect** the Ute ladies'-tresses orchid, due to **discountable effects**. This determination is based on the limited application of this activity, a 500-foot buffer preventing surface disturbance on perennial streams would encompass the orchid's habitat, and the implementation of the orchid conservation strategies (see Section 5) that would prevent or minimize any direct or indirect impacts to individuals or orchid habitat if surface disturbing activities take place. Implementation of watershed and water resource management actions may maintain or improve the condition of the watershed areas and may result in secondary beneficial effects to the orchid and its habitat.

Wild and Scenic Rivers

Management Actions

The objectives of wild and scenic rivers management for public lands administered by the BLM that meet the wild and scenic rivers suitability factors are to maintain or enhance their outstandingly remarkable values and wild and scenic rivers (WSR) classifications until Congress considers them for possible designation. WSR Management activities of the BLM include studying segments of the river for potential classification by Congress. The suitable determination is based on the uniqueness of the diverse land resources and their regional and national significance, making them worthy of any future consideration for addition to the WSR system.

Effects Analysis

The only designated wild and scenic river in the state is Clark's Fork of the Yellowstone River, on the Shoshone National Forest east of Yellowstone National Park. BLM has developed a list of 17 rivers and streams statewide that meet eligibility and suitability for designation as wild, scenic, or recreational under the Act. Eight of the 12 RMPs analyzed for the orchid have stream or river segments that meet the eligibility and suitability criteria for designation as WSRs. These include segments such as the Middle Fork of the Powder River in the Buffalo FO and a 19-mile segment of the Upper Green River in the

Pinedale FO. These are currently managed as WSRs, but are not Federally designated as such. Management of these areas is in accordance with Public Law 90-542. As new RMPs are completed, BLM will either recommend designation under the Act or not recommend designation. RMPs attempt to maintain these rivers as wild, and would not call for alteration to black-footed ferret habitat.

Because of their isolation, rugged character, and naturalness, designation as a Wild and Scenic River will not be likely to have negative impacts on special status wildlife or plants. At the time of designation, further consideration of details will be given to potential impacts to the orchid. The 17 river or stream segments that meet eligibility and suitability standards for WSR status have not been specifically inventoried for the orchid, but it is believed that none exist within any of the boundaries of these segments. The Platte River (Casper FO), Snake River (Pinedale FO), Grass Creek (Worland FO) and Newcastle RMPs have no eligible or suitable stream or river segments within their boundaries. Management that attempts to maintain these rivers as wild and scenic would not alter the orchid's habitat and would likely increase habitat suitability for the species.

Determination

Implementation of wild and scenic rivers management will have **no effect** on the Ute ladies'-tresses orchid. This determination is based on the lack of the orchid occurring within stream and river segments that meet the eligibility and suitability criteria for WSR status on BLM land in Wyoming. However, if the orchid is found within one of these 17 stream or river segments, management of rivers as WSR would likely restrict disturbance and promote ecosystem health, potentially improving habitat suitability for the orchid and providing a **beneficial effect** to the orchid.

Wild Horse

Management Actions

The management objective of wild horse management is to maintain a viable herd that will preserve the free-roaming nature of wild horses in a thriving ecological balance and to provide opportunity for the public to view them. The FLPMA amended the Wild and Free Roaming Horse and Burro Act to authorize the use of helicopters in horse and burro roundups. Wild horse and burro numbers on BLM lands in Wyoming were estimated at 37,000 in 2004 (Breckenridge 2004); this compares with 17,000 in the entire West in the late 1960s.

The Wild Horse Program herds, corrals, transports, monitors, and rounds up horses for wild horse management. Herds are monitored by airplane census and counted each year. Helicopters may also be used to round up wild horses. The construction of corrals and capture facilities could cause impacts through ground disturbance and concentrated human presence. Horse round-up generally causes concentrated compaction by horse hooves in corral and load-out areas. Placement of capture corrals and capture facilities outside of special status species habitat is important as the concentrated disturbance could potentially be an adverse affect to these species and/or their habitats.

Land Use Plans are used to plan wild horse management. The BLM decides how many horses to allow on a certain area. This is termed the Approximate Management Level and the BLM can adjust horse numbers as needed. Issues taken into consideration include carrying capacity, trends in utilization, and public input. The BLM's wild horse management specialists coordinate with wildlife biologists and archaeologists to ensure that wild horse management will not cause adverse impacts to biological or cultural resources. Wild horses are managed in herd areas entitled, wild horse herd management areas (WHHMAs). WHHMAs occur in the Cody, Lander, Rawlins, Rock Springs, and Worland FOs. No wild

horse herd management areas occur in the Kemmerer or Pinedale FOs, although both FOs have wild horse herd areas that are not currently being managed for wild horses.

Effects Analysis

There are no herds of wild horses currently managed within or near known populations of the orchid. There is the potential that unknown populations of the orchid occur within a WHHM. All WHHMAs are managed to cause no adverse impacts to biological resources. Temporary damage to individuals or habitat may occur, but any herds utilizing the orchid's potential habitat would not likely be present long enough to cause significant damage because of the herds' tendency to roam. The orchid and wild horses are compatible on the landscape.

There is the possibility that, if wing fences and corrals were set up within on near a population of the orchid that there could be some temporary impacts such as trampling of vegetation, including the orchid, or grazing of individual plants. However, no wild horse captures are planned near any known population of the orchid.

Determination

Implementation of wild horse management will have **no effect** on the Ute ladies'-tresses orchid. This determination is based on the lack of known populations of the orchid occurring within wild horse herds or WHHMAs in Wyoming.

Wilderness Resources

Management Actions

Wilderness Study Areas (WSAs) on public lands are single-use resources managed in accordance with decisions issued by the U.S. Congress. The BLM managers ensure that proposed actions are consistent with land use plans in effect for WSAs. Absence of roads, total aerial extent, naturalness, solitude, or a primitive and unconfined type of recreation; and other ecological, geological, educational, scenic, or historical features may be considered wilderness values. Activities associated with this program may include inventories to identify wilderness areas, public involvement with the wilderness study process, authorization of mining claims under unique circumstances, or evaluations of proposed actions to determine potential impacts to known or potential wilderness values.

All WSAs are managed under the Interim Management Policy (IMP) until Congress issues management guidelines. There are three categories of public lands to which the IMP applies: (1) WSAs identified by the wilderness review required by Section 603 of the FLPMA, (2) legislative WSAs (i.e., WSAs established by Congress, of which there are none administered by the BLM in Wyoming), and (3) WSAs identified through the land-use planning process in Section 202 of FLPMA.

Operators prepare a Plan of Operation before beginning any mining exploration. The plan identifies the mining strategy and attempts to minimize environmental impacts. Discovery work for WSAs under Section 603 must be done to non-impairment standards. Only "unnecessary and undue degradation" requirements apply to Section 202 WSAs.

A mining claim may be staked at any time in an existing WSA. NEPA analysis is required, however, before any activity is authorized in a WSA. Environmental Assessments (EAs) or Environmental Impact Statements (EISs) are prepared to determine if a proposal meets non-impairment criteria. Categorical

exclusions to eliminate this analytical process for uses and facilities on lands under wilderness review are not allowed.

The designation of WSA status is simply a designation, and tempers or stipulates from a WSA viewpoint, specific protections or management of other BLM authorized actions. WSA classifications, in and of themselves, do not place on-the-ground projects or ground disturbing activities. Generally, WSA status is a beneficial impact on wildlife and plant species.

Effects Analysis

There are 42 WSAs in Wyoming. No known populations of the orchid occur in WSAs. NEPA analysis is required before any activity is authorized in a WSA. If an occurrence of the orchid were noted, minimization measures would be put into place to avoid impacts to the species.

Determination

Implementation of wilderness resources management will have **no effect** on the Ute ladies'-tresses orchid. This determination is based on the lack of known populations of the orchid occurring within WSAs in Wyoming. Implementation of wilderness resources management would have **beneficial effects** to the orchid if it ever found within a WSA by placement of the non-impairment status for ground disturbing activities occurring within any WSA.

Wildlife Habitat

Management Actions

BLM has identified four primary objectives for the management of wildlife habitats. First, BLM will maintain the biological diversity of plant and animal species. Second, it will support the population objective levels of the WGFD's strategic plan, to the extent practical and consistent with BLM multiple-use management requirements. Third, BLM will maintain and, where possible, improve forage production and quality of rangelands, fisheries, and wildlife habitats. Finally, to the extent possible, BLM will provide habitats for threatened and endangered and special-status plant and animal species on all public lands in compliance with the ESA and approved recovery plans. Habitat management plans are developed with goals and objectives specifically aimed at the conservation of special status species and/or their habitats.

Approximately 90 percent of wildlife program activities support other resource programs. These programs include fuels reduction, density of timber stands in deer and elk winter habitats, oil and gas exploration, timber harvest, and prescribed fires. Specific management goals and actions apply to several wildlife groups and habitats including big game ranges, wetland and riparian areas, elk habitat, raptor and grouse breeding areas, and animal and insect damage control. Wildlife management maintains and, where possible, improves forage production and quality of rangelands, fisheries, and wildlife habitat. It also provides habitats for threatened, endangered, and special-status animal and plant species on BLM-administered public land surface in compliance with the ESA and approved recovery plans.

Big game and fisheries management levels identified in the WGFD 1990-1995 strategic plan are supported by the BLM. The BLM cooperates with the WGFD to introduce or reintroduce native and acceptable non-native wildlife and fish where potential habitat exists. Wildlife habitat is monitored and population adjustments and habitat improvements are recommended to the WGFD, as appropriate. The BLM works with the USFWS and the WGFD to evaluate and designate critical habitat for threatened and

endangered species on BLM-administered public lands.

Wildlife program projects may include surveying, monitoring, habitat improvement activities such as developing habitat management plans, and creating cooperative management areas. The categories of wildlife management activity for the BLM include developing stipulations and protective measures, acquiring land, conducting inventories, performing livestock or forestry-related activities, and wildlife and fisheries habitat improvement projects.

Plant and animal resource inventories often include sampling and documenting plant and animal population and habitat occurrence and conditions. Techniques can include anything from satellite imagery mapping and interpretation; to the actual measurement of resource transect parameters on the ground, or the collection of information for laboratory analysis. These activities often include off-road field travel, but generally no significant surface disturbance requiring large reclamation efforts. Many of the same techniques are often used for monitoring management implementation effectiveness following implementation of a set of management projects or actions.

Habitat development and improvement projects may include, but are not limited to; the development of water sources or water regulating structures including spring developments, guzzlers, dikes or water spreading devices, development of islands in ponds and reservoirs, modification of existing projects, construction of artificial waterfowl or raptor nesting structures, construction of small game cover brush piles, and construction and maintenance of fences. Fencing projects in the wildlife program are typically small in area, to create an exclosure or to protect a guzzler or spring development and would usually not exceed 100 to 200 feet on a side. These actions could require the use of hand tools, mechanical or heavy equipment, hauling or transporting materials (gravel, dirt, tanks, etc.), and clearing vegetation. When fencing is proposed, whether permanent, temporary, or electric, they are built to fencing standards developed in the BLM Fencing Manual Handbook (H-1741-1, Fencing, Rel 1-1572, 12/6/1989). These standards are required to reduce the amount of restriction or hazards to wildlife. Fence construction and maintenance would likely require access to the site, possible removal of vegetation or uneven surface materials (rocks, trees, sand, etc.), digging postholes, stringing wire, building fence braces, building fence jacks, cutting or removing building materials on or off site, (fence posts, rails, rocks, etc.) weed management (spraying, cutting, pulling, etc.). Construction of waterfowl ponds and islands typically requires major surface disturbance and earth work with heavy dirt moving equipment like bulldozers and scrapers. Generally, permanent roads are not constructed for access to wildlife program project sites.

The BLM develops stipulations and protective measures to enhance wildlife and fisheries habitat. These include authorizing withdrawals of some areas from mineral entry; limiting access of four-wheel drives, snowmobiles, horseback, and pedestrians; prohibiting surface development; and imposing road closures. The BLM may acquire riverfront land or easements, and conducts inventories of potential habitat and occurrences of threatened, endangered, and sensitive species.

Livestock-related wildlife management activities include the development of water sources, construction and maintenance of fences, the management of other resource activities to conserve forage and protect habitat, the improvement of forage production and quality of rangelands, and the improvement of range with mechanical treatment. Forestry-related wildlife management activities include the management of timber and the promotion of cutting, thinning, planting, seeding, and pitting.

Other wildlife management activities for terrestrial species include introducing species, monitoring habitat, fencing modifications for antelope passage, implementing public use closures for wintering elk, development of water areas for waterfowl and shorebirds, development of springs or seeps, rock or manmade catchments for collecting water for wildlife watering, recommending habitat improvement projects, treatment to control exotic plants, prescribed burns, meadow restoration, cabling of junipers,

changing types of grazing and season of grazing, prescribed burning, developing islands, allowing farming, managing accesses, authorizing agricultural entry and disposal, and using surface protection impact minimization measures.

Other wildlife management activities for aquatic species include establishing a baseline fisheries inventory, fish habitat improvement, bank stabilization, development of watering sources, modification of barrier fences, exotic fish removal, construction of instream barriers to protect species from non-native invaders, installation of revetments and fish passage structures, installation of log overpours, macroinvertebrate sampling and analysis, installing gabion baskets, and placement of large boulders for instream fish habitat.

Effects Analysis

Wildlife habitat management may influence potential habitat for the orchid. Possible adverse effects include trampling of habitat by wildlife and inadvertent habitat alteration by personnel implementing wildlife habitat projects. Wildlife habitat improvement projects could be put into place to increase the usability of the area. Implementation of these actions will also have beneficial effects by maintaining or improving existing habitat conditions for the orchid. Potential impacts depend on several factors, including the time of year, the duration of field activities, use of heavy machinery versus hand tools, and the type of riparian habitats affected.

Determination

Implementation of wildlife habitat management **may affect**, but is **not likely to adversely affect** the Ute ladies'-tresses orchid, due to **discountable effects**. This determination is based on protection of, and potential improvements to, the orchid's habitat, the lack of planned wildlife or fisheries projects planned within or near occupied habitat for the orchid, and the implementation of the orchid conservation strategies (see Section 5) that would prevent or minimize any direct or indirect impacts to individuals or orchid habitat if surface disturbing activities are conducted.

TABLE 3-1 SUMMARY OF UTE LADIES' – TRESSES ORCHID EFFECTS DETERMINATIONS

Management Action \ Resource Mgt Plan	Buffalo RMP	Platte River RMP (Casper FO)	Cody RMP	Kemmerer RMP	Lander RMP	Newcastle RMP	Pinedale RMP	Snake River RMP	Great Divide RMP (Rawlins FO)	Green River RMP (Rock Spgs FO)	Grass Creek RMP (Worland FO)	Washakie RMP
Access					NLAAd							
Air Quality	NLAAb	NLAAb	NLAAb	NLAAb	NLAAb	NLAAb	NLAAb	NLAAb	NLAAb	NLAAb	NLAAb	
Special Areas/ACECs						NE	NE		NE	NE	NE	NE
Cultural/historical	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd
Fire Management	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd
Forest Resources	NE	NE	NE	NE	NE	NE	NE		NE	NE	NE	NE
Geothermal			NE									
Hazardous Material	NLAAd									NLAAd	NLAAd	NLAAd
Lands and Realty	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd
Livestock Grazing	LAA	LAA	LAA	LAA	LAA	LAA	LAA	LAA	LAA	LAA	LAA	LAA
Minerals & Geology	LAA	LAA	NLAAi	NLAAi	NLAAi	NLAAi	NLAAi	NLAAi	NLAAi	NLAAi	NLAAi	NLAAi
OHV use	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd
Paleontology	NLAAd							NLAAd	NLAAd			
Recreation	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd
Riparian												
Sensitive Plants										NLAAb		
Soils	NLAAd	NLAAd			NLAAd	NLAAd			NLAAd			
Soil/Water/Air[1]		See Below			See Below				See Below			
Surface Disturb Restrictions								NLAAb				
T&E Species	NLAAi											
Vegetation	NLAAi							NLAAi	NLAAi	NLAAi	NLAAi	
Visual Resources Mgt	NE					NE	NE	NE	NE	NE	NE	NE
Water/soils									NLAAi	NLAAd	NLAAd	NLAAd
Watershed/Water Resources	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd			NLAAd			
Wild & Scenic Rivers	NE	NE	NE	NE	NE				NE	NE		
Wild Horses									NE	NE	NE	NE
Wilderness	NE			NE	NE				NE	NE	NE	NE
Wildlife & Fish	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd	NLAAd

LAA = Likely to Adversely Affect; NLAA = Not Likely to Adversely Affect; b = due to beneficial effects; d = due to discountable effects; i = due to insignificant effects; NE = No Effect

Geothermal management action is addressed under Minerals and Geology management action. Water/soils management action is addressed under Soils Management and Watershed/Water Resources management actions.

Soil/Water/Air[1] →Co-joined in the Platte River, Lander and Great Divide RMPs, but analyzed separately under Air Quality, Soils and Watershed Management sections

4.0 CUMULATIVE EFFECTS

Cumulative effects are those effects of future State of private activities, not involving Federal activities, that are reasonably certain to occur within the action area (RMP planning area boundaries in this BA) of the Federal action subject to section 7 consultation [50 CFR §402.02]. This definition applies only to section 7 analyses and should not be confused with the broader use of this term in the National Environmental Policy Act (NEPA) or other environmental laws.

Buffalo RMP

Cumulative effects include those of future State, tribal, local, or private actions that are reasonably certain to occur in the Buffalo FO. Oil and gas development would occur on a mix of Federal, State, private, and on split estate lands. Additional oil and gas extraction (coalbed methane [CBM] and non-CBM) may occur at a later date within the FO beyond the level of development currently considered. Activities other than oil and gas extraction contributing to cumulative effects in the FO include: coal mining; uranium mining; sand, gravel, and scoria mining; ranching; agriculture; road and railroad construction, and rural and urban housing development.

On-going coal mining activities within the Buffalo FO disturb surface lands at a rate of approximately 2,000 acres per year, with 1,850 acres reclaimed on an annual basis. At present, coal mining has disturbed approximately 54,000 acres, while 20,200 acres have been reclaimed to State of Wyoming standards. An unknown portion of disturbed coal mining area is currently undergoing reclamation, but has not yet met the Wyoming standards. A similar level of both new disturbance and reclamation is expected in the near future.

Uranium mining within the Buffalo FO has resulted in the disturbance of approximately 4,400 acres, while sand, gravel, and scoria mining has resulted in the disturbance of approximately 1,200 acres. Agriculture has resulted in impacts to approximately 113,643 acres of lands formally occupied by native vegetation that served as suitable wildlife habitat.

Urban development within the Buffalo FO has resulted in the loss of approximately 4,362 acres of native vegetation as suitable wildlife habitat. A minor amount of new rural and urban development is expected in the foreseeable future, but no estimate of the amount or types of vegetation disturbance has yet been made. Cumulative impacts to vegetation from roads, railroads, and rural development are anticipated but have not been estimated. Implementation of the Buffalo RMP would not change any potential effects to the Ute ladies'-tresses orchid that may result from current or projected future non-Federal actions.

Platte River RMP (Casper FO)

Cumulative effects include future State, tribal, local, or private actions that are reasonably certain to occur in the Casper FO. Non-Federal actions that may affect the Ute ladies'-tresses orchid include:

- Oil and gas development on private and State lands
- Housing developments along the Platte River, particularly near Casper
- Livestock grazing on private lands
- Sand and gravel operations along major river corridors (especially the North Platte River).

Implementation of the Platte River RMP would not change any potential effects to the Ute ladies'-tresses orchid that may result from current or projected future non-Federal actions.

Cody RMP

Cumulative effects include future State, tribal, local, or private actions that are reasonably certain to occur in the Cody FO. Future State, tribal, local, or private actions in the Cody FO include the following (Harrell 2003):

- Oil exploration proposed for the western side of the Bighorn Mountains
- Bentonite and gypsum mining on the western side of the Bighorn Mountains
- Seismic exploration outside of the town of Clark, near the Clark's Fork River
- Possible coal exploration in coal seams throughout the Cody FO

None of these possible projects occur within suitable or occupied Ute ladies'-tresses orchid habitats. However, if previously unknown populations were identified within these project areas, the Ute ladies'-tresses orchid may be affected. Implementation of the Cody RMP would not change any potential effects to the Ute ladies'-tresses orchid that may result from current non-Federal actions.

Kemmerer RMP

Cumulative effects include future State, tribal, local, or private actions that are reasonably certain to occur in the Kemmerer FO. Activities that may affect the Ute ladies'-tresses orchid in the Kemmerer FO include the following:

- Existing and proposed wind farms
- Hard rock mining (including coal, trona, and phosphates)
- Livestock grazing on private lands
- Non-Federal oil and gas and related energy development
- Continued vehicle collisions (particularly in Nugget Canyon)

Implementation of the Kemmerer RMP would not change any potential effects to the Ute ladies'-tresses orchid that may result from current non-Federal actions.

Lander RMP

Cumulative effects include future State, tribal, local, or private actions that are reasonably certain to occur in the Lander FO. Activities that may affect the Ute ladies'-tresses orchid in the Lander FO include the following:

- Subdivision development along rivers (especially along the Wind River near Dubois) that results in habitat fragmentation
- Sand and gravel operations along river corridors
- Non-Federal oil and gas and related energy development
- Livestock grazing on private lands
- Timber harvesting

None of these activities occur within occupied Ute ladies'-tresses orchid habitats on BLM-administered lands. However, certain components of these projects could directly or indirectly affect the Ute ladies'-tresses orchid if populations were identified in these project areas. Implementation of the Lander RMP

would not change any potential effects to the Ute ladies'-tresses orchid that may result from current non-Federal actions.

Newcastle RMP

Cumulative effects include future State, tribal, local, or private actions that are reasonably certain to occur in the Newcastle FO. Activities that may affect the Ute ladies'-tresses orchid in the Newcastle FO include the following:

- Non-Federal oil and gas and related energy development
- Bentonite mining in the northern third of Crook County
- Livestock grazing on private lands
- Timber harvesting on private lands

None of these possible projects occur within occupied Ute ladies'-tresses orchid habitats. However, certain components of these projects could directly or indirectly affect the Ute ladies'-tresses orchid if populations were identified in these project areas. Implementation of the Newcastle RMP would not change any potential effects to the Ute ladies'-tresses orchid that may result from current non-Federal actions.

Pinedale RMP

Cumulative effects include future State, tribal, local, or private actions that are reasonably certain to occur in the Pinedale planning area. Activities that may affect the Ute ladies'-tresses orchid in the Pinedale FO include the following:

- Subdivision development along rivers (especially along the New Fork and Green Rivers)
- Non-Federal oil and gas and related energy development
- Natural gas development south of Pinedale
- Sand and gravel operations along river corridors

Implementation of the Pinedale RMP would not change any potential effects to the Ute ladies'-tresses orchid that may result from current non-Federal actions.

Great Divide RMP (Rawlins FO)

Cumulative effects include future State, tribal, local, or private actions that are reasonably certain to occur in the Rawlins FO. Activities that may affect the Ute ladies'-tresses orchid in the Rawlins FO include the following:

- Recreation along rivers and river corridors (including camping, rafting, hunting, and golf course development)
- Non-Federal oil and gas fields and related energy development
- Ranching and livestock grazing on private lands
- Proposed additions to an existing wind farm in the Foot Creek Rim

Implementation of the Great Divide RMP would not change any potential effects on the Ute ladies'-tresses orchid that may result from current non-Federal actions.

Green River RMP (Rock Springs FO)

Cumulative effects include future State, tribal, local, or private actions that are reasonably certain to occur in the Rock Springs FO and that might affect the Ute ladies'-tresses orchid. Actions occurring within the FO on non-Federal lands that may affect the Ute ladies'-tresses orchid include:

- Coal mine operations
- Non-Federal oil and gas fields and related energy development
- Coalbed natural gas
- Transmission lines
- Seismic exploration
- Trona (soda ash) mining
- A proposed power plant
- Proposed wind farms
- Livestock grazing on private lands
- Municipal dump expansions
- Housing developments

These activities tend to avoid habitats known to support the Ute ladies'-tresses orchid. However, certain components of these projects, if completed in habitats supporting the orchid, could directly or indirectly affect the Ute ladies'-tresses orchid. Implementation of the Green River RMP would not change any potential effects to the Ute ladies'-tresses orchid that may result from current non-Federal actions.

Grass Creek RMP (Worland FO)

Cumulative effects include future State, tribal, local, or private actions that are reasonably certain to occur in the Grass Creek planning area. Existing and proposed activities on non-Federal lands in the Worland planning area that could affect the Ute ladies'-tresses orchid include:

- Stockyard operations for cattle and sheep that provide carrion
- Cottonwood removal in riparian areas
- Oil and gas development on private lands
- Beet farming near and within riparian corridors.

Implementation of the Grass Creek RMP would not change any potential effects to the Ute ladies'-tresses orchid that may result from current non-Federal actions.

Washakie RMP (Worland FO)

Cumulative effects include future State, tribal, local, or private actions that are reasonably certain to occur in the Washakie planning area. Existing and proposed activities on non-Federal lands in the Washakie planning area that could affect the Ute ladies'-tresses orchid include:

- Stockyard operations for cattle and sheep (which provide carrion) along the Bighorn and Nowood Rivers
- Cottonwood removal in riparian areas
- Oil and gas development on private lands
- Beet farming near and within riparian corridors

Implementation of the Washakie RMP would not change any potential effects to the Ute ladies'-tresses orchid that may result from current non-Federal actions.

5.0 CONSERVATION STRATEGIES

Implementation of the following conservation strategies is intended to minimize or eliminate adverse impacts to the Ute ladies'-tresses orchid that are likely to result from implementation of the management actions provided in the RMPs. In addition to the existing conservation measures in the RMPs (items 1 through 4), the BLM has committed to implement conservation measures 5 through 17. The BLM will also consider implementing best management practices (BMPs) (items 18 through 37) to further protect the Ute ladies'-tresses and its habitat. In the event new populations are discovered, these measures would apply to the individual plants, and should include a 0.5-mile buffer around the new site until further investigation and consultation results in more appropriate management buffers.

EXISTING PROTECTIONS IN THE RMPS

The following section presents measures included in all four RMPs either in the original RMP, or by maintenance action at a later date. These protections either directly protect the orchid and its habitat or indirectly as a side/by-product benefit.

1. The *Wyoming BLM Standard Mitigation Guidelines for Surface Disturbing Activities* requires any lessee or permittee to conduct inventories or studies in accordance with BLM and USFWS guidelines to verify the presence or absence of threatened or endangered species before any activities can begin on site. In the event the presence of one or more of these species is verified, the operation plans of a proposed action will be modified to include the protection of the species and its habitat, as necessary. Possible protective measures may include seasonal or activity limitations, or other surface management and occupancy constraints (BLM 1990).

    - Surface disturbance will be prohibited within 500 feet of surface water and/or riparian areas (Wyoming BLM Mitigation Guidelines for Surface-disturbing and Disruptive Activities).

    - No Surface Occupancy will be allowed within special management areas (e.g., known threatened or endangered species habitat) (Wyoming BLM Mitigation Guidelines for Surface-disturbing and Disruptive Activities).

    - Portions of the authorized use area are known or suspected to be essential habitat for threatened or endangered species. Prior to conducting any onsite activities, the lessee/permittee will be required to conduct inventories or studies in accordance with BLM and U.S. Fish and Wildlife Service guidelines to verify the presence or absence of this species. In the event that an occurrence is identified, the lessee/permittee will be required to modify operational plans to include the protection requirements of this species and its habitat (e.g., seasonal use restrictions, occupancy limitations, facility design modifications) (Wyoming BLM Mitigation Guidelines for Surface-disturbing and Disruptive Activities).

2. Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for the Public Lands Administered by the Bureau of Land Management in the State of Wyoming, Specifically:

    - Standard 1 - Within the potential of the ecological site (soil type, landform, climate, and geology), soils are stable and allow for water infiltration to provide for optimal plant growth and minimal surface runoff.

- Grazing management practices will restore, maintain, or improve plant communities. Grazing management strategies consider hydrology, physical attributes, and potential for the watershed and the ecological site (BLM Wyoming Guidelines for Livestock Grazing Management).

- Standard 3 - Upland vegetation on each ecological site consists of plant communities appropriate to the site which are resilient, diverse, and able to recover from natural and human disturbance.

- Standard 4 - Rangelands are capable of sustaining viable populations and a diversity of native plant and animal species appropriate to the habitat. Habitats that support or could support threatened species, endangered species, species of special concern, or sensitive species will be maintained or enhanced.

    - Grazing management practices will incorporate the kinds and amounts of use that will restore, maintain, or enhance habitats to assist in the recovery of Federal threatened and endangered species or the conservation of Federally-listed species of concern and other state-designated special status species. Grazing management practices will maintain existing habitat or facilitate vegetation change toward desired habitats. Grazing management will consider threatened and endangered species and their habitats (BLM Wyoming Guidelines for Livestock Grazing Management).

3. The BLM will maintain biological diversity of plant and animal species; support WGFD strategic plan population objective levels to the extent practical and to the extent consistent with BLM multiple use management requirements; maintain, and where possible, improve forage production and quality of rangelands, fisheries, and wildlife habitat; and to the extent possible, provide habitat for threatened and endangered and special status plant and animal species on all public lands in compliance with the ESA and approved recovery plans (Buffalo RMP, p.33).

4. In any proposed new access, wetland and riparian areas will be avoided where possible (18 CFR 725.2 – Floodplain Management and Protection of Wetlands).

CONSERVATION MEASURES COMMITTED TO BY BLM

The following section presents new conservation measures reviewed by all tem Wyoming FOs and agreed upon by all ten field managers and will be implemented upon acceptance of this BA by the USFWS. These conservation measures are intended to directly conserve the orchid, and to reduce or eliminate adverse effects from the spectrum of management activities on BLM land. These measures are provided to outline opportunities to benefit the orchid, and to help avoid negative impacts through the thoughtful planning of activities. Plans that incorporate them, and projects that implement them, are generally not expected to have adverse effects on the orchid, and implementation of these measures is expected to lead to conservation of the species.

These conservation measures are binding measures that BLM shall implement in order to facilitate conservation of the orchid. However, because it is impossible to provide measures that will address all possible actions, in all locations across the range of the orchid, it is imperative that project-specific analysis and design be completed for all actions that have the potential to affect the orchid. Circumstances unique to individual projects or actions and their locations may still result in adverse effects to this plant. In these cases, additional or modified conservation measures may be necessary to

avoid or minimize adverse effects or further consultation with the USFWS will be required. The order in which the conservation measures appear below does not imply their relative priority.

The following two conservation measures (5 and 6), will be added to grazing permit renewals in allotments with known populations of the orchid.

5. Place mineral supplements, new water sources (permanent or temporary), or supplemental feed for livestock for livestock, wild horses, or wildlife at least 1.0 mile from known orchid populations. Hay or other feed and straw must be certified weed-free. These restrictions are intended to keep free-ranging livestock away from populations of the orchid and subsequent grazing on individual orchid plants. Surveys for the orchid will be conducted in potential orchid habitat prior to livestock operations projects. Placement of mineral supplements, straw or other feed for livestock within 1.0 mile of known populations of the orchid will be evaluated and approved by the BLM with concurrence by USFWS and implemented on a case-by-case basis only.

6. The BLM will not increase permitted livestock stocking levels in any allotment with pastures containing known orchid populations without consulting with the USFWS. It is unknown to what extent overall impacts due to livestock grazing have on the orchid, whether it is detrimental due to actual grazing and trampling of plants or beneficial due to livestock removal of adjacent competing vegetation.

7. Grazing will be intensively managed within known habitat containing populations from July through September, to allow plants to bloom and go to seed.

8. Recreational site development will not be authorized in known Ute ladies'-tresses habitat.

9. The Bureau will manage stream habitats to retain, re-create, or mimic natural hydrology, water quality, and related vegetation dynamics. Projects that may alter natural hydrology or water quality, change the vegetation of the riparian ecosystem and cause direct ground disturbance will be evaluated and redesigned to ensure that adverse effects to populations of the orchid do not occur.

10. Biological control of noxious plant species will be prohibited within 1.0 mile from known orchid habitat until the impact of the control agent has been fully evaluated and determined not to adversely affect the plant population. BLM will monitor biological control vectors.

11. Except in cases of extreme ecological health (insect or weed outbreaks/infestations), herbicide treatment of noxious plants/weeds will be prohibited within 0.25 miles of known populations of the orchid and insecticide/pesticide treatments will be prohibited within 1.0 mile of known populations of the orchid to protect pollinators.

    Where insect or weed outbreaks have the potential to degrade area ecological health inside the buffers listed above, at the discretion of the BLM's authorized officer and with concurrence by the USFWS, the following will apply: where needed, and only on a case-by-case basis, a pesticide use proposal or other site specific plan will address concerns of proper timing, methods of use, and chemicals. Pesticides specifics to dicots will be preferred where these are adequate to control the noxious weeds present.

    Aerial application of herbicides will be carefully planned to prevent drift in areas near known populations of the orchid (outside of the 0.25 mile buffer). The BLM will work with the

Animal and Plant Health Inspection Service (APHIS), the USFWS and County Weed and Pest Agencies to select pesticides and methods of application that will most effectively manage the infestation and least affect the orchid.

12. If revegetation projects are conducted within 0.25 miles of known habitat for the orchid, only native species will be selected. This conservation measure will keep non-native species from competing with the orchid.

13. Limit the use of off road vehicles (OHVs) to designated roads and trails within 0.5 mile of known populations of the orchid, with no exceptions for the "performance of necessary tasks" other than fire fighting and hazardous material cleanup allowed using vehicles off of highways. No OHV competitive events will be allowed within 1.0 mile of known populations of the orchid. Roads that have the potential to impact the orchid and are not required for routine operations or maintenance of developed projects, or lead to abandoned projects will be reclaimed as directed by the BLM.

14. Apply a condition of approval (COA) on all applications for permit to drill (APDs) oil and gas wells for sites within 0.25 miles of any known populations of the orchid. This condition will prohibit all authorized surface disturbance and OHV travel from sites containing populations of the orchid. Operations outside of the 0.25 mile buffer of orchid populations, such as "directional drilling" to reach oil or gas resources underneath the orchid's habitat, would be acceptable.

15. For known Ute ladies'-tresses populations, the BLM will place a Controlled Surface Use (CSU) stipulation prohibiting all surface disturbances on new oil and gas leases, buffering the area within 0.25 miles of known Ute ladies'-tresses populations. For existing oil and gas leases with known Ute ladies'-tresses populations (these would be for newly discovered populations not currently documented), the Bureau will require the COA in conservation measure 14 above including the same 0.25 mile buffer area around those known Ute ladies'-tresses populations.

16. Prohibit the sale and disposal of salable minerals in habitat containing known populations of the orchid (within a 0.25 mile buffer area of known orchid populations), and where possible pursue acquisition of property with known populations of the orchid with salable minerals. The disposal (sale and removal) of salable minerals is a discretionary BLM action and is prohibited within a 0.25 mile buffer area of known populations of the orchid.

17. To prevent loss of habitat for the orchid, the BLM "shall retain in Federal ownership all habitats essential for the survival and recovery of any listed species, including habitat that was used historically, that has retained its potential to sustain listed species, and is deemed to be essential to their survival" (BLM 2001). Prior to any land tenure adjustments in *known* habitat for the orchid, the BLM will survey to assess the habitat boundary and retain that area in Federal ownership. BLM-administered public lands that contain identified habitat for the orchid will not be exchanged or sold, unless it benefits the species.

18. All proposed rights-of-way projects (powerlines, pipelines, roads, etc.) will be designed and locations selected at least 0.25 miles from any known orchid habitat to minimize disturbances. Rights-of-way actions for roads, powerlines, pipelines, etc. will avoid occupied habitat for the orchid. If avoidance of adverse effects is not possible, the Bureau will re-initiate consultation with the Service.

19. All proposed projects will be designed and locations selected to minimize disturbances to known populations of the orchid, and if the avoidance of adverse affects is not possible, the

BLM will re-initiate consultation with the USFWS. Projects will not be authorized closer than 0.25 miles from any known populations of the orchid without concurrence of the USFWS and the BLM authorized officer. No ground disturbing construction activities will be authorized within 0.25 miles of any known populations of the orchid during the essential growing season time period (from July to September, the growing, flowering and fruiting stages) to reduce impacts to this species.

20. In order to conserve and protect natural areas, planned recreational foot trails are created to control human traffic. BLM will create programs that will strive to protect the orchid's habitat and prevent new trails from being constructed within 0.25 miles from known occurrences of the orchid.

BEST MANAGEMENT PRACTICES

The following BMPs are to be considered on a case-by-case basis at the project level, and implemented where appropriate, to further protect the orchid.

21. When project proposals are received, BLM will initiate coordination with the USFWS at the earliest possible date so that both agencies can advise on project design. This should minimize the need to redesign projects at a later date to include orchid conservation measures, determined as appropriate by the USFWS.

22. The BLM will participate in the development of both, a conservation agreement/assessment strategy and a species specific recovery plan for the orchid in coordination with the USFWS and other agencies as appropriate. Orchid habitat on BLM-administered lands will be monitored to determine if recovery/conservation objectives are being met.

23. The BLM will coordinate with the USFWS, the National Resource Conservation Service (NRCS), and private landowners to ensure adequate protection for the orchid and its habitat when new activities are proposed, and to work proactively to enhance the survival of the plant.

24. In the event that a new population of the orchid is found, the USFWS Wyoming Field Office (307-772-2374) will be notified within 48 hours of discovery.

25. Livestock grazing, mowing/haying, and some burning are specific management tools that the BLM may use to maintain favorable habitat conditions for the orchid where feasible. Mowing and grazing, with proper timing and intensity, reduce the native and exotic plant competition for light and possibly for water, space and nutrients.

26. Recreational foot trails that may be located adjacent to Ute ladies' tresses plant habitat should be constructed to reduce impacts to this species.

27. To prevent loss of habitat for the orchid, the BLM "shall retain in Federal ownership all habitats essential for the survival and recovery of any listed species, including habitat that was used historically, that has retained its potential to sustain listed species, and is deemed to be essential to their survival" (BLM 2001). Prior to any land tenure adjustments in *potential* orchid habitat, the BLM will survey to assess the potential for the existence of the orchid. While it is difficult to assess whether the orchid was historically present on such sites, the BLM should try and retain in Federal ownership all habitats essential for the survival and recovery of the orchid, including habitat that was used historically, that has retained its potential to sustain this listed

species, and is deemed to be essential to their survival (BLM 2001). Potential orchid habitat may be used for reintroduction efforts and is important for the recovery and enhancement of the species.

28. Prescribed fire and grazing activities shall be coordinated between biologists, rangeland management specialists, and fire personnel to ensure that no damage occurs to the plant habitat when being used to maintain the habitat for the species.

29. Maintain and restore the dynamics of stream systems, including the movement of streams within their floodplains, which are vital for the life cycle of the orchid. Flow timing, flow quantity, and water table characteristics should be evaluated to ensure that the riparian system is maintained where these plants occur. The Bureau should continue water use in a manner that maintains suitable habitat for the Ute ladies' tresses orchid to benefit the species.

30. Maintain and restore the natural species composition and structural diversity of plant communities in riparian zones and wetlands.

31. For the protection of the orchid and its potential habitat, surface-disturbing activities listed above, should be avoided in the following areas when they occur outside of the protective 0.25 buffer from populations of the orchid: (a) identified 100-year flood plains; (b) areas within 500 feet from perennial waters, springs, wells, and wetlands, and; (c) areas within 100 feet from the inner gorge of ephemeral channels.

Research/Monitoring/Inventories

32. Form a steering committee to develop and prioritize management practices and assist BLM and USFWS with research projects.

33. Conduct inventories for the orchid in areas with potential habitat.

34. Maintain a database of all searched, inventoried, or monitored orchid sites.

35. Analyze vegetation treatments (mowing, prescribed fire, mechanical treatments, etc.) in known or potential habitat for the orchid to determine impacts to the species.

36. Establish monitoring, biological, ecological, population demographics, and life history studies as funding and staffing allow, such as, monitoring current populations each year for trends, studies regarding identification of pollinators, genetics, life history, effects of pesticides and herbicides, seed viability and germination, and studies regarding monitoring the success of reintroduction efforts. Monitor orchid population sites for invasion by noxious and invasive plant species.

37. Perform monitoring and analysis pertaining to flow timing, flow quantity, and water table characteristics with the goal of ensuring that riparian vegetation, in areas of known and potential habitat for the orchid, is maintained.

Collection

38. When possible, collect and bank orchid seeds at local, regional, national, and international arboreta, seed banks, and botanical gardens as insurance against catastrophic events, for use in biological studies, and for possible introduction/reintroduction into potential habitat.

Education

39. Train law enforcement personnel on protections for the orchid and its habitat, its status, and current threats to its existence.

40. Educate resource specialists, rangers, and fire crews about the orchid and its habitat to help with project design for the general area and for fire suppression actions occurring in potential habitat for the orchid and on the habitat characteristics and plant identification for the plant, so that if they encounter the orchid occurring in riparian habitat, they can report it to their office threatened and endangered species specialist.

Introduction/Reintroduction

41. The BLM should work towards developing reintroduction sites in coordination with the USFWS and to maintain the integrity of these sites for the survival of the orchid. The objective would be to reintroduce populations of the orchid into areas of historic occurrence and introduce new populations in suitable habitat within the plant's historic range.

42. Develop propagation techniques and use them to reintroduce/introduce the orchid and to repopulate known populations in the event population recovery becomes necessary.

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