

FINAL REPORT

**STATEWIDE PROGRAMMATIC  
BIOLOGICAL ASSESSMENT:  
BLOWOUT PENSTEMON  
(*Penstemon haydenii*)**

*Submitted to:*

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Photo by Walt Fertig, Wyoming Natural Diversity Database

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## Acronyms and Abbreviations

ACEC	Area of Critical Environmental Concern
ACHP	Advisory Council on Historic Preservation
AML	Appropriate Management Levels
AMP	Allotment Management Plan
APD	Application for Permit to Drill
ARPA	Archeological Resources Protection Act
AUM	Animal Unit Months
BA	Biological Assessment
BLM	Bureau of Land Management
C&MU	Classification and Multiple Use
CFR	Code of Federal Regulations
COA	Condition Of Approval
EA	Environmental Assessment
EEA	Environmental Education Area
EIS	Environmental Impact Statement
ERMA	Extensive Recreation Management Area
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act
FO	Field Office
GDRA	Great Divide Resource Area
HMA	Herd Management Area
HMP	Habitat Management Plan
MBF	Thousand Board Feet
MMBF	Million Board Feet
NNL	National Natural Landmark
NRHP	National Register of Historic Places
NSO	No Surface Occupancy
ORV	Off-Road Vehicle
POD	Plan Of Development
PRRA	Platte River Resource Area
R&PP	Recreation and Public Purpose
RAMP	Recreation Area Management Plan
RMP	Resource Management Plan
RMU	Resource Management Unit
ROW	Right Of Way
RPS	Rangeland Program Summary
SHPO	State Historic Preservation Office
SRMA	Special Recreation Management Area
TGA	Taylor Grazing Act
USFWS	U.S. Fish and Wildlife Service
VRM	Visual Resource Management
WGFD	Wyoming Game and Fish Department
WSA	Wilderness Study Area
WDEQ	Wyoming Department of Environmental Quality
WYNDD	Wyoming Natural Diversity Database

# 1.0 INTRODUCTION

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## PURPOSE

This programmatic biological assessment (BA) assesses the potential effects to the blowout penstemon (*Penstemon haydenii*) from management actions included in four Resource Management Plans (RMPs) approved by the Wyoming Bureau of Land Management (BLM). The blowout penstemon is a Federally listed endangered plant species. The objectives of this BA are to:

- Summarize the biology of the blowout penstemon, including its known and potential distribution in Wyoming;
- Review pertinent RMPs and RMP amendments, and identify management actions with the potential to affect the blowout penstemon or its habitat;
- Assess the potential effects of actions proposed in the Great Divide, Green River, Lander, and Platte River RMPs on the blowout penstemon and its habitat;
- Prepare an effects determination on the blowout penstemon for each of the proposed actions identified in the four RMPs; and
- Recommend conservation strategies to minimize or eliminate adverse effects on the species.

The analysis area for each management action is based on the 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 blowout penstemon in the area affected by the management action.

## ORGANIZATION OF REPORT

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

- 1.0 Introduction – describes the purpose of the analysis, the scope of the biological assessment, 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 blowout penstemon.
- 3.0 Analysis of the RMPs - a description of all the management actions combined over all the FOs. This will prevent and reduce their repetition under each FO. In subsequent sections each FO is listed separately and any management actions in the RMP specific to each FO with known or potential blowout penstemon habitat are reviewed.
- 4.0 Analysis of Great Divide (Rawlins FO) Resource Management Plan – describes habitat and occurrence of the blowout penstemon within the area affected by the Great Divide RMP, analyzes the effects from management actions authorized under each program, and includes an effects determination specific to each management action for the Great Divide RMP.

- 5.0 Analysis of Platte River (Casper FO) Resource Management Plan – describes habitat and occurrence of the blowout penstemon within the area affected by the Platte River RMP, analyzes the effects from management actions authorized under each program, and includes an effects determination specific to each management action for the Platte River RMP.
- 6.0 Analysis of Green River (Rock Springs FO) Resource Management Plan – describes habitat and occurrence of the blowout penstemon within the area affected by the Green River RMP (BLM 1997), analyzes the effects from management actions authorized under each program, and includes an effects determination specific to each management action for the Green River RMP (BLM 1997).
- 7.0 Analysis of Lander (Lander FO) Resource Management Plan – describes habitat and occurrence of the blowout penstemon within the area affected by the Lander RMP (BLM 1987), analyzes the effects from management actions authorized under each program, and includes an effects determination specific to each management action for the Lander RMP (BLM 1987).
- 8.0 Conservation Strategies – provides a list of binding Conservation Measures and non-binding Best Management Practices that are designed to further reduce potential effects to the blowout penstemon. These recommended measures were prepared in coordination with the U.S. Fish and Wildlife Service (USFWS) office in Cheyenne, Wyoming and are considered to be the best science available, and are widely accepted as comprehensive and targeted for the blowout penstemon.
- 9.0 References – provides a list of documents reviewed for the preparation of this report.
- 10.0 Appendix – tables – A-1 summary of blowout penstemon effects determinations and table A-2 list of BLM management actions and associated activities.

## METHODS

Literature was reviewed to gather information on the ecology and habitat of the blowout penstemon. Biologists from the Casper, Lander, Rawlins, and Rock Springs Field Offices (FOs) of the BLM were contacted as part of this review. In an effort to collect the most recent information on ecology, occurrence, and listing status, USFWS personnel in the Cheyenne, Wyoming office were contacted. The *Endangered and Threatened Wildlife and Plants: Final Rule to Determine Penstemon Haydenii (Blowout Penstemon) To Be an Endangered Species* was reviewed (USFWS 1987). The Wyoming Natural Diversity Database (WYNDD) provided current data on element occurrence and habitat distribution.

Within Wyoming, the blowout penstemon occurs only within Carbon County (**Map 1**) (WYNDD 2003). Fertig (2001b) identified potential habitat for blowout penstemon in the Killpecker Sand Dunes of north-central Sweetwater County, the Green Mountains in southeast Fremont County, the Sandhills in southwestern Carbon County, and the Ferris Mountain/Seminole Mountain area in northern Carbon County (**Map 1**). **Map 2** depicts the Aeolian sand deposits in Wyoming, which is the overall base habitat for the blowout penstemon, and shows the potential habitat for the plant. The blowout penstemon primarily occurs within these sand deposits on microsites of shifting sand dunes and blowout depressions created by wind, so a much smaller subset of the area shown on **Map 2** would be the actual habitat. There have been some extensive surveys in potential habitat (Heidel 2004) over the past few years that have not turned up any new populations (**Map 3**). Three different RMPs are associated with potential habitat in these three counties and have the potential to affect the blowout penstemon. Therefore, this BA assesses the potential affects of actions included in the Rawlins FO - Great Divide RMP (BLM 1990),

Rock Springs FO - Green River RMP (BLM 1997), and Lander FO - Lander RMP (BLM 1987). Because of the close proximity and the potential for suitable habitat to occur in the Casper FO, the Platte River RMP (BLM 1985) was analyzed as well. These RMPs were reviewed and the proposed actions and impact minimization measures were summarized. The RMPs for the remaining Wyoming BLM Field Offices were not included because blowout penstemon is not known or expected to occur in the areas affected by actions included in these RMPs.

After review of the RMPs, management actions were analyzed for their potential to affect the blowout penstemon. Proposed Federal actions were evaluated for their potential to directly and indirectly affect the blowout penstemon. 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 the removal, reduction in habitat, and possession of Federally endangered plants. It also prohibits the malicious damage of these plants in areas under Federal jurisdiction and destruction of endangered plants in non-Federal areas in violation of state law or regulation, or during any violation of a state criminal trespass law.

The results of the effects analysis were used to develop a determination of effects on the blowout penstemon for each program described in the four RMPs. Management actions were evaluated in terms of their potential to directly and indirectly affect the blowout penstemon. Each determination was based on the management prescription described and any measures set forth to minimize the effects specified in the RMPs. Because the blowout penstemon was just recently discovered (1996 and confirmed in 1999) in Wyoming, conservation measures were not included in the original RMPs. The binding Conservation Measures listed in the Conservation Strategies section (Section 7), are considered to be operant in the analysis of effects and determinations. The following categories are possible effects determinations:

- No effect;
- May affect, but is **not likely to adversely affect** due to:
  - Beneficial effects,
  - Discountable effects,
  - Insignificant effects; or;
- 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.

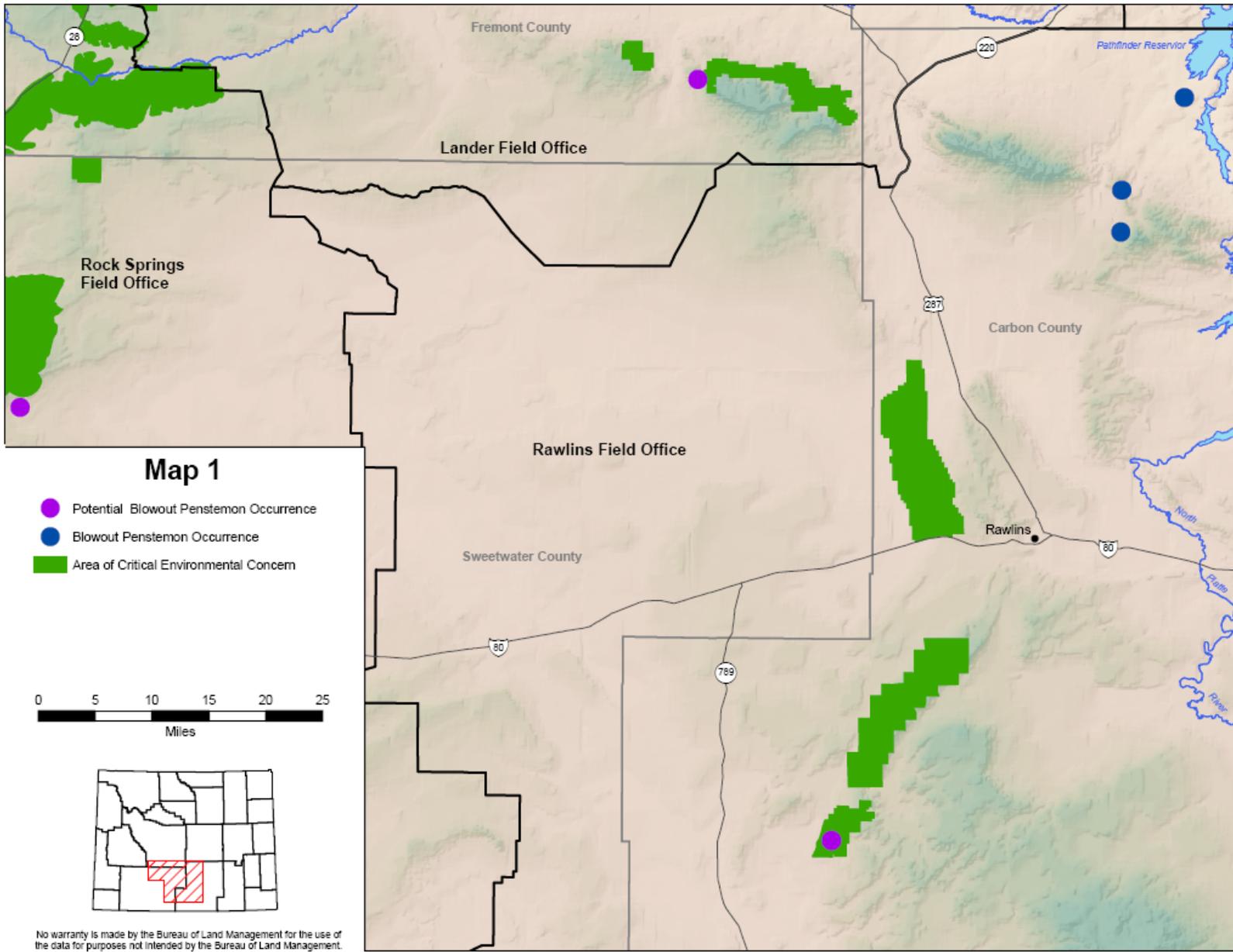
“No effect” means there are absolutely no effects to the species and its critical habitat, either positive or negative. A “no effect” determination does not include small effects or effects that are unlikely to occur. If effects are insignificant (in size) or discountable (extremely unlikely), a determination 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 take 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). Determinations of “not likely to

adversely affect, due to beneficial, insignificant, or discountable effects” require 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 take of an endangered or threatened 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 in this BA are provided for each program type and management action described in the four RMPs.



## 2.0 SPECIES INFORMATION

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### LISTING STATUS

The blowout penstemon (*Penstemon haydenii*) was listed as endangered under the Endangered Species Act on October 1, 1987 (USFWS 1987). The Natural Heritage rank is G1 and S1. This means that globally (G1), it is critically imperiled because of extreme rarity (often known from five or fewer extant occurrences or very few remaining individuals) or because some factor of a species' life history makes it vulnerable to extinction. The state rank (S1) also means that the species is considered imperiled because of rarity, often known from five or fewer extant occurrences or very few remaining individuals. WYNDD lists the blowout penstemon as a regional endemic species and a High Conservation Priority (Fertig 2001a).

### ECOLOGY

#### Description of Species

The blowout penstemon is a member of the figwort family (*Scrophulariaceae*). The plant is a hairless perennial herb that grows one to two feet high (USFWS 1987). Vegetative stems are usually less than 30 centimeters tall and have greenish-blue, waxy, linear leaves 2.5-12 centimeters long and 0.3-1 centimeters wide (Fertig 2001a). Flowering stems have narrow, linear leaves at the base, and broad, clasping, waxy leaves that taper to a narrow tip. The inflorescence is 6-16 centimeters long with compact, leafy whorls of milky blue to pale lavender flowers. The flowers are 23-25 millimeters long with tubular, bi-lobed, and vanilla-scented corollas. The fruit is 13-16 millimeters long with light-brown, disc-shaped seeds (Fertig 2001a). The plant flowers from June to July and fruits from July to August. Similar species include *Penstemon grandiflorus*, which has larger, non-aromatic flowers and larger fruits, and *Penstemon angustifolius* var. *caudatus*, which has smaller flowers (Fertig 2001a).

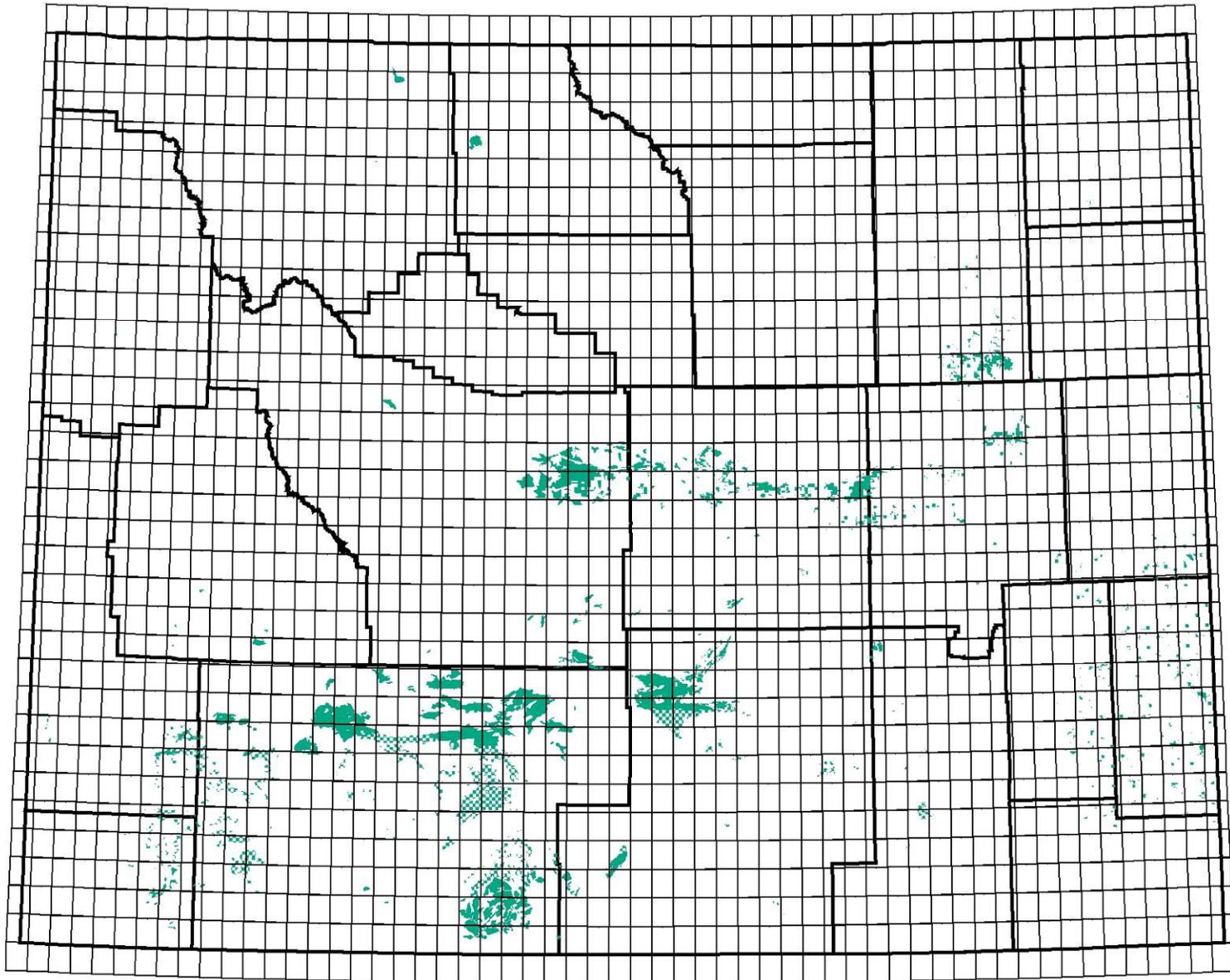
#### Description of Habitat

The blowout penstemon's habitat consists of sparsely vegetated, early successional, shifting sand dunes and blowout depressions created by wind (Fertig 2001a, Fertig 2001b). In Wyoming, it is often found on the lower half of steep, sandy slopes, deposited at the bases of sedimentary or granite mountains or ridges. Blowout penstemon is found most frequently in microsites that are zones of sand accumulation. The plant is a primary invader that does not persist when a blowout becomes completely vegetated (USFWS 1987). Wyoming populations occur at an elevation between 2035 and 2270 meters (Fertig 2001a, Fertig 2001b). On unstable, windward slopes, blowout penstemon is typically found with communities of blowout grass (*Redfieldia flexuosa*), lemon scurf-pea (*Psoralidium lanceolatum*), and thickspike wheatgrass (*Elymus lanceolatus* var. *lanceolatus*) with less than five percent vegetative cover. Populations on more stable, lee slopes occur in similar communities with vegetative cover between 15 and 40 percent. Some populations may also be found on choppy dunes associated with silver sagebrush (*Artemisia cana*) and thickspike wheatgrass, or on barren slopes above stands of chokecherry (*Prunus virginiana*) and stinging nettle (*Urtica dioica*) associated with seeps (Fertig 2001a, Fertig 2001b).

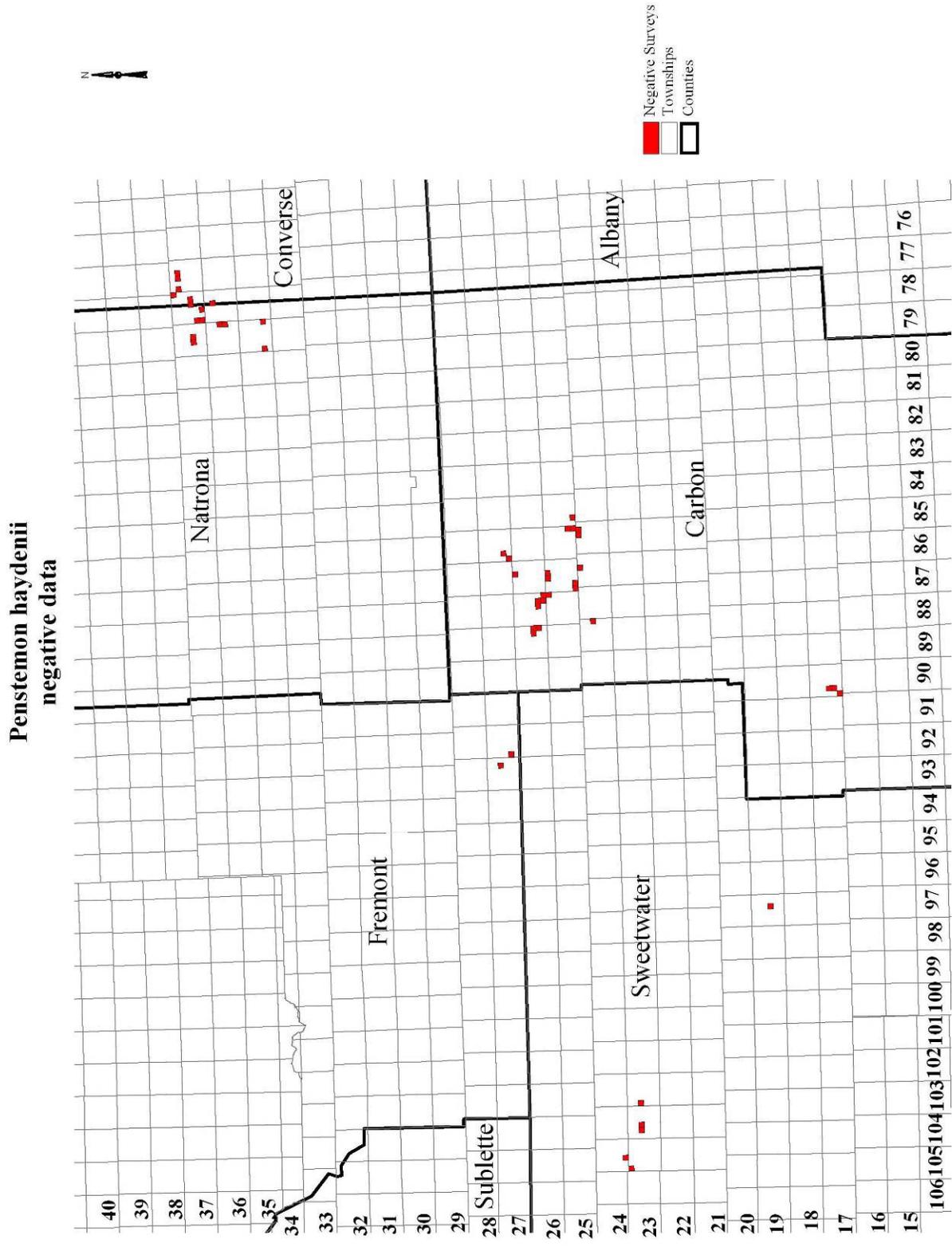
## Distribution

The blowout penstemon is a regional endemic species of the Sand Hills of west-central Nebraska and the northeastern Great Divide Basin in Carbon County, Wyoming (Fertig 2001a, Fertig 2001b). This species is known from three occurrences in Wyoming (**Map 1**) (WYNDD 2003). It was initially discovered in Wyoming by Frank Blomquist in 1996 (Fertig 2001a). Wyoming populations are found northwest of Bradley Peak in the western Seminoe Mountains, on the south slope of Bear Mountain, and on the north side of Junk Hill at the eastern side of the Ferris Mountains (Fertig 2001b). Wyoming populations of blowout penstemon occur on lands managed by the State of Wyoming and on BLM surface lands within Carbon County under the jurisdiction of the Rawlins FO (Fertig 2001b). The known populations are subdivided into at least eight subpopulations that occupy about 80 acres within five square miles (Fertig 2001b). There is no critical habitat designated for the blowout penstemon (USFWS 1987). However, there is a recovery plan in place (USFWS 1992). At the time of the recovery plan's publication (USFWS 1992), there were no known occurrences of blowout penstemon in Wyoming. Therefore, the recovery plan focuses on habitat protection in Nebraska.

**Map 2 – Aeolian Sand Deposits on Public Lands in Wyoming**



**Map 3 – Penstemon haydenii “Negative” Survey Data (Heidel 2004)**



## Threats

No long-term trend data is available on the Wyoming population. The cause of the sharp decline in the Nebraska population is also unknown, although wildfire control, severe drought, improvements in range management, leveling of sand dunes, and outbreaks of pyralid moths have all been identified as causes (Fertig, 2000). Threats to the viability of the species include changes in habitat quality, livestock trampling and grazing, over-collection, off-road vehicles (ORV), pesticides, construction activities, and natural threats (Heidel 2004, Fertig 2001b, USFWS 1992).

Changes in habitat quality occur because of vegetative succession in the absence of periodic disturbances. Historically, fire and grazing helped maintain suitable habitats by removing sand-stabilizing vegetation. Implementation of fire-control policies, elimination of bison, initiation of soil conservation programs, and increased use of rotational grazing practices have reduced the incidents of wind erosion, resulting in a loss of blowout penstemon habitat (Heidel 2004, Fertig 2001b).

Blowout penstemon is edible to cattle and horses, but is not preferred forage if other vegetation is available. Some evidence indicated drought might be the primary threat to the existence of the species. In years with lower than normal precipitation or in the end period of intensive grazing, livestock have been observed to closely graze almost every available plant when more favorable forage is limited. Livestock trampling damage is typically not significant because of the plant's sparse distribution and shifting substrate. Fertig (2001b) observed stem damage from deer or elk trampling on 10 percent of the population at Bear Mountain and on 60 to 80 percent of the stems at Bradley Peak.

Blowout penstemon is vulnerable to over-collection for seed and garden stock. Penstemons in general are a desirable landscape plant, but most of the known locations of blowout penstemon in Wyoming and Nebraska are remote and inaccessible (Heidel 2004, Fertig 2001b, USFWS 1992).

Blowout penstemon habitat (sand dunes) is popular terrain for off-road vehicles (ORVs), especially on state and public lands. Hill climbing and associated ORV activities may benefit blowout penstemon habitat by ensuring continued disturbance and erosion. However, driving directly over plants may cause a severe negative impact to populations (USFWS 1992). The known blowout penstemon populations in Wyoming are sufficiently remote to offer some protection from high ORV use (Heidel 2004, Fertig 2001b).

Invasive and noxious weeds have the potential to threaten habitat and populations of blowout penstemon due to over-competition by weeds. Impacts of herbicides on blowout penstemon are unknown, however it is likely that broadleaf weed killers would negatively impact populations of this species. Because of the sparse vegetation cover within blowout penstemon habitat, herbicide application is minimal in Nebraska and Wyoming. The use of insecticides for range pests may negatively impact the pollinators of this species (Heidel 2004, Fertig 2001b, USFWS 1992).

Construction of permanent roads or ranch trails within suitable blowout penstemon habitat is unlikely because of the unsuitability of shifting sand as a road surface or trail. Home construction on blowout penstemon habitat is also unlikely based on the instability of the substrate. Powerlines and pipeline construction may have short-term negative impacts during the construction phases of the projects (Heidel 2004, Fertig 2001b).

Oil and gas exploration and development have the potential to negatively impact the plants habitat. However, leasing and development activities within blowout penstemon habitats would be avoided and activities would be required to move pads to adjacent areas and drill diagonally.

Sand mining near the Ferris Mountains occurs adjacent to the recreational area near Seminole Road. Sand removed from the area is used for golf courses. Mining in habitats of known blowout penstemon populations are not feasible due to isolated and rugged terrain.

Natural succession, which involves the vegetative stabilization of shifting dunes and blowouts, is a threat to existing populations of blowout penstemon. Insects, such as spider mites, grasshoppers, and penstemon aphids, also pose a threat to blowout penstemon populations. The most serious pest problem may result from the larvae of Pyralid moths, which bore into the stems and rootcrowns of blowout penstemon to pupate. This frequently results in individual plant death (Heidel 2004, Fertig 2001b).

## 3.0 ANALYSIS OF THE RMPS

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### INTRODUCTION

In the introduction, under “Programs and Actions” is a description of all the management actions combined over all the FOs. This will prevent and reduce their repetition under each FO. In subsequent sections each FO is listed separately and any management actions in the RMP specific to each FO with known or potential blowout penstemon habitat are reviewed.

The effects analysis involves evaluation of management actions for their potential to affect blowout penstemon habitat, including management actions or impact minimization measures that are unique to the particular RMP. The effects analysis also incorporates the Conservation Strategies.

A determination of potential effects is made and is shown in a separate table of all the individual management actions and determinations for each FO. In addition, there is a section on cumulative effects.

### Programs and Actions

#### 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 existing access 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. 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. A detailed evaluation of areas with a high density of roads may be completed to determine needs for specific road closures or rehabilitation. Specific impact minimization measures and design requirements for roads are developed through environmental analyses as part of specific project 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.

## **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 program activities include dust control, weather monitoring, and air quality data monitoring. The air quality management program may evaluate or restrict surface development activities. The BLM ensures 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 the coordination of activities with the Wyoming Department of Environmental Quality (WDEQ) and the U.S. Environmental Protection Agency. Laws controlling air pollutants in the United States are 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 (PM<sub>10</sub>), nitrogen dioxide (NO<sub>2</sub>), ozone, sulfur dioxide (SO<sub>2</sub>), and carbon monoxide (CO). Air quality stations used to monitor particulates, if located in an LAU, could cause disturbances to lynx through the building/construction of the station and associated access roads, maintenance and upkeep, and equipment reading and repair. No monitoring stations are currently in any lynx LAUs on BLM lands in Wyoming, although additional Federal and state funded stations are being placed in western 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 PM<sub>10</sub>, SO<sub>2</sub>, and NO<sub>2</sub>. 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.

## **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; improving opportunities for high quality outdoor recreation; and, improving visitor services related to safety, information, interpretation, and facility development and maintenance.

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. The designation of ACECs in an RMP is just simply a designation, and did 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. Generally, ACEC status is a beneficial impact on wildlife and plant 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-disturbing activities, or if BLM-administered lands are proposed to be transferred out of federal ownership.

The BLM performs inventory activities as well as land management activities. 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 activities are used for documentation and development of impact minimization plans before other resource program surface-disturbing activities may take place. Inventory activities commonly entail the use of hand tools, power tools, or heavy machinery, vehicle use and localized human activity. Inventories are divided into Class I, Class II, and Class III inventories. The BLM does cultural resource inventories normally in response to surface-disturbing projects. Intensity varies between inventories. Inventories may involve 2-7 individuals and trucks, and may last from one day to several weeks.

Cultural resource land management activities involve managing sites for scientific, public, and sociocultural use; developing interpretive sites; restricting certain land uses; closing certain areas to exploration; prohibiting some surface-disturbing activities; preparing interpretive materials; and allowing the collection of certain invertebrate fossils. The cultural resource program may propose installation of protective fencing of trail segments, stabilize deteriorating buildings, acquire access to sites when necessary, perform certain surface-disturbing activities, pursue land withdrawals, pursue cooperative agreements, Replace with: protect sites with avoidance stipulations or conditions of approval, 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. Surface-disturbing activities are 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 and 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.

## **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 activities are prescribed burning and wildfire suppression.

Prescribed fire objectives are to restore natural fire regimes and enhance rangeland habitats for livestock and wildlife. The prescribe fire program writes fire plans for prescribed burns and vegetative treatments and coordinates with interested publics. 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/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 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.

## **Geology and Minerals Resource 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 that 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, re-contouring, 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 stock piling of these materials. Once an area is mined out, reclamation begins and includes re-contouring as closely to the original landscape as possible the reconstruction of drainages, reseeding and monitoring to assure the habitat is useable and 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 with by the long 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, are

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 into 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 the geophones and, drill the shot holes for shot charges, or the as “thumpers” use of vibroseis trucks (weighing 50-64,000 lbs.) to create the 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 coalbed 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 into wells, 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 re-injected.

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 re-contouring 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.

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. Other 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 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. Generally, there are an average of 3 acres for each drill site, 1 mile of road and 1 mile of pipeline for each drill site. This can vary widely with each project. Directional drilling requires a bigger pad than one well. Size is dependent on the number of wells drilled from each pad.

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 re-injected. Roads may be two track unimproved roads to crown and ditched roads designed by an engineer. One day to over a month may be required to drill the well depending on the type of well (vertical or directional), depth and types of rocks encountered. Reclamation involves reseeding and the re-contouring of unneeded roads and unneeded portions of the well pads.

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 lands. 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 estates 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. They are nondiscretionary because they lack a Federal nexus, and thus do not meet the ESA criteria for an action that is authorized, funded, or carried out by a Federal agency on Homestead Act (HA) lands that were patented under the provisions of the SRHA, as amended.

## 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 removals 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.

## **Hazardous Materials Management Actions**

The primary objective of hazardous materials management is to protect public and environmental health and safety on public lands administered by BLM. Hazardous materials management also seeks to comply with federal and state laws, prevent waste contamination due to any 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. The clean-up of hazardous sites generally requires the use of heavy equipment, transport trucks, other vehicles and human presence. 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.

## **Lands and Realty Management Actions**

The objective of the lands and realty management program is 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 access to serve administrative and public needs.

Public land tracts 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 from mineral entry 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 thoroughly minimized 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 and considers and processes proposed withdrawals and temporary use permits. Unauthorized uses are investigated, documented, and steps are taken to resolve the trespass.

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, public recreation facilities, and other uses is allowed under the R&PP Act.

## 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, timber sale areas being re-harvested, crucial wildlife or endangered species habitat, areas managed for prescribed fire, developed recreation sites, or education areas. Vegetation manipulation to change composition or productivity (including noxious weed control) may be accomplished by the range program by using prescribed fire, mechanical, chemical or biological treatments. 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 access authorization. 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, 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, 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.

## **Off-Highway Vehicle (OHV) 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, USDA FS, WY DG&FD, 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 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. Additional restrictions with seasonal closures or restrictions to type of vehicle can also be imposed. Some areas and roads are closed to all OHV use. Over snow vehicles can also be limited to their use by being designated to roads or travel routes or they may be allowed for cross country travel. 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. OHVs can be used off road 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.).

Until signing has occurred, OHV use in “limited” areas will only be permitted on existing roads and vehicle routes. Off-Highway Vehicle travel may be prohibited on wet soils and on slopes greater than 25% if damage to vegetation, soils, or water quality would result. Seasonal restrictions may be applied in crucial wildlife habitats as needed.

## **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 concentrated 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 case-by-case.

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.

## **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.

Categories of activities of the BLM for recreation management include 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.

## **Riparian Areas Management Actions**

The objectives for riparian areas management will be 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 Colorado River cutthroat trout habitat, including habitat for native cutthroat trout.

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.

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).

## **Sensitive Plants Management Decisions**

The objective for sensitive plants (those plant species designated as such by each respective BLM State Director – see BLM Manual 6840 – Special Status Species Management) 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 FO, protection measures will be developed in consultation with the U.S. Fish and Wildlife Service.

The known populations of sensitive plant species will be protected from disturbance by maintaining or establishing fencing around the populations and/or by thoroughly managing surface-disturbing activities within sensitive plant habitat and in adjacent areas that could affect the populations. Sensitive plant species management may require short-term disturbances from construction activities such as fencing, inventory or monitoring of sensitive plants and their habitats. Case-by-case examination of any proposed surface-disturbing activity will be made to determine potential adverse effects and appropriate impact

minimization measures to reduce those effects. Developments, uses, and facilities will be managed temporally and spatially to avoid damage to the sensitive plant species. Sensitive species is beneficial to plant species and usually wildlife.

While Federally listed plant species do not fall under the sensitive designation, protective measures will be developed for their habitats or sites within a FO in consultation with the USFWS.

## **Soil Management Actions**

The objective for soil resources management is to maintain soil cover and productivity and provide for improvement in 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 (1 ½” 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 conducted. 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% or less to protect the water quality and to keep soil from eroding. OHV travel will be prohibited on wet soils and on slopes greater than 25% 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 of susceptible to severe erosion between March 1 and June 15.

## **Surface Disturbance Restriction Decisions**

The 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.

## **Threatened, Endangered, and Candidate Species Protection 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).

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.

## **Vegetation Resource 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 or goats 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. These control methods may be using primarily chemical, or mechanical, or prescribed fire. Prescribed fire is used as a management tool to improve range forage production, wildlife habitat, timber stand improvement, 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 should 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 postponed or 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.

## **Visual Resources Management Actions**

Visual resource management 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 visual resources management 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 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, reclaims watershed projects and water wells, regulates discharge of produced water, and restricts activities that might degrade visual resources.

No activity or occupancy is allowed within 200 feet of the edge of state and federal 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.

## **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 (re-contouring 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 Coalbed 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.

## **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 is are to maintain or enhance their outstandingly remarkable values and wild and scenic rivers (WSR) classifications until Congress considers them for possible designation. Wild and Scenic Rivers 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.

Five river segments that were eligible and determined to be suitable for WSR classification fall with in LAUs and are listed in the respective RMP section of this document. The designation of WSR status is simply a designation, and tempers or stipulates from a WSR resource viewpoint, specific protections or management of other BLM authorized actions. WSR classifications, in and of themselves, do not place on-the-ground projects or ground disturbing activities. Generally, WSR status is a beneficial impact on wildlife and plant species.

## **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 the land use plan in effect for the area. 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 Federal Land Policy Management Act (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 the FLPMA.

A Plan of Operation is prepared by operators before any mining exploration begins. 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. National Environmental Policy Act (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. The use of categorical exclusion to eliminate this analytical process for uses and facilities on lands under wilderness review is 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.

## **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. No LAUs are located within any wild horse herd management areas in Wyoming. 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.

## **Wildlife Habitat Management Actions**

The objectives of wildlife habitat management are to maintain the biological diversity of plant and animal species; support the strategic plan population objective levels of the Wyoming Game & Fish Department (WGFD) 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 Endangered Species

Act (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% of wildlife program activities are in support of other resource programs such as fuels reductions, density of timber stands in deer and elk winter habitats, oil and gas exploration, timber harvest, or prescribed fires. Specific management goals and actions are for 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 productions and quality of rangelands, fisheries, and wildlife habitat, and provides habitat 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 in introducing or reintroducing 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 U.S. Fish and Wildlife Service and the WGFD in evaluating and designating 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 enclosure 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, Release 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.

## 4.0 ANALYSIS OF THE GREAT DIVIDE RMP

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### INTRODUCTION

The *Record of Decision and Approved Resource Management Plan for the Great Divide Resource Area* was signed in November 1990 (BLM 1990). The Great Divide RMP provides the management direction for 4 million acres of public land surface and 5 million acres of Federal mineral estate administered by the BLM in the Rawlins FO (BLM 1990). The Rawlins FO covers portions of Laramie, Albany, Carbon, and Sweetwater Counties in south-central Wyoming. Approximately 12.5 million acres are within the administrative boundary of the Rawlins FO, although only 5 million acres are under BLM management. The remaining 7.5 million acres of surface lands, with subsurface rights administered by BLM, are not covered by the Great Divide RMP. On approximately 1 million of these 7.5 million acres, the Federal mineral estate is administered by the BLM, while the surface acres are administered by other agencies, primarily the U.S. Forest Service. The Great Divide RMP does not address these areas because the plans proposed by the Forest Service and other agencies provide the basis for BLM's administration of subsurface resources. The remaining 6.5 million acres of surface and mineral estate are owned privately or by the State of Wyoming (BLM 1990).

The Great Divide RMP describes each management action applied within the Rawlins FO. The following text briefly summarizes the activities and any specific impact minimization measures associated with each management action. The *Wyoming BLM Mitigation Guidelines for Surface Disturbing and Disruptive Activities* will be applied to all surface-disturbing or disruptive activities. These guidelines include timing limitations and restrictions on surface occupancy that will minimize potential effects to blowout penstemon plants and their habitats. Refer to the Great Divide RMP for a complete description of each action. The following management actions are included:

- Areas of Critical Environmental Concern
- Cultural Resources
- Paleontological Resources
- Fire Management
- Forest Management
- Lands Program Management
- Livestock Grazing Management
- Minerals Management
- Recreation Management
- Sensitive Plants Management
- Soil, Water, and Air Management
- Visual Resource Management
- Wild Horse Management
- Wildlife Habitat and Fisheries Management

## ENVIRONMENTAL BASELINE

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

This section presents a summary of the known habitats for the blowout penstemon in the Rawlins FO area and an analysis of the effects of past and ongoing human activities (including Federal, state, tribal, local, and private) that may have influenced the blowout penstemon and its habitat.

Three populations of the blowout penstemon are known to occur within the Rawlins FO, in Carbon County (Fertig 2001a) (**Map 1**). These populations are located in steep, sparsely vegetated sand dunes on the lee side of active blowouts, and at the base of mountains. The three occurrences are located on BLM and state surface lands within Carbon County of the Rawlins FO (**Map 1**).

Until 1996, the blowout penstemon was not known to occur in Wyoming. It was discovered in Wyoming by Frank Blomquist in 1996, but was not confirmed until 1999 (Fertig 2001a). Previously, it was thought to be endemic only to Nebraska. Therefore, the Great Divide RMP (BLM 1990) contains no specific measures intended to protect the blowout penstemon. However, the *Wyoming BLM Standard Mitigation Guidelines for Surface Disturbing Activities*, Appendix I (2)(d), 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 (BLM 1990).

## ANALYSIS OF PROPOSED MANAGEMENT ACTIONS AND EFFECTS

The proposed actions include management actions or prescriptions described in the Great Divide RMP. The Great Divide RMP represents a selection of management actions that attempt to resolve planning issues and provide for sustained multiple use of public lands and resources (BLM 1990). The following sections describe the management actions in the Great Divide RMP that may affect the blowout penstemon. Direct and indirect effects are presented after each management action. The Great Divide RMP provides a complete description of each management prescription (BLM 1990).

### Planning and Management for Areas of Critical Environmental Concern

#### Management Actions

Four Areas of Critical Environmental Concern (ACECs) are designated in the Rawlins FO, including Como Bluff, Sand Hills, Jep Canyon, and the Shamrock Hills Raptor Concentration Area. Each ACEC is managed to achieve goals and objectives specific to the area and to its special resource values. These ACECs are designated to protect unique resources such as cultural values (Como Bluff), unique vegetation and wildlife habitats (Sand Hills), big game crucial ranges, raptor nests (Shamrock Hills), and oil and gas exploration (Jep Canyon and Shamrock Hills).

Management actions for other programs in the ACECs will be guided by the general decisions found in the other sections of the RMP. Management actions for ACECs include appropriate application of the *Wyoming BLM Standard Mitigation Guidelines for Surface Disturbing Activities*. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

None of the known occurrences of blowout penstemon are located near ACECs (**Map 1**). Activities in each of the ACECs will be similar to those contemplated under the various other management actions in this RMP, 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 blowout penstemon, but they may indirectly benefit potential habitat by preventing some disturbances. The Rawlins FO is revising the Great Divide RMP (to be the Rawlins RMP) and is considering designating an ACEC to protect and enhance habitat for the blowout penstemon. If this new ACEC is designated, management would benefit the plant and effects would be beneficial as would the effects determination.

## Determination

Implementation of the ACEC management actions, as presented in the Great Divide RMP (BLM 1990), will have **no effect** on the blowout penstemon. This determination is based on the absence of occurrences and habitats of the blowout penstemon in the proposed ACEC management areas.

## Cultural Resources, Trails, and National Natural Landmarks Management

### Management Actions

The objectives of cultural resource management are as follows:

- Protect and preserve representative samples of the full array of cultural resources for the benefit of scientific and sociocultural use;
- Ensure that cultural resources receive full consideration in all land-use planning and management decisions;
- Manage cultural resources so that scientific and sociocultural values are not diminished, but rather are maintained or enhanced;
- Ensure that BLM's undertakings avoid inadvertent damage to both Federal and non-Federal cultural resources;
- Stabilize and protect significant sites and segments along the Overland Trail, the Cherokee Trail, and the Rawlins-Fort Washakie Trail; and
- Maintain the integrity of existing and proposed National Natural Landmarks (NNLs).

The BLM will conduct Class I, II, or III inventories for actions involving BLM-administered public land and Federal minerals that may cause surface disturbance. The BLM will also consult with the Wyoming State Historic Preservation Office to evaluate the significance for eligibility of cultural resources identified during inventory for inclusion on the National Register of Historic Places.

The BLM will seek listing on the National Register of Historic Places for eligible sites along the Overland, Cherokee, and Rawlins-Fort Washakie Trails. The BLM will take appropriate actions (such as protective fencing of segments of the trails or stabilization of deteriorating buildings) to meet the objectives for significant trail segments. Where appropriate, the BLM will pursue acquisition of legal access to trail segments. The BLM will categorize cultural resources for management purposes (such as public use, scientific, and sociocultural). These actions will be carried out in accordance with law, policy, and guidance to meet the objectives for cultural resources management.

Lands in the proposed Gangplank NNL, Big Hollow NNL, and Sand Creek NNL will be considered for disposal to organizations or agencies that would manage these areas in accordance with their NNL status. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

None of the three known occurrences of blowout penstemon are located near the NNLs or historic trails. However, actions associated with cultural resource management may affect blowout penstemon or its potential habitats where management actions are implemented. These potential impacts depend on several factors, including the type of each field effort, the time of year, duration of field activities, use of heavy machinery versus hand tools, and the type of habitat affected. Surface disturbance associated with cultural resource investigations can vary in size and degree. Disturbance to blowout penstemon plants or habitats would likely occur only if large-scale excavation takes place or if management of historic trails attracts more people to known or potential habitats. In addition, inventories or studies will be completed in accordance with BLM and USFWS guidelines to verify the presence or absence of threatened or endangered species such as the blowout penstemon before any ground disturbance. In the event that an occurrence of the blowout penstemon is identified, surface disturbance will be modified to ensure that this species and its habitat are protected.

## Determination

Implementation of cultural resource management actions, as presented in the Great Divide RMP (BLM 1990), may affect, but is **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on absence of blowout penstemon plants near the NNLs and historic trails, the low likelihood that management actions would take place in potential habitats, and the identification of the presence or absence of the blowout penstemon plant if surface-disturbing activities are planned to occur in suitable habitat.

## Paleontological Resource Management

### Management Actions

The objective of paleontological resource management is to maintain the integrity of the scientific value of paleontological resources. Inventories will be conducted on a case-by-case basis for each proposed surface disturbance to ensure maintenance or integrity of paleontological values. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

### Effects Analysis

Paleontological resource management is unlikely to affect the blowout penstemon or its potential habitats where management actions are implemented. Potential impacts depend on several factors, including the type of each field effort, the time of year, the duration of field activities, use of heavy machinery versus hand tools, and the type of habitat affected. Surface disturbance associated with paleontological investigations may result in disturbance to blowout penstemon plants or habitats if large-scale excavations take place in areas of known occurrence or potential habitat. Inventories or studies will be completed in accordance with BLM and USFWS guidelines to verify the presence or absence of threatened or endangered species such as the blowout penstemon before any ground disturbance. In the event that an occurrence of the blowout penstemon is identified, surface disturbance would be modified to ensure that this species and its habitat are protected.

## Determination

Implementation of paleontological resource management actions, as presented in the Great Divide RMP (BLM 1990), may affect, but is **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the low likelihood that paleontological management actions would take place in habitat for the blowout penstemon and the identification of the presence or absence of the blowout penstemon if surface-disturbing activities were planned to occur in suitable habitat.

## Fire Management

### Management Actions

The objectives of fire management are to concentrate fire suppression efforts in areas containing high resource or human values, and in areas with intermingled land ownership patterns. In addition, fire management uses prescribed fire to help meet the objectives of other programs (such as reduction of fuels, or maintenance or improvement of wildlife habitat or range condition). Approximately 60 percent of the FO is designated as a full suppression area where there are no equipment restrictions. Approximately 3 percent of the FO is designated as a full fire suppression area “with management options.” Restrictions may be imposed on the use of standard full suppression firefighting techniques in these areas. Approximately 36 percent of the FO is designated as a limited fire suppression area.

The remaining 1 percent of the FO is proposed for a limited suppression classification; the classification would be assigned after consultation and agreement with landowners in the area. If all parties concerned cannot agree to allow limited suppression of wildfires, the area will be managed under a full suppression classification.

A fire management plan will be prepared, specifying criteria for protecting high-value resources such as significant cultural resources, crucial winter range for big game, high-priority watersheds, and high-value scenic areas. The fire management plan will include operational aspects of implementing limited suppression designations. An escaped fire analysis will be conducted to determine the appropriate course of action if fires cannot be contained within the first burning period, or if they exceed the criteria established for limited suppression. Prescribed burning will be used to achieve management objectives such as those for allotment management plans (AMPs) and habitat management plans (HMPs). Proposals for prescribed fire will be considered case-by-case to ensure environmental integrity and consistency with multiple resource objectives and activity plans. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

### Effects Analysis

Wildland fires are not expected to directly impact the blowout penstemon because the blowout penstemon typically occurs in steep, sparsely vegetated sand dunes. Furthermore, a natural disturbance process such as fire is thought to enhance the blowout penstemon habitat by removing sand-stabilizing vegetation. Implementing fire control policies has reduced the incidents of wind erosion, resulting in a loss of blowout penstemon habitat (Fertig 2001b). Fire management actions, particularly those associated with prescribed fire, have the potential to improve blowout penstemon habitats. However, the area of known blowout penstemon occurrences is in a full fire suppression zone. As a result of fire suppression, blowout penstemon habitats may be altered from the equipment and resources used to fight fire. Individual blowout penstemon plants may be damaged or killed, and habitats may be disturbed or altered as a result of fire suppression.

## Determination

Implementation of fire management actions, as presented in the Great Divide RMP (BLM 1990), may affect, but is **not likely to adversely affect** the blowout penstemon due to **discountable effects**. This determination is based on the low potential for fires to occur in habitat for the blowout penstemon and the low probability that fire equipment would, or is even feasibly possible to be used in an area that contains blowout penstemon plants. In the rare event of a wildfire and immediate suppression is required in occupied blowout penstemon habitat, 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 blowout penstemon habitat is affected/impacted.

## Forest Management

### Management Actions

The objective of forest management is to enhance the health, productivity, and diversity of the forestlands. The allowable harvest level specified in the RMP is 20 million board feet (MMBF) per decade. Harvest will occur on commercial forestlands in the FO designated for intensive or restricted management of forest products (about 25,900 acres or 23 percent of the total forestland in the Rawlins FO). The following are the types of actions proposed to meet the forest management objectives on these lands.

About 19,200 acres will be intensively managed for forest products. These lands will be managed to achieve a highly productive forest by implementing activities for enhancing tree growth and health. Multiple-use values will be fully considered. Timber sales will be concentrated in these areas.

About 6,700 acres will be managed restrictively for forest products. Included in this category are areas such as steep slopes and riparian areas surrounded by buffer zones.

Forest management practices, such as timber harvesting, regeneration of disturbed sites, stand replacement, and pre-commercial thinning, will be carried out to meet the forest management objectives. Stands of unmerchantable, nonproductive lodgepole pine will be replaced with young, vigorous trees. Minor wood products such as fuel wood, posts and poles, Christmas trees, and wildings will be available on demand.

The BLM will pursue acquisition or maintenance of legal access to certain areas of public land to support intensive management of commercial forestland. Consolidation of land ownership on Elk Mountain and Shirley Mountain will be considered as opportunities arise. About 85,200 acres of other forestlands will be managed only to enhance other uses. Aspen, juniper, and other noncommercial tree species are included in this category. About 300 acres are not available for management of forest products because the timber is not harvestable, the stands are too small, their locations are scattered, or the terrain does not allow appropriate access. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

### Effects Analysis

Forest management actions will occur in upland coniferous forests. Conversely, the blowout penstemon is associated with steep, sparsely vegetated sand dunes. These habitats are distinct from the coniferous habitats that are subject to forest management. Therefore, blowout penstemon plants and their habitats are not expected to be affected as a result of forest management.

## Determination

Implementation of forest management actions, as presented in the Great Divide RMP (BLM 1990), will have **no effect** on the blowout penstemon. This determination is based on the absence of forest management areas within or near habitat for the blowout penstemon.

## Lands Program Management

### Management Actions

The objectives of lands program management are to support the goals and objectives of other resource programs for managing the BLM-administered public lands and to respond to public demand for land use authorizations.

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 in placement and routing of new facilities. Effects will be thoroughly minimized if it becomes necessary for facilities to be placed within avoidance areas.

Communication site plans will be developed for new and existing sites. New sites may be established, with appropriate analysis, on a case-by-case basis. Site categories will be established for all communication sites according to the following criteria: High-power communication sites will be reserved for broadcast television and radio transmitters of 100 watts or more. Low-power communication sites will be reserved for microwave, mobile telephone and radio, and other transmitters that use fewer than 100 watts. A 2-mile buffer will be maintained around all communication sites to ensure their integrity.

About 66,000 acres are available for consideration of disposal under the criteria set forth in the Federal Land Policy and Management Act (FLPMA). These lands may be disposed by any appropriate means permitted under the land laws, including desert land patent, exchange, sale, and recreation and public purpose (R&PP) patent. These lands were identified during the planning effort for the Great Divide RMP as meeting the FLPMA criteria for disposal. However, the inventory of public lands meeting the FLPMA disposal criteria was not completed for the entire FO. Therefore, no land disposal decisions have been made in the RMP. In addition, proposals for disposal of lands that have not met the FLPMA criteria will be considered if they are consistent with the objectives of the RMP.

Before any disposal action can be taken, BLM will consider each individual tract and will include public involvement. The preferred method of disposal or acquisition of lands by BLM will be through exchange.

Lands withdrawn in the FO, under section 204(1) of FLPMA, will be evaluated to determine whether existing withdrawals are serving their intended purposes. These reviews are not associated with development of the RMP. Thus, there are no decisions regarding the termination of any withdrawals in this RMP. The existing withdrawals in the FO will remain unless it is determined that they should be terminated and, if necessary, a plan amendment to the Great Divide RMP is written. This determination or amendment will be based on a full examination of issues associated with withdrawal terminations. These issues may include the land use, environmental, and other factors associated with opening public lands to access under the public land laws or to mineral location under the mining laws. The BLM will initiate new withdrawals, which would include recreation sites (650 acres); historic sites (1,320 acres); and a rare plant population (10 acres). No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

There are utility or transportation systems avoidance areas within or near known populations of blowout penstemon. In addition, high- or low-power communications sites are not planned near the known populations of blowout penstemon. It is not likely that new utility systems would be sited in potential habitats because areas with important resource values and steep slopes will be avoided and the steep sand dunes are not conducive for roads, powerline or pipeline, etc. placement. Furthermore, the known populations of the blowout penstemon do not occur near lands considered for disposal. Lands identified as potential or occupied habitats for the blowout penstemon would not likely be available for disposal. Lands and realty management actions are not expected to negatively impact blowout penstemon plants or habitats. Lands not under BLM jurisdiction that are potential habitats for blowout penstemon may be targeted for acquisition and subsequent management by BLM. Such acquisitions would benefit habitats for the blowout penstemon that would otherwise be vulnerable.

## Determination

Activities associated with land resource management, as presented in the Great Divide RMP (BLM 1990), may affect, but are **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the low likelihood that land resource management actions would take place in known populations of the blowout penstemon. Land acquisition and withdrawal actions may have secondary **beneficial effects** to the blowout penstemon by maintaining or acquiring potential habitats, although none are planned under the Great Divide RMP (BLM 1990)..

## Livestock Grazing Management

### Management Actions

The objective of livestock grazing management in the Rawlins FO is to enhance livestock grazing while maintaining a balance among economic uses and enhancement of wildlife habitat, watershed, and riparian areas, while maintaining or improving range conditions over the long term. Livestock grazing will also be managed to protect or enhance other resource values.

Three separate grazing environmental impact statements (EISs) cover the Rawlins FO. Two of these EISs (the Divide Grazing and the Seven Lakes Grazing EISs) were completed before BLM developed the Great Divide RMP. The livestock grazing management decisions for the Divide Grazing and the Seven Lakes Grazing EIS areas will continue in effect as outlined in the Divide and Seven Lakes Rangeland Program Summaries (RPS). These two RPSs are incorporated into the Great Divide RMP by reference. The RPS for the Medicine Bow Grazing EIS area will be developed in the near future. In conjunction with the RPS, a single set of priorities encompassing all three grazing EIS areas, will be developed to coordinate the entire rangeland management program for the Rawlins FO. The total authorized livestock grazing use will not exceed the recognized active preference in the FO. Currently, this preference represents a maximum of 480,754 Animal Unit Months (AUMs) of annual forage (161,340 AUMs are in the Medicine Bow Grazing EIS area; 262,101 are in the Divide Grazing EIS area; and 57,313 are in the Seven Lakes Grazing EIS area).

The current amounts, types, and seasons of livestock grazing will be authorized until monitoring indicates that an adjustment is necessary, or that a class of livestock or seasonal use modification can be accommodated. Requests for changes in seasons of use or type of livestock will be considered on a case-by-case basis. Requests for conversions from sheep to cattle will be considered along with management actions to maintain or improve riparian conditions. Any adjustments in livestock grazing will be consistent with current policies and procedures. These adjustments will result from inventories,

monitoring studies, and consultation, coordination, or negotiation with grazing permittees. Adjustments may also result from decisions to change the allocation of land uses, or from transfers of BLM-administered public lands to other agency jurisdictions or into non-Federal ownership. Furthermore, the Rawlins rangeland monitoring plan will be reviewed and updated annually. This monitoring plan, which details the type and purpose of monitoring at the allotment level, is on file in the Rawlins administrative office.

Grazing systems will be designed to achieve the livestock-grazing objective. Existing AMPs will be maintained and updated as necessary. In addition, new AMPs will be developed for selected grazing allotments as funding allows. “I” allotments have first priority. Existing types and levels of grazing use will be continued in “M” allotments. Proposals to change existing use may also require changes in the allotment categorization, and level of management attention and monitoring. Range improvements may be maintained or developed to enhance multiple-use values. Private investment will be encouraged and authorized when consistent with the multiple-use objectives for the allotment. Grazing use in “C” allotments will continue at present levels. Proposals for changes in use will be reviewed and allowed if they do not conflict with other values. Private investment in range improvements will be allowed when it does not conflict with multiple use of the public land.

Within the Medicine Bow EIS area, livestock grazing will be excluded from the Pennock Mountain Wildlife Habitat Area (6,285 acres), the Wick Wildlife Habitat Area (320 acres), the Laramie Peak Wildlife Habitat Area (2,858 acres), and the Sybille Wildlife Research Unit (680 acres). A grazing agreement has been negotiated in the Split Rock/Duck Creek Agreement Area (1,760 acres) accommodating the bighorn sheep that use the area for lambing. A projected 1,725 acres of riparian habitat will be developed for grazing treatments. Special riparian needs will be the primary consideration in the location and design of range improvements and grazing systems in these areas. If necessary, livestock will be excluded from riparian areas until they improve sufficiently to support limited seasonal grazing. Furthermore, special attention will be given to maintaining wildlife habitat on 13,140 acres containing crucial winter range for big game and other important habitat. These areas will also receive special attention for developing and implementing AMPs and other activity plans. No specific requirements or guidelines applicable to minimize impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

Livestock grazing or associated activities may affect blowout penstemon or its habitat. The three known blowout penstemon populations occur within the Divide Grazing EIS Area. Improvements to grazing allotments intended to increase available forage, including use of heavy equipment and alteration of existing vegetation composition, may detrimentally impact blowout penstemon habitats, especially if improvements occurred near or within known blowout penstemon populations. Fencing, changes in livestock seasons of use or type of livestock, and livestock improvement projects may affect the blowout penstemon by crushing or removal of individual plants. Blowout penstemon is edible to cattle and horses, but is not preferred forage if other vegetation is available. However, livestock grazing, although unlikely to occur in the sparsely vegetated, shifting sand and steep slopes of blowout penstemon habitat, does occur to a small extent. Wildlife is the primary herbivore, eating the upper stems and flowers. Livestock trampling damage is typically not significant because of the plant’s sparse distribution and shifting substrate, although livestock may step on and crush a few individual plants or consume them along with other more preferred plant species. Though individual plants may be damaged, and the fitness of the plants may be affected for the season, the plants usually recover and the overall population is minimally affected. Livestock passing through blowout penstemon habitat may also spread the seeds of invasive species through excrement. Infrequent grazing in blowout penstemon habitats may be beneficial to the plants because it reduces competing vegetation (Fertig 2001b), although individual blowout penstemon

plants will also be grazed. Livestock grazing is not excluded from blowout penstemon habitat though fencing or other actions, so livestock are able to access the blowout penstemon plants. Fencing of blowout penstemon habitat is very difficult due to the movement of the sand dunes that comprise the plant's habitat, the impracticality of trying to build fences on a sand substrate, and the difficulty of maintaining fences as blowing sands cover them, making them inoperable and blowing over the fences and pulling off wires. Fencing of blowout penstemon habitat is thus an impracticable task. BLM intends to continue grazing activities along with surveying for the blowout penstemon.

## Determination

Activities associated with livestock grazing management, as presented in the Great Divide RMP (BLM 1990), are **likely to adversely affect** the blowout penstemon. This determination is based on the likelihood, even though infrequent, that livestock grazing management actions would take place in known populations of the blowout penstemon and individual plants will be harmed or destroyed by incidental grazing or trampling by livestock. Infrequent grazing in blowout penstemon habitats may have beneficial effects by reducing competing vegetation, but individuals can be harmed or destroyed.

## Minerals Management

### Management Actions

The management objective for coal resources is to provide for short- and long-range development of Federal coal in an orderly and timely manner, consistent with the policies of the Federal coal management program, environmental integrity, national energy needs, and related demands. The objective is also intended to protect important resources by specifying whether Federal coal can be leased for surface, subsurface, or in situ mining methods; and to allow analysis of alternative areas for consideration of future leasing. A north-to-south coal development sequence will be followed in the entire area west of Rawlins and south of Interstate 80 as needs are identified. The BLM will process all applications for leasing in areas designated acceptable for further consideration for coal leasing. For each application, BLM will conduct a site-specific environmental analysis and will consider the development sequence described above and other environmental and socioeconomic factors.

The management objective for oil and gas is to provide opportunity for leasing, exploration, and development while protecting other resource values. The entire FO is open to oil and gas leasing. Leases will be issued with the restrictions needed to protect resources. Surface disturbance will be restricted and rigorously managed to maintain important resource values in the ACECs, the Baggs Elk Crucial Winter Range, and in overlapping crucial winter ranges for the various big game species. All lands open to oil and gas leasing will also open to geophysical exploration. The restrictions or requirements may be included in approving subsequent exploration and development in cases where Federal oil and gas leases are issued (1) without stipulated restrictions or requirements later found to be necessary; or (2) with stipulated restrictions or requirements later found to be insufficient. These restrictions or requirements may be included only as reasonable measures or as conditions of approval (COA) in authorizing applications for permit to drill (APD), sundry notices, or plans of development (POD). Conversely, in cases where leases are issued with stipulated restrictions or requirements later found excessive or unnecessary, they may be modified, excepted, or waived when authorizing APDs, sundry notices, or PODs.

The management objective for other leasable minerals is to provide opportunity for leasing, exploration, and development of oil shale, geothermal resources, and non-energy leasable minerals while protecting other resource values. The entire FO is open to leasing of oil shale, geothermal resources, and non-energy leasable minerals. Lease applications will be considered on a case-by-case basis. Stipulations to protect

important surface values will be based on interdisciplinary review of individual proposals and environmental analysis.

The management objective for locatable minerals is to provide opportunity for location of mining claims and mineral development while prohibiting these types of activities on lands that are not compatible. The entire FO is open to location of mining claims and mineral development, except for areas that are closed or are to be closed and withdrawn from mineral location.

The management objective for salable minerals is to provide availability of mineral materials in convenient locations while protecting surface resources. The FO is open to the sale of mineral materials. Sales will be considered on a case-by-case basis. Stipulations to protect important resource values will be based on interdisciplinary review and analysis of individual proposals.

No specific requirements or guidelines applicable for minimize impacts to the blowout penstemon are included for these activities in the RMP.

## Effects Analysis

Direct effects to the blowout penstemon will be minimized through the no surface occupancy (NSO) restriction for threatened and endangered species applied to energy and mineral development. Coordination and consultation with USFWS would occur for any proposed drilling, sundry activity, or mining for leasable minerals. Conditions of Approval or stipulations can be applied to the permits and leases that control activities such as the time of year that the disturbance takes place. The purpose for doing this is so that growing and flowering periods are avoided, dust abatement and weed control measures can be specified, and erosion can be minimized. Both BLM and USFWS would be involved in project design to control the location of roads, pipelines, and other sundries necessary for exploration or development.

Although current exploratory wells for oil and gas pose no direct threat to the blowout penstemon, the discovery of new oil or gas reserves could impact the population. Potential oil and gas development in areas near known populations of blowout penstemon would increase use of vehicles and improve access to the surrounding areas. These activities might negatively affect the species by displacing wildlife and livestock from disturbed habitats to sites that contain blowout penstemon plants. These displaced animals could 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 accelerated dust and exhaust emissions from vehicles. Blowout penstemon habitat could be altered to an unsuitable state for occupancy by mineral development activities; this is extremely unlikely, due to the relatively small acreage of common site usage and conflict.

## Determination

Implementation of mineral management actions, as presented in the Great Divide RMP (BLM 1990), may affect, but are **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on prohibitions currently in place including restricting all vehicle use to existing roads and trails and prohibiting surface disturbing activities in blowout penstemon habitat, conservation measures in place to protect the plant and its habitat, and the fact that energy and mineral development is not occurring in or adjacent to blowout penstemon habitat.

## Recreation Management

### Management Actions

The objectives of recreation management are to ensure the continued availability of outdoor recreational opportunities, to meet legal requirements for the health and safety of visitors, and to minimize conflicts with other resource values.

Activity plans for the Nine Mile Hill and Big Creek sites will be revised before they are implemented. Maintenance of existing developed and undeveloped recreation sites will be continued. Existing activity plans for the Nine Mile Hill and Big Creek sites will be revised before they are implemented. Development of new recreation sites will be prioritized as follows: (1) a boat launch and a picnic area at Prospect Creek, (2) a recreation site at Jelm Mountain, and (3) a recreation site in the Shirley Mountains. Additional sites will be considered for development as opportunities arise.

The Continental Divide National Scenic Trail Special Recreation Management Area (SRMA) covers 80 miles of trail through BLM-administered public land. The area will be managed to provide opportunities for trail users to view the diverse topographic, geologic, vegetative, and scenic phenomena and wildlife that characterize the Continental Divide and to observe examples of human use of the natural resources. The exact trail route will be identified through activity planning, which will also determine where easements or rights-of-way will be needed on private or state-owned land.

The North Platte River SRMA covers 3,550 acres, and will be managed to provide high-quality recreation, especially for boating, fishing, camping, and sightseeing. Management will also be aimed at providing public facilities and continued access. Surface disturbance within 1/4 mile on either side of the river will be restricted to maintain the quality of the visual resources. An activity plan has been written for a portion of this area. That plan will be revised to include the entire SRMA.

The Shirley Mountains SRMA covers 24,800 acres and will be managed to protect the cave system while other resource uses will be allowed above ground. Specific guidelines for recreation management and surface use will be developed during activity planning.

An ORV implementation plan will be prepared for the FO. More details on off-road vehicle use and management will be developed in this implementation plan. ORV designation areas are identified throughout the FO. With some exceptions, the FO is open to use of motorized over-the-snow vehicles, provided they do not adversely affect wildlife or vegetation. With some exceptions, all other motorized vehicle use in the FO is limited to existing roads and trails.

Because of the mixed land ownership pattern and multiple resource concerns, completion of an effective ORV implementation plan for the Dune Ponds area depends entirely on close coordination with owners of adjacent private property, the Wyoming State Land Board, the Wyoming Game and Fish Department (WGFD), and other interested parties. The plan will also be closely coordinated with the wildlife, soils, and livestock grazing programs to ensure multiple resource concerns are addressed.

The BLM will coordinate and cooperate with owners of adjacent properties, interested individuals, organizations, and agencies when preparing plans to implement ORV designations. Plans for rehabilitation or impact minimization of ORV use will be developed and implemented for specific problem areas within the Sand Hills area and the Dune Ponds Cooperative Management Area.

Consistent with the Wyoming BLM access policy, the BLM will pursue acquisition of legal access to certain areas to ensure continued availability of outdoor recreation. Consolidation of land ownership will be pursued in the following areas to increase recreational opportunities for the public. Areas of high priority include: Bennett Peak, Dugway, Miracle Mile, and North Platte River area. Areas of moderate priority include: Dune Ponds, Elk Mountain, and Shirley Mountains caves. Areas of low priority include: Bennett Mountains, Encampment River Canyon, and Ferris Mountains. The preferred method of consolidation is through exchange.

No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

The known blowout penstemon populations occur near designated ORV areas. The present ORV designations allowed in the Great Divide RMP (1990) limit ORV travel to open sand areas in the Dune Ponds Cooperative Management Area (CMA) (3,240 acres) west of Carbon County Road 351 (in sections of the southern portion of T25N R86W) and limits ORV travel to existing roads and trails elsewhere. No blowout penstemon populations have been found in the Dune Ponds CMA area open to ORV use, nor have any plants been found growing in or along any roads or trails. Actions associated with recreation management have the potential to detrimentally impact blowout penstemon and its habitat. Hill climbing and associated ORV activities may benefit blowout penstemon habitat by ensuring continued disturbance and erosion. However, driving directly over plants may cause a severe negative impact to populations (USFWS 1992). An additional indirect effect of this action may be the introduction of non-native plants into the area if recreational hikers or ORV users carry seeds in unintentionally.

## Determination

Implementation of recreation resource management actions, as presented in the Great Divide RMP (1990), may affect, but are **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the very limited potential for recreation and ORV use to result in direct or indirect disturbance of blowout penstemon and its habitat. While no blowout penstemon plants have been recorded in the Dune Ponds CMA, it is within 2 miles of the known populations of blowout penstemon. It is a remote possibility, although not currently authorized, that ORV users may stray out of the Dune Ponds CMA area open to ORV travel on open sand dunes and impact the known populations of blowout penstemon.

## Sensitive Plants Management

### Management Actions

The objective of sensitive plants management is to maintain or enhance the population of two plant species and one community within the Rawlins FO. The plants are Gibben's beardtongue (*Penstemon gibbensii*) and the persistent sepal yellowcress (*Rorippa calycina*); the community is the Muddy Gap cushion plant community. Management at these locations will be restrictive in an effort to protect these areas from surface disturbance. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

Actions associated with the management of persistent sepal yellowcress and Muddy Gap cushion plant community would not likely influence blowout penstemon plants or habitats. These sensitive plant

resources do not occur in habitats similar to the blowout penstemon; however, Gibbon's beardtongue (*Penstemon gibbensii*) occurs in sparsely vegetated shale or sandy-clay slopes (Fertig 2000). Management of this species may have beneficial effects to the blowout penstemon by protecting potential or occupied habitats.

## Determination

Implementation of sensitive plants management actions, as presented in the Great Divide RMP (BLM 1990), may affect, but is **not likely to adversely affect** to the blowout penstemon, due to **beneficial effects**. This determination is based on the similar habitat occupied by the Gibbon's beardtongue. Protection provided to this habitat would also benefit blowout penstemon plants and their habitat.

## Soil, Water, and Air Management

### Management Actions

The objectives of soil, water, and air management are to:

- Prevent deterioration of air quality beyond applicable local, state, or Federal standards and enhance air resources where practical.
- Prevent impairment of important scenic values caused by declining air quality.
- Maintain soil cover and productivity where adequate and increase soil cover and productivity where inadequate.
- Maintain riparian areas in good or excellent condition and improve riparian areas in fair to poor condition.
- Control flood and sediment damage from natural or human causes.
- Reduce salt loading in watersheds within the Colorado River Basin.
- Meet or exceed established standards for quality of surface water and groundwater where water and quality have been lowered by human causes.
- Provide physical and legal availability of water for use by the public and by Federal, state, and local agencies.

The BLM will implement rigorous land-use practices to mitigate salt and sediment loading caused by surface disturbance. These practices will be carried out in the following areas, by priority: (1) Muddy Creek, (2) Sage Creek, (3) Second and Third Sand Creeks, and (4) the Little Snake River Basin (excluding the Muddy Creek watershed). Watershed or other activity plans will address site-specific problems and will include monitoring for salt and sediment loading. In other areas, the BLM will carry out watershed management practices designed to meet objectives for the soils, water, and air resources. These practices will be included in activity plans such as AMPs and HMPs. Surface disturbance will be prohibited on unstable areas unless the instability can be alleviated. Specific unstable areas such as landslides, slumps, and areas exhibiting soil creep will be identified individually.

No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for these activities in the RMP.

## Effects Analysis

**Air Quality Management:** There are three known populations of blowout penstemon occurring within the Rawlins FO (**Map 1**). Currently there are no air quality monitoring stations within any blowout

penstemon habitat in the Rawlins FO. Placement of air monitoring stations would not be likely in blowout penstemon habitat as the nature of shifting sands would not provide for a stable foundation for such structures. Actions related to air quality management on other activities will not result in negative impacts to blowout penstemon or its potential habitat. These management actions will likely result in maintaining or improving air quality conditions throughout the FO, which may have secondary benefits to blowout penstemon.

**Soil Resources Management:** The implementation of soils management involves planning for actions that will alleviate soil erosion and modifying others to avoid soil erosion. There are no impacts from this management action on blowout penstemon habitat. However, activities associated with soil mapping/sampling may include surveying, core drilling, use of pick-up truck mounted soil augers and core samplers (1 ½” 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 conducted. 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. Other surface disturbing 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. These types of soil analysis are not generally conducted on the large sand dunes associated with blowout penstemon.

**Water Resources Management:** 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 (re-contouring 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.).

The above types of actions associated with watershed management actions are infrequent, small in scale, would take place very rarely, if at all within any blowout penstemon habitat and would likely have minimal or no negative impacts on blowout penstemon habitats. Overall, actions associated with watershed management are likely to improve habitat for the blowout penstemon.

## Determination

Management of soil, water, and air resources is not expected to detrimentally impact the blowout penstemon and its habitat. Resource management generally precludes surface disturbance in unstable areas such as blowout penstemon habitat. This may result in beneficial effects on blowout penstemon and its habitat. Actions associated with soil, water and air resource management, such as monitoring lakes for evidence of acid rain, monitoring streams for soil erosion or chemical pollutants, or measuring snow depth to determine precipitation amounts, conducting soil surveys, etc., are non-impacting or beneficial in protecting and maintaining blowout penstemon habitat.

**Air Quality Management:** Implementation of air quality management actions, as presented in the Great Divide RMP (BLM 1990), is **not likely to adversely affect** the blowout penstemon, due to **beneficial effects**. Air quality management efforts may result in positive effects to air quality that might be beneficial to blowout penstemon.

**Soils and Water Resources Management:** Implementation of soil, water, and air resource management actions, as presented in the Great Divide RMP (BLM 1990), may affect, but is **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the Conservation Measures in place that will preclude or minimize adverse effects to the blowout penstemon or its habitat. The activities associated with these management actions are infrequent, localized or small in scale, and generally not likely to occur in blowout penstemon habitat. Implementation of soil and water resource management actions may maintain or improve the condition of some habitats and therefore may result in secondary beneficial effects to maintain or improve blowout penstemon habitats.

## Visual Resource Management

### Management Actions

The objective of visual resource management (VRM) is to minimize adverse effects to visual resources while maintaining the effectiveness of land-use allocations. The FO will be managed according to VRM classes as:

- Class I - 33,165 acres;
- Class II - 160,640 acres;
- Class III – 3,582,195 acres; and
- Class IV – 224,000 acres

Most of the blowout penstemon habitat falls in Class II or III. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for these activities in the RMP.

## Effects Analysis

Actions associated with VRM will not directly impact the blowout penstemon or its habitat. The exclusion of some activities and structures from designated viewsheds may have a positive effect by limiting disturbance of potential habitats for blowout penstemon. Potentially, a request for movement of a structure or project due to VRM classification out of a higher classification area to a lesser classified area might move the project into blowout penstemon habitat. Impacts to the blowout penstemon by such moves would be precluded by the conservation measures. The exclusion of some activities and structures from designated view sheds may have a secondary positive effect of limiting disturbance of habitats that may be suitable for blowout penstemon.

## Determination

Implementation of VRM actions, as presented in the Great Divide RMP (BLM 1990), may affect, but is **not likely to adversely affect** the blowout penstemon, due to **beneficial effects**. This determination is based on the potential that these actions involve no anticipated disturbance to blowout penstemon habitat and may possibly preserve or minimize disturbance to blowout penstemon habitat

## Wild Horse Management

### Management Actions

The objectives of wild horse management are to protect, maintain, and control a viable, healthy herd of wild horses while retaining their free-roaming nature and to provide adequate habitat. There are three wild horse herd management areas (HMAs) within the Rawlins FO. They are the Adobe Town HMA, the Lost Creek HMA, and the Stewart Creek HMA. Appropriate Management Levels (AMLs) for these areas are: Adobe Town, 700; Lost Creek, 70; and Stewart Creek, 150. These HMAs and AMLs were established in 1994 through analysis and interpretation of the results of extensive monitoring. The boundaries of the HMA were adjusted as a result of additional monitoring since 1994. Inventory, population monitoring, and wild horse management are the responsibility of the Rawlins FO. In addition, a portion of the Antelope Hills HMA is within the Rawlins FO. Habitat monitoring for this portion of the Antelope Hills HMA is the responsibility of the Lander FO. Herd management area plans for each of the three Rawlins HMAs will be revised and updated to reflect current policies and circumstances.

The Adobe Town HMA includes land within the administrative boundaries of the Rawlins and Rock Springs FOs. The northern boundary of the Adobe Town HMA corresponds to the southeastern boundary of the Salt Wells HMA in the Rock Springs FO. Included within the Adobe Town HMA is the Adobe Town Wilderness Study Area and all or portions of 14 grazing allotments. The AMLs for the two HMAs are unaffected by this maintenance action.

No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

Actions associated with wild horse management are expected to be limited to occasional herding, corralling, and transporting horses. These actions are not expected to impact blowout penstemon plants or habitats. The current known populations of blowout penstemon are not located near any HMAs. Antelope Hills, Lost Creek, and Stewart Creek HMAs contain potential blowout penstemon habitat, but no populations have been found in these HMAs. Wild horse roundup structures (e.g.; corals, fences, etc.) would not be located in blowout penstemon habitat. Occasional herbivory by wild horses on blowout penstemon plants might take place if any populations are located within the three HMAs.

## Determination

Implementation of wild horse management, as presented in the Great Divide RMP (BLM 1990), will have **no effect** on the blowout penstemon. This determination is based on the absence of wild horse HMAs within or near habitat for the blowout penstemon. In the event that populations of blowout penstemon are discovered in any of the three HMAs, implementation of wild horse management, as presented in the Great Divide RMP (BLM 1990), may affect, but is **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the low likelihood that the blowout penstemon will be adversely affected by actions associated with management of wild horses.

## Wildlife Habitat and Fisheries Management

### Management Actions

The 29 standard habitat types in the Rawlins FO have been ranked by management priority into three categories. High-priority habitat types, which usually support a large number of wildlife species, are not common in the FO. Sound management is required to ensure maintenance or improvement of the vegetative composition and structure of moderate-priority habitat types, which are usually less important to wildlife but are more abundant than high-priority types. There is less vegetative diversity in low-priority habitat types. Because of their abundance and lower wildlife value, these types can be more heavily used by conflicting resources without significant impacts to wildlife.

The general objectives for wildlife habitat and fisheries management are to:

- Provide habitat quality adequate to support a natural diversity of wildlife and fisheries, including big game; upland game; waterfowl; non-game species; game fish; sensitive, threatened, and endangered species; and species of special management interest in Wyoming; as well as to assist in meeting the goals of established recovery plans.
- Maintain or improve vegetation condition and avoid long-term disturbance in high-priority standard habitat sites.
- Maintain or improve overall ecological quality, thus providing good wildlife habitat, within the constraints of multiple-use management in moderate- and low-priority standard habitat types.

There will be 16 habitat management areas. Site-specific management actions will be implemented in these areas to improve wildlife habitat. These site-specific management actions will be identified in existing, revised, or proposed HMPs. The HMPs will also address transplants or augmentations of endemic wildlife species. Wildlife and wildlife habitat inventory and monitoring will be implemented in all HMP areas, cooperative management areas, and other portions of the FO. These inventories and monitoring studies will conform to BLM policy and standards found in BLM manuals, Wyoming state office supplements, and Wyoming instruction memoranda. The estimated areas involved in management actions in HMP areas include 60 miles of streams (fisheries); 545 acres of reservoirs; 271,000 acres of raptor habitat; 243,000 acres of high-priority habitat (including wetlands and riparian zones); and crucial winter range for big game species as follows: antelope, 375,000 acres; bighorn sheep, 23,000 acres; deer, 288,000 acres; and elk, 153,000 acres.

No specific requirements or guidelines applicable for minimizing impacts to blowout penstemon are included for these activities in the RMP.

### Effects Analysis

Wildlife habitat management may influence the blowout penstemon and its habitat. Potential impacts depend on several factors, including the number of people involved with each field effort, the time of

year, the duration of field activities, use of heavy machinery versus hand tools, and the type of habitat affected. These actions will likely have positive effects by maintaining or improving existing habitat conditions required by blowout penstemon. Wildlife species, primarily mule deer and elk, will eat blowout penstemon plants, usually flowering stalks. This uncontrolled browsing can be heavy during some years, removing many flowers and reducing reproductive potential. The Wyoming Game and Fish Department manages wildlife in the state and it is thus not a discretionary action by the BLM to remove these herbivores.

## Determination

Implementation of wildlife habitat management actions, as presented in the Great Divide RMP (BLM 1990), may affect, but is **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the low likelihood that wildlife habitat and fisheries management actions would adversely affect the blowout penstemon and its habitat and that the secondary affects of these actions would be non-impacting or beneficial to blowout penstemon habitat.

## Summary of Determinations

**Table 1** is a summary of the effects determinations developed for each of the Great Divide RMP management actions.

**TABLE 1 SUMMARY OF DETERMINATIONS FOR THE GREAT DIVIDE RMP**

Resource	Determination
Management of Areas of Critical Environmental Concern	No effect
Cultural Resources Management	Not likely to adversely affect, due to discountable effects
Paleontological Resource Management	Not likely to adversely affect, due to discountable effects
Fire Management	Not likely to adversely affect, due to discountable effects
Forest Management	No effect
Lands Program Management	Not likely to adversely affect, due to discountable effects
Livestock Grazing Management	Likely to adversely affect
Minerals Management	Not likely to adversely affect, due to discountable effects
Recreation/ORV Management	Not likely to adversely affect, due to discountable effects
Sensitive Plants Management	Not likely to adversely affect, due to beneficial effects
Soil and Water Management	Not likely to adversely affect, due to discountable effects
Air Quality Management	Not likely to adversely affect, due to beneficial effects
Visual Resource Management	Not likely to adversely affect, due to beneficial effects
Wild Horse Management	No effect
Wildlife and Fisheries Management	Not likely to adversely affect, due to discountable effects

## Cumulative Effects

Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the Rawlins FO. No future State, tribal, local, or private actions that may affect the blowout penstemon or suitable habitats are anticipated. Implementation of the Great Divide RMP would not change any potential effects on the blowout penstemon that may result from current non-Federal actions.

Potential cumulative effects to habitat located on private lands include habitat loss and fragmentation. Because no critical habitat has been designated by the USFWS for the blowout penstemon, there is potential for habitat destruction and fragmentation to occur as private lands are developed. Development of private lands would also represent a significant loss of habitat available for reintroduction efforts.

# 5.0 ANALYSIS OF THE PLATTE RIVER RMP

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## INTRODUCTION

The *Record of Decision for the Resource Management Plan/Final Environmental Impact Statement for the Platte River Resource Area* was signed in July 1985 (BLM 1985). The Platte River (Casper) RMP (BLM 1985) describes the planning decisions for all management prescriptions applicable to the 14 Resource Management Units (RMUs) in the Casper FO. All specific actions within each RMU are based on the goals and objectives established in the planning decisions. The following text briefly summarizes the management actions for each resource and any associated impact minimization measures that specifically apply to the blowout penstemon. The effects analysis and determination for each management action are based on the description of each management action provided in the RMP and any applicable established guidelines. Conservation measures not included as part of the RMP will be presented in the Conservation Strategies section of this document. The Platte River RMP provides a complete description of each management prescription (BLM 1985). The following management actions are included:

- Cultural Resources
- Energy and Minerals
- Fire Management
- Forest Management
- Grazing Management
- Lands Management
- Recreation Management
- Soil, Water, and Air
- Wildlife
- Special Designations

## ENVIRONMENTAL BASELINE

The environmental baseline describes past and current factors in the area that may have contributed to the status of the species and current protective measures. This section presents a summary of the known populations of blowout penstemon in the Casper FO and an analysis of the effects of past and ongoing human activities (including Federal, state, tribal, local, and private) that may have influenced blowout penstemon plants and their habitats.

Until 1996, the blowout penstemon was not known to occur in Wyoming in general. Potential habitat for the blowout penstemon occurs in the Casper FO (**Map 2**), but no populations have been detected (**Map 3**). It was initially discovered in Wyoming by Frank Blomquist in 1996, but was not confirmed until 1999 (Fertig 2001a). Previously, it was thought to be endemic only to Nebraska. Therefore, the Platte River RMP (BLM 1985) contains no specific measures intended to protect the blowout penstemon as it was developed approved prior to the discovery of the plant.

## ANALYSIS OF PROPOSED MANAGEMENT ACTIONS AND EFFECTS

The proposed actions include planning decisions and specific management prescriptions for each RMU described in the Platte River RMP (BLM 1985). The Platte River RMP (BLM 1985) represents a selection of management actions that attempt to resolve planning issues and sustain multiple use of public lands and resources (BLM 1985). The following sections describe the management actions in the Platte River RMP (BLM 1985) that may affect the blowout penstemon habitat. Direct and indirect effects are presented after each planning decision. The Platte River RMP (BLM 1985) provides a complete description of each management action (BLM 1985).

### Cultural Resource Management

#### Management Actions

Management of cultural resources within the Platte River RMP (BLM 1985) focuses on identification, inventory, and preservation. Sites along the Oregon-Mormon National Historic Trail and the Bozeman Trail will be managed to foster, promote, and protect its significant cultural, scientific, and recreational values, as outlined in the National Park Service's *Oregon Trail Comprehensive Management Plan* and cited in the Platte River RMP (BLM 1985). Surface development will be prohibited on cultural sites within these trails and sites nominated to the National Register. Proposals for surface development within the Notches Dome Archeological District will require an on-site Class III inventory before implementation. This requirement will be voided if BLM completes a Class III inventory for all land within the archeological district. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

#### Effects Analysis

No known blowout penstemon populations currently exist in the Casper FO (**Map 1**). Cultural resource management may affect potential habitat for the blowout penstemon by excavating soils and removing or trampling vegetation in areas where management actions are implemented. Surface disturbance associated with cultural resource investigations can vary in size and degree. Potential impacts to blowout penstemon habitat 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 habitat affected. Disturbance to blowout penstemon habitat would likely occur only if large-scale excavation takes place.

#### Determination

Implementation of cultural resource management actions, as presented in the Platte River RMP (BLM 1985), may affect, but is **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the low likelihood that management actions would take place in potential habitats and because no known blowout penstemon populations are found within the Casper FO, and the identification of the presence or absence of the blowout penstemon plant if surface-disturbing activities are planned to occur in suitable habitat.

## Energy and Minerals Management

### Management Actions

Lands administered by BLM will remain open to oil and gas leasing and exploration, subject to the stipulations on surface disturbance, wildlife, special resource protection, and no surface occupancy. The surface disturbance stipulation for oil and gas leasing in the Casper FO prohibits surface disturbance within 500 feet of surface water and riparian areas. The NSO section of the stipulation is intended to protect unique wildlife, such as threatened and endangered species, which cannot be protected using seasonal restrictions.

Mitigating measures prescribed in the Platte River Oil and Gas Environmental Assessment (EA) (BLM 1982) and the South Big Horn Oil and Gas EA (BLM 1979) will be applied on a case-by-case basis. No leasing will occur within Naval Petroleum Reserve No. 3. In addition, oil and gas leasing is restricted on lands within 1 mile of this reserve. Other specific areas within the Casper FO, characterized by steep slopes, highly erosive soils, or timber, are not open to oil and gas leasing. Oil and gas development is further restricted from several tracts of land (identified in the RMP) because of steep slopes or erosive soils.

Federal coal land, as identified in the Converse County Coal Amendment (BLM 1983), can be considered for further leasing through the competitive leasing program, emergency leasing, lease modifications, or exchanges. Delineated coal tracts on Federal lands will be available for competitive leasing in one sale, beginning with a second round in the Powder River lease sale. Tracts previously considered for leasing and newly delineated tracts will also be available for consideration. Any coal tract not selected for inclusion in a lease sale or any tract that is included in a lease sale but not sold can be either re-delineated or dropped from further consideration for sale.

Minerals such as sand and gravel, moss rock, flagstone, and scoria will be available on demand for sale and for free use, subject to case-by-case conditions and stipulations, so that efficient use can be made of the mineral resource. Materials in all areas are available, except those within ¼ mile of the North Platte River for its entire length in the Platte River Resource Area (PRRA). However, sand and gravel operations authorized before August 1, 1984, or Federal sand and gravel within the ¼-mile buffer, would be continued.

All BLM-administered mineral estates, except in areas specifically withdrawn from mineral location, will remain open for prospecting and development of locatable minerals. Development is subject to the regulations contained in Title 43 Code of Federal Regulations (CFR) Part 3809. The following areas are withdrawn from mineral location:

- Public water reserves
- North Platte River protective withdrawal
- Leased or patented recreation and public purpose lands
- Muddy Mountain Recreation and Environmental Education Area
- Pathfinder Wildlife Refuge
- Naval Petroleum Reserve No. 3

No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

Direct effects to the blowout penstemon are not expected, because there are no known blowout penstemon populations in the Casper FO (**Map 1**). Construction of roads, pads, and other facilities could alter or destroy potential habitats. However, such construction is unlikely in blowout penstemon habitat because of steep slopes and unstable substrate. Increased human activity associated with nearby development of mineral resources may lead to increases in illegal plant collection and disturbances to habitat.

## Determination

Implementation of energy and minerals management actions, as presented in the Platte River RMP (BLM 1985), may affect, but is **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the lack of known blowout penstemon populations occurring within the Casper FO, prohibitions currently in place including restricting all vehicle use to existing roads and trails and prohibiting surface disturbing activities in blowout penstemon habitat, conservation measures in place to protect the plant and its habitat, and the fact that energy and mineral development is not occurring in or adjacent to potential blowout penstemon habitat.

## Fire Management

### Management Actions

Prescribed burning will be implemented to manipulate vegetation in areas identified for treatment in the range, forestry, and wildlife programs.

Heavy equipment will not be used to construct firelines in areas containing wagon ruts of the Oregon and Bozeman trails. Cultural resource specialists or area resource specialists will be consulted for locations of identified wagon ruts before use of heavy equipment. Exceptions may be permitted to protect human life. Heavy equipment will generally not be used to construct firelines in critical winter range for elk. The PRRA wildlife biologist will be consulted when fires threaten elk critical winter range. If heavy equipment is used, rehabilitation on firelines will begin immediately after the fire is declared out.

The BLM will pursue cooperative agreements with private landowners and other fire and land management agencies to establish an initial attack plan. That plan would be used for an escaped fire situation analysis plan. These plans will include identification of areas where grading of roads or firebreaks is most needed for fire suppression. In addition, these plans will identify areas where protection from wildfires is most critical. A draft initial attack plan was to be completed by June 30, 1993. Prescribed burning will be implemented where necessary to meet range and timber resource management objectives, but would not be allowed from November 1 through March 31.

No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

Wildland fires are not expected to directly impact the blowout penstemon because its habitat typically occurs in steep, sparsely vegetated sand dunes. Furthermore, a natural disturbance process such as fire is thought to enhance the blowout penstemon habitat by removing sand-stabilizing vegetation. Fire management, particularly actions associated with prescribed fire, have the potential to improve blowout penstemon habitats. Implementation of fire control policies may reduce wind erosion, resulting in a loss of blowout penstemon habitat (Fertig 2001b). As a result of fire suppression, blowout penstemon habitats could be altered from the equipment and resources used to fight fire.

## Determination

Implementation of fire management actions, as presented in the Platte River RMP (BLM 1985), may affect, but is **not likely to adversely affect** the blowout penstemon due to **discountable effects**. This determination is based on the low potential for fires to occur in habitat for the blowout penstemon and the low probability that fire equipment would be used in an area that contains blowout penstemon habitat. In the rare event of a wildfire and immediate suppression is required in occupied blowout penstemon habitat, 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 blowout penstemon habitat is affected/impacted.

## Forest Management

### Management Actions

A detailed timber management activity plan will be developed for 17 designated areas in the Casper FO, totaling 13,590 acres. Silvicultural practices will complement timber harvesting and increase stand vigor. At least 50 percent of the lodgepole pine and ponderosa pine will be cut, either by selective cutting or by clear cutting. Stands of lodgepole pine seedlings will be thinned by sale as Christmas trees. Stands of commercial lodgepole pine will be thinned by sale of posts, poles, and fuel wood. Over-mature trees infested with dwarf mistletoe will be cut and removed. Clear-cutting of 3 to 5 acres will provide for natural regeneration. If the stand does not regenerate naturally in 3 years, artificial regeneration will be undertaken.

The allowable cut was about 6 MMBF through 1995. The annual cut will average about 600 thousand board feet (MBF) over the 10-year life of this plan. In the first 5 years, the cut will be about 750 MBF per year; for the next 10 years, it will be 500 MBF per year.

No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

Forest management will be restricted to stands of coniferous trees within the Casper FO. Conversely, blowout penstemon plants are typically associated with steep slopes and sparsely vegetated sand dunes. These habitats are distinct from those targeted for forest management actions. Therefore, potential blowout penstemon habitats are generally mutually exclusive with forest management and not expected to experience any detrimental effects as the result of forest management.

## Determination

Implementation of forest management actions, as presented in the Platte River RMP (BLM 1985), will have **no effect** on the blowout penstemon. This determination is based on the absence of forest management areas within or near habitat for the blowout penstemon.

## Grazing Management

### Management Actions

Grazing leases will be managed on 1,422,753 acres of public land in the Platte River RMP (BLM 1995). Leases will be revised as necessary to accommodate expected increases in AUMs from more intensive range management. Most of the grazing leases managed under the Platte River RMP are conducted under Section 15 of the Taylor Grazing Act (TGA) and are those lands outside of grazing districts. These lands are intermingled with private and state owned lands, are usually smaller than 160 acres in size and difficult to manage by the BLM.

Allotment management plans, cooperative management agreements, and coordinated management plans will be initiated as necessary on priority allotments, provided funding and personnel are available to handle the workload. Range improvement projects, studies, and monitoring over the long term are described in the Platte River RMP (BLM 1985).

No specific requirements or guidelines applicable to for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

### Effects Analysis

Livestock grazing or associated activities may have a detrimental affect on blowout penstemon or its habitat. Direct effects to the blowout penstemon are not expected because there are no known populations in the Casper FO (**Map 1**). Improvements to grazing allotments intended to increase available forage, including use of heavy equipment and alteration of existing vegetation composition, may detrimentally impact blowout penstemon habitats, especially if improvements occurred near or within known blowout penstemon populations. Fencing, changes in livestock seasons of use or type of livestock, and livestock improvement projects may affect the blowout penstemon by crushing or removal of individual plants. Blowout penstemon is edible to cattle and horses, but is not preferred forage if other vegetation is available. However, livestock grazing, although unlikely to occur in the sparsely vegetated, shifting sand, and steep slopes of blowout penstemon habitat, does occur to a small extent on areas currently occupied by blowout penstemon in Wyoming. Wildlife is the primary herbivore, eating the upper stems and flowers. Livestock trampling damage is typically not significant because of the plant's sparse distribution and its shifting substrate although livestock may step on and crush a few individual plants or consume them along with other more preferred plant species. Though individual plants may be damaged, and the fitness of the plants may be affected for the season, the plants usually recover and the overall population is minimally affected. Livestock passing through blowout penstemon habitat may also spread the seeds of invasive species through excrement. Infrequent grazing in blowout penstemon habitats may be beneficial to the plants by reducing competing vegetation (Fertig 2001b), although individual blowout penstemon plants will also be grazed. Livestock grazing is not excluded from potential blowout penstemon habitat though fencing or other actions, so livestock are able to access the blowout penstemon plants. Fencing of blowout penstemon habitat is very difficult due to the movement of the sand dunes that comprise the plant's habitat, the impracticality of trying to build fences on a sand substrate, and the difficulty of maintaining fences as blowing sands cover them, making them inoperable and blowing over the fences and pulling off wires. Fencing of blowout penstemon habitat is thus an

impracticable task. BLM intends to continue grazing activities along with surveying for the blowout penstemon.

## Determination

Activities associated with livestock grazing management, as presented in the Platte River RMP (BLM 1985), may affect, but are **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the absence of blowout penstemon within the Casper FO and the low likelihood that livestock grazing management actions would take place in blowout penstemon habitat. The principal impact by livestock grazing in the Casper FO is on potential blowout penstemon habitat. Infrequent grazing in blowout penstemon habitats may have some secondary **beneficial effects** by reducing competing vegetation.

## Lands Management

### Management Actions

A total of 1,700 acres has been specifically identified for lease or disposal under the Recreation and Public Purpose (R&PP) Act as follows: Casper Mountain, 480 acres; Glendo Reservoir, 92 acres; Gray Rocks Reservoir, 278 acres; Torrington tract, 120 acres; Natrona County School District site, 40 acres; Esterbrook townsite, 15.29 acres; and the Converse County Park, 660 acres. These lands have been identified because they are within high-use recreation areas or near communities.

About 470 acres, including 200 acres within Casper's projected growth boundary and 275 acres near the Gray Rocks Reservoir, have been identified for disposal under the R&PP Act. If no R&PP lease or disposal was made by 1987, however, these lands were to be disposed of by exchange if possible, or by public sale.

Other public lands in the FO can be considered case-by-case when a definite need for the land is identified, the requirements of the R&PP Act can be met, and the proposal conforms with this and local land use plans.

Sanitary landfilling is the most common method of solid waste disposal in the PRRA. Public lands are frequently leased for landfills under the R&PP Act. The following have been identified as problem areas, and future potential landfill sites may be considered: Arminto, Hiland, and Waltman; Badwater; Raderville; Powder River; Medicine Bow Highway (U.S. 487); Hartville-Sunrise; and Chugwater Creek. In these areas, there is either a problem such as indiscriminate or trespass dumping, or the existing waste disposal facility is inadequate.

Exchanges are used to acquire non-Federal lands to enhance BLM management opportunities. The BLM would like to acquire land through exchange in the following selected areas: Muddy Mountain, the North Platte River, Table Mountain, Red Wall, South Big Horns, Rattlesnake Range, Ryan Hill (Oregon Trail), Alkali Slough (Oregon Trail). These areas are considered to offer good potential for recreation development, or they contain important wildlife, cultural, scenic, natural, open space, or other resource values.

Tracts of public land not critical to current management objectives will be disposed of to acquire land as opportunities for exchange arise. Some lands have been identified for disposal as a means to acquire specific tracts of private land.

About 102,700 acres are tentatively identified for disposal, including land that could be available for exchange, or for sale if the action would be in the public interest. Disposal can be initiated without amending the RMP.

Protective withdrawals will be established in four areas. The objective of withdrawals is to protect and preserve important resource values. Some limitations apply, such as completing thorough mineral investigations. The areas where withdrawals will be recommended are Pterodactyl Track, Muddy Mountain Environmental Education Area (EEA), Jackson Canyon, and Table Mountain. About 7,200 acres in these four areas will be recommended for withdrawal. The Platte River protective withdrawal, which contains about 3,300 acres, will be continued. The Fremont Canyon classification and multiple use (C&MU) (1,300 acres) will be terminated.

The Oregon Trail corridor and four existing corridors will be designated in accordance with 43 CFR 2806. Except for the new location of the Oregon Trail, each designation will include the same types of facilities that are present within the corridor.

No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for these activities in the RMP.

## Effects Analysis

Direct effects to the blowout penstemon are not expected because there are no known blowout penstemon populations in the Casper FO (**Map 1**). It is not likely that new utility systems would be sited in potential habitats because blowout penstemon habitat, including steep slopes and unstable substrate, would likely be avoided. Lands and realty management actions are not expected to negatively impact blowout penstemon plants or habitats. Lands not under BLM jurisdiction that are potential habitats for blowout penstemon may be targeted for acquisition and subsequent management by BLM. Such acquisitions would benefit habitats for the blowout penstemon through protections that may not be available under non-Federal ownership.

## Determination

Activities associated with land resource management, as presented in the Platte River RMP (BLM 1985), may affect, but are **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the very low likelihood that land resource management actions would take place in known populations of the blowout penstemon. Land acquisition and withdrawal actions may have secondary **beneficial effects** to the blowout penstemon by maintaining or acquiring potential habitats, although none are planned under the Platte River RMP (BLM 1985).

## Recreation/ORV Management

### Management Actions

Recreation Area Management Plans (RAMPs) will be implemented according to the management objectives and decisions defined for the Muddy Mountain Area, Goldeneye Wildlife and Recreation Area, Middle Fork Management Area, and North Platte River.

The Muddy Mountain activity plan, completed in 1977, provides planning decisions for preserving the natural character and wildlife habitat of 12,000 acres of BLM land in areas identified as the Muddy Mountain EEA, North Rim, Corral Creek Canyon, West Rim, Baldy Knob, and the East End. The plan sets forth actions necessary to manage public use to minimize resource damage and conflicts. Uses included are recreation, public access, visitor control and environmental protection, information,

interpretation, special recreation use permits, wildlife, timber, range minerals, lands, and fire management. The EEA area will be recommended for withdrawal from the operation of the 1872 mining law.

The Goldeneye plan provides for cooperative management of 733 acres of BLM land, 280 acres of state land, and 140 acres of private land, or a total area of 1,153 acres. A 488-acre reservoir is included in the total acreage. The management program sets forth actions for recreation (hunting, fishing, and picnicking), wildlife (trout fishery and bird habitat), livestock grazing, mineral activities, and lands actions. The plan does not permit surface development within the boundary of the recreation area unless it would facilitate recreational use or enhance wildlife habitat.

The Middle Fork Management area lies in Natrona County (21,600 acres) and Johnson County (57,560 acres). The portion in Johnson County is covered by the BLM's Buffalo FO. A recreation plan has been implemented in the Johnson County portion of the area. The PRRA will cooperate with the Buffalo FO to manage the Natrona County portion of the Middle Fork Management Area. The plan provides for a high-quality, multiple activity recreation area for public enjoyment while protecting high-value resources, ensuring permanent access, and maintaining other compatible resource uses. Emphasis in the PRRA-Buffalo cooperative management of the Natrona County portion will be on protection of wildlife habitat, access, and cultural resources.

The North Platte River RAMP will provide for management of 200 acres (nine parcels) of public land contiguous to the river between Alcova and Casper, and 10 riverfront parcels of public surface between Casper and the Wyoming-Nebraska state line. Camping, fishing, boating, hunting, and limited ORV use will be included. Field inventories will be conducted to monitor use by visitors and resource degradation. Boundary signs will be posted on public land, and hazards on the river will be identified. Written agreements with landowners will be obtained before signs are posted on private surface.

Various types of ORV use are designated in the Casper FO. The following is a list of the designations and the associated acreages:

- Open for unlimited use (200 acres, less than 1 percent total FO);
- Closed to all ORV use (2,616 acres, less than 1 percent total FO);
- Open limited, on designated routes only (64,838 acres, 5 percent total FO); and
- ORVs must stay on existing routes, temporary ORV use is permitted for performance of necessary tasks (1,331,676 acres, 95 percent total FO).

No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

Actions associated with recreation management have the potential to detrimentally impact blowout penstemon and its habitat although no known populations of blowout penstemon occur within the Casper FO (**Map 1**). Hill climbing and associated ORV activities may benefit blowout penstemon habitat by ensuring continued disturbance and erosion. However, driving directly over plants may cause a severe negative impact to populations (USFWS 1992). An additional indirect effect of this action may be the introduction of non-native plants if recreational hikers or ORV users carry seeds into the area unintentionally. The present ORV designations allowed in the Platte River RMP (1985) closes (1% of the area) or limits ORV travel to existing roads and trails, except for a 200 acre area that doesn't contain any potential blowout penstemon habitat, which generally protects potential blowout penstemon habitat.

## Determination

Implementation of recreation resource management actions, as presented in the Platte River RMP (BLM 1985), may affect, but is **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the absence of blowout penstemon within the Casper FO and the low likelihood that recreation activities managed by the BLM would take place in the same area as potential habitat for blowout penstemon.

## Soil, Water, and Air Management

### Management Actions

The BLM will implement the Bates Holes watershed plan for southwestern Natrona County to identify sources of heavy sediment loads in the North Platte River. To date, Bolton Creek, Ledge Creek, Bear Creek, Washout Creek, Stinking Creek, and Big Red Creek have been identified as drainages of concern. BLM will attempt to identify the cause of the erosion (geologic or accelerated) and to reduce or eliminate accelerated erosion. Any attempt to reduce heavy sediment loads will be based on cost-benefit analysis.

Short-term, intermediate, and long-term stream monitoring surveys (Level II) will be continued on the Stinking Creek, Elk Creek, Red Creek, Bear Creek, and Bolton Creek streams and drainages.

For the protection of surface water, surface development will be prohibited in the following areas: within ¼ mile of the North Platte River; within 500 feet of live streams, lakes, reservoirs, and canals and associated riparian habitat; and within 500 feet of water wells, springs, or artesian and flowing wells. These restrictions, including the restriction on intermittent and ephemeral streams, may be waived in writing by the Authorized Officer if potential impacts can be acceptably mitigated. The ¼-mile limitation is not to be waived on the Trappers Route tracts, but it does not apply to recreation facilities.

Proposals for surface development involving intermittent and ephemeral streams will be evaluated, and site-specific impact minimization measures will be applied as necessary. In other cases, development will be moved a sufficient distance to ensure the integrity of the natural drainage. This restriction applies to intermittent streams and well-defined ephemeral streams where watershed conditions indicate that the stream may carry sufficient quantities of water to result in damage to surface facilities or to dike channels. This decision will be applied on a case-by-case basis. It will not apply to every topographic depression or drainage that could carry runoff at some time; rather, it will apply to drainages that have the potential to affect live streams.

No occupancy or other surface disturbance is allowed on slopes of more than 25 percent without written permission from the district manager. No occupancy is allowed on slopes over 25 percent in the South Big Horns (RMU-1). Other restrictions on surface development include soil protection measures, fragile watershed conditions, and fragile areas. These occur throughout various drainages and areas and are listed in the Platte River RMP (BLM 1985). No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for these activities in the RMP.

### Effects Analysis

Direct effects to the blowout penstemon are not expected because there are no known blowout penstemon populations in the Casper FO (**Map 1**). Management of soil, water, and air resources is not expected to detrimentally impact potential blowout penstemon habitat. Resource management involves some restrictions for surface disturbance on steep slopes, which are common in blowout penstemon habitat. This may result in beneficial effects on blowout penstemon and its habitat.

**Air Quality Management:** No known populations of blowout penstemon occur within the Casper FO (**Map 1**). Currently there are no air quality monitoring stations within any blowout penstemon habitat in the Casper FO. Placement of air monitoring stations would not be likely in blowout penstemon habitat as the nature of shifting sands would not provide for a stable foundation for such structures. Actions related to air quality management on other activities will not result in negative impacts to blowout penstemon or its potential habitat. These management actions will likely result in maintaining or improving air quality conditions throughout the FO, which may have secondary benefits to blowout penstemon.

**Soil Resources Management:** The implementation of soils management involves planning for actions that will alleviate soil erosion and modifying others to avoid soil erosion. There are no impacts from this management action on blowout penstemon habitat. However, activities associated with soil mapping/sampling may include surveying, core drilling, use of pick-up truck mounted soil augers and core samplers (1 ½” 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 conducted. 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. Other surface disturbing 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. These types of soil analysis are not generally conducted on the large sand dunes associated with blowout penstemon.

**Water Resources Management:** 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 (re-contouring 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.).

The above types of actions associated with watershed management actions are infrequent, small in scale, would take place very rarely, if at all within any blowout penstemon habitat and would likely have minimal or no negative impacts on blowout penstemon habitats. Overall, actions associated with watershed management are likely to improve habitat for the blowout penstemon.

## Determination

Management of soil, water, and air resources is not expected to detrimentally impact the blowout penstemon and its habitat. Resource management generally precludes surface disturbance in unstable areas such as blowout penstemon habitat. Slope restrictions for surface development will assist in maintaining and protecting potential habitats for blowout penstemon. These restrictions may result in beneficial effects on blowout penstemon and its habitat. Actions associated with soil, water and air resource management, such as monitoring lakes or ponds for evidence of acid rain, monitoring streams for soil erosion or chemical pollutants, or measuring snow depth to determine precipitation amounts, conducting soil surveys, etc., are non-impacting or beneficial in protecting and maintaining blowout penstemon habitat. Conducting a soil survey would be a short duration effort with minimal impacts. Watershed improvements are more intrusive and would have more impacts, but would generally not be done on shifting dunal sands.

**Air Quality Management:** Implementation of air quality management actions, as presented in the Platte River RMP (BLM 1985), is **not likely to adversely affect** the blowout penstemon, due to **beneficial effects**. Air quality management efforts may result in positive effects to air quality that might be beneficial to blowout penstemon.

**Soils and Water Resources Management:** Implementation of soil, water, and air resource management actions, as presented in the Platte River RMP (BLM 1985), may affect, but is **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the Conservation Measures in place that will preclude or minimize adverse effects to the blowout penstemon or its habitat. The activities associated with these management actions are infrequent, localized or small in scale, and generally not likely to occur in blowout penstemon habitat. Implementation of soil and water resource management actions may maintain or improve the condition of some habitats and therefore may result in secondary beneficial effects to maintain or improve blowout penstemon habitats.

## Wildlife Management

### Management Actions

Three wildlife management areas, Table Mountain, Springer/Bump-Sullivan, and Bates Creek Reservoir, are included in the Casper FO. Table Mountain and Springer/Bump-Sullivan areas are managed in cooperation with the WGFD through implementation of completed HMPs. HMPs will be prepared for Bates Creek Reservoir, Bates Creek aquatic habitat, Upper Laramie River, Teal Marsh Reservoir, Thirty-three Mile Reservoir, Rawhide Unit, Medicine Bow, Bolton Creek, and Stinking Creek. Specific management objectives for protection of aquatic habitat and range monitoring are described in the Platte River RMP (BLM 1985) and will be included in the various HMPs for these areas.

Specific management objectives are also described for various species, including antelope, deer, sage grouse, elk, bald eagles, raptors, turkeys, and black-footed ferrets. These management objectives include seasonal restrictions for surface development and permanent restrictions on development in some critical

habitats. The Casper FO will seek to maintain and improve wildlife habitats through land acquisition and exchanges.

No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

Direct effects to the blowout penstemon are not expected because there are no known blowout penstemon populations in the Casper FO (**Map 1**). Wildlife habitat management may influence potential habitats for blowout penstemon. 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 habitats affected. Implementation of these actions, especially those actions that restrict development, will likely have positive overall effects by maintaining or improving existing habitat conditions required by blowout penstemon. Wildlife species, primarily mule deer and elk (and antelope), will eat blowout penstemon plants, usually flowering stalks. This uncontrolled browsing can be heavy during some years, removing many flowers and reducing reproductive potential. The Wyoming Game and Fish Department manages wildlife in the state and it is thus not a discretionary action by the BLM to remove these herbivores.

## Determination

Implementation of wildlife habitat management actions, as presented in the Platte River RMP (BLM 1985), may affect, but is **not likely to adversely affect** the blowout penstemon due to **discountable effects**. This determination is based on the low likelihood that wildlife management actions would take place in potential habitat for the blowout penstemon. Additionally, implementation of these actions, especially those actions that specify restrictions on development, will likely have **beneficial effects** by maintaining or improving existing habitat conditions that are required by blowout penstemon.

## Special Designations Management

### Management Actions

Seven special designations are identified within the Casper FO. These designations include Pterodactyl Track (natural history), Red Wall (recreation), Salt Creek ACEC (soil, water, and air), Jackson Canyon ACEC (wildlife), Muddy Mountain Environmental Education Area (recreation), Casper Sand Dunes (soil, water, air), and Natural Landmarks. Management actions vary according to the designation of an area. Specific management actions for each area are described in the Platte River RMP (BLM 1985) No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

Direct effects to the blowout penstemon are not expected because there are no known blowout penstemon populations in the Casper FO (**Map 1**). Management of specially designated areas will not detrimentally impact potential blowout penstemon habitats. The 13,560 acres of the Casper Sand Dunes ACEC may contain potential habitat and populations of blowout penstemon. The remaining ACECs managed by the Platte River RMP (BLM 1985), contain no known blowout penstemon populations or potential habitat (**Map 1**). Management of special designated areas may have beneficial effects due to access restrictions and surface disturbance limitations. Limitations placed on the Casper Sand Dunes ACEC may have a beneficial effect on the blowout penstemon if populations of the plant are discovered there.

## Determination

Implementation of special designations habitat management actions, as presented in the Platte River RMP (BLM 1985), may affect, but is **not likely to adversely affect** the blowout penstemon, due to **beneficial effects**. This determination is based on the potential that restrictive actions in the Casper Sand Dunes ACEC may maintain or improve habitat for blowout penstemon and on the absence of blowout penstemon occurrences and habitat in the remaining ACEC management areas.

## Summary of Determinations

The following is a summary of the effects determinations developed for each of the Platte River RMP management actions.

**TABLE 2 SUMMARY OF DETERMINATIONS FOR THE PLATTE RIVER RMP**

<b>Resource</b>	<b>Determination</b>
Cultural Resource Management	Not likely to adversely affect, due to discountable effects
Energy and Minerals Management	Not likely to adversely affect, due to discountable effects
Fire Management	Not likely to adversely affect, due to discountable effects
Forest Management	No effect
Grazing Management	Not likely to adversely affect, due to discountable effects
Lands Management	Not likely to adversely affect, due to discountable effects
Recreation/ORV Management	Not likely to adversely affect, due to discountable effects
Soil and Water Management	Not likely to adversely affect, due to discountable effects
Air Management	Not likely to adversely affect, due to beneficial effects
Wildlife Management	Not likely to adversely affect, due to discountable effects
Special Designation Areas Management	Not likely to adversely affect, due to beneficial effects

## Cumulative Effects

Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the Casper FO. No future state, tribal, local, or private actions that may affect the blowout penstemon or potential habitats are anticipated.

Potential cumulative effects to habitat located on private lands include habitat loss and fragmentation. Because no critical habitat has been designated by the USFWS for the blowout penstemon, there is the potential for habit destruction and fragmentation as private lands are developed. Development of private lands may also result in a loss of habitat available for reintroduction efforts.

# 6.0 ANALYSIS OF THE GREEN RIVER RMP

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## INTRODUCTION

The *Record of Decision and approved Resource Management Plan (RMP) for the Green River Resource Area* was signed in August 1997 (BLM 1997). The Green River (Rock Springs FO) RMP (BLM 1997) provides management direction for approximately 3.6 million acres of public land surface and 3.5 million acres of Federal mineral estate. The Rock Springs FO is located in the southwestern portion of Wyoming and includes portions of Sweetwater, Lincoln, Sublette, Fremont, and Uinta counties.

Planning and management decisions in the Green River RMP (BLM 1997) are represented by a selection of management objectives and actions. The following text briefly summarizes management actions for each resource and any associated impact minimization measures that specifically apply to the blowout penstemon. The effects analysis and determination for each management action are based solely on each corresponding description provided in the RMP, and any established guidelines that may apply. Conservation measures not included as part of the RMP will be presented in the section on Conservation Strategies. The Green River RMP (BLM 1997) provides a complete description of each management action (BLM 1997). The following management actions are included:

- Air Quality Management
- Cultural, Natural History, and Paleontological Resource Management
- Fire Management
- Forests and Woodlands Management
- Hazardous Materials and Other Hazards
- Lands and Realty Management
- Livestock Grazing Management
- Minerals Management
- Off-Road Vehicle Management
- Recreation Resource Management
- Special Status Species Management
- Vegetation Management
- Visual Resource Management
- Watershed/Soils Management
- Wild Horse Management
- Wilderness Resource Management
- Wildlife Management
- Special Designation Management Areas

## ENVIRONMENTAL BASELINE

The environmental baseline describes past and current factors in the area that may have contributed to the status of the species and protective measures currently in place. This section presents a summary of the known populations of the blowout penstemon in the Rock Springs FO, and an analysis of the effects of past and ongoing human activities (including Federal, state, tribal, local, and private) that may have influenced blowout penstemon plants and their habitats.

Until 1996, the blowout penstemon was not known to occur in Wyoming. It was initially discovered in Wyoming by Frank Blomquist in 1996, but was not confirmed until 1999 (Fertig 2001a). Previously, it was thought to be endemic only to Nebraska. No populations of the blowout penstemon are known to occur within the Rock Springs FO (**Map 1**). Therefore, the Green River RMP (BLM 1997) contains no specific measures intended to protect the blowout penstemon. However, Fertig (2001b) identified potential habitat for blowout penstemon in the Killpecker Sand Dunes of north-central Sweetwater County (**Map 2**). Therefore, the effect of management actions within the Green River RMP (BLM 1997) will be assessed on potential habitat of the blowout penstemon.

## ANALYSIS OF PROPOSED MANAGEMENT ACTIONS AND EFFECTS

The Green River RMP (BLM 1997) includes descriptions of each management prescription included in the FO. The following text briefly summarizes the activities and any specific impact minimization measures associated with each management prescription. The *Wyoming BLM Mitigation Guidelines for Surface Disturbing and Disruptive Activities* will be applied to all surface disturbing or disruptive activities. These guidelines include timing limitations and ‘no surface occupancy’ restrictions that will minimize potential effects to blowout penstemon and its habitat. Refer to the Green River RMP (BLM 1997) for a complete explanation of each management action.

### Air Quality Management

#### Management Actions

The objectives for air quality management are to:

- Maintain and, where possible, enhance present air quality levels;
- Protect public health and safety and sensitive natural resources; and
- Minimize emissions that may add to acid rain, violate air quality standards, or reduce visibility, within the scope of BLM’s authority.

Special requirements (e.g., use authorization stipulations, mitigation measures, conditions of approval, etc.) to alleviate air quality impacts will be identified on a case-by-case basis and included in use authorizations (including mineral leases). Examples of such requirements would include: limiting emissions, spacing of source densities, requiring the collection of meteorological and air quality data, covering conveyors at mine sites (to lower dust emissions), and restricting natural gas flaring (to reduce sulfur emissions).

Plant facilities could be authorized where they minimize air quality impacts over the FO, particularly the Flaming Gorge National Recreation Area. They may not be authorized where they might cause heavy fog that is hazardous to public health, black ice on major highways, or possibly extreme and continual fog that could inhibit transportation or recreation.

Surface disturbance will be managed to prevent violation of air quality regulations. Construction and surface disturbance will be designed with dust control measures to reduce particulate matter and visibility impacts. Coordination with local and state agencies to control dust on unimproved dirt roads will occur where necessary.

The State of Wyoming has the authority and responsibility to regulate air quality impacts within the state, including Class I areas. The BLM will continue to cooperate and coordinate with the USDA-Forest Service, U.S. Environmental Protection Agency, and the State of Wyoming, for managing and monitoring air resources. For example, air quality data (e.g., atmospheric deposition, or acid rain, monitoring data) will be used to determine actual impacts from air pollutant emission sources. Emission levels will be inventoried and tracked to predict potential impacts, including effects on the Bridger Wilderness Area (which is a Prevention of Significant Deterioration Class I area) and to provide detailed information on proposed emission sources.

Cooperation to develop and apply visibility standards and guidelines is encouraged. BLM will cooperate with Wyoming Department of Environmental Quality (WDEQ) for review of air quality regulations that may impact BLM-managed activities. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

No known populations of blowout penstemon occur within the Rock Springs FO (**Map 1**). Currently there are no air quality monitoring stations within any blowout penstemon habitat in the Rock Springs FO. Placement of air monitoring stations would not be likely in blowout penstemon habitat as the nature of shifting sands would not provide for a stable foundation for such structures. Actions related to air quality management on other activities will not result in negative impacts to blowout penstemon or its potential habitat. These management actions will likely result in maintaining or improving air quality conditions throughout the FO, which may have secondary benefits to blowout penstemon.

## Determination

Implementation of air quality management actions, as presented in the Green River RMP (BLM 1997), may effect, but is **not likely to adversely affect** the blowout penstemon, due to **beneficial effects**. Air quality management efforts may result in positive effects to air quality that might be beneficial to blowout penstemon and its habitat.

## Cultural, Natural History, and Paleontological Resource Management

### Management Actions

The objectives of cultural, natural history, and paleontological resource management are to:

- Expand opportunities for scientific, educational, and interpretive uses of cultural and paleontological resources;

- Protect and preserve important cultural and paleontological resources and their historic record; and
- Resolve conflicts between cultural or paleontological resources and other resource uses.

Sites eligible for, or listed on the National Register of Historic Places (NRHP), will be managed for their local, regional, and national significance, under the guidelines of the National Historic Preservation Act (especially sections 106 and 110) and the Archeological Resources Protection Act (ARPA). These sites will be managed through proper mitigation if disturbance or destruction is unavoidable. Management prescriptions for sites not eligible for the NRHP will be determined on a case-by-case basis according to values involved.

An appropriate level of analysis of all BLM undertakings or authorizations will be conducted to determine eligibility of sites for listing on the NRHP. Analysis will also determine potential effects to those historic properties in accordance with the National Historic Preservation Act. Incidences of potential violation of the ARPA will be investigated.

The BLM will cooperate with the National Park Service to implement the Oregon/Mormon Pioneer National Historic Trails Management Plan. The area within 1/4 mile or the visual horizon (whichever is less) of any contributing trail segment will be an avoidance area for surface disturbing activities. Developments such as roads, pipelines, and power lines may be allowed to cross trails in areas where previous disturbance has occurred and the trail segment has lost the characteristics contributing to its National Register significance. Motorized vehicles, such as those used for geophysical exploration, or large heavy vehicles such as buses used in recreational tours, could cross and drive down the trails, provided a site-specific analysis determines that no adverse effects will occur. Geophysical activities such as shotholes, blasting, and vibroseis locations could be allowed, provided they are at least 300 feet from the trail, do not occur directly on the trail, and a site-specific analysis determines that visual intrusions and adverse effects will not occur. No blading will be allowed on any historic trail unless necessary to protect life or property. Historic trails are not available for use as industrial access roads (e.g., oil and gas drilling access roads and haul roads for heavy truck traffic).

The Parting-of-the-Ways historical site will be protected by closure to exploration and development of locatable and salable minerals and pursuit of a withdrawal from mineral location. An existing 40-acre mineral location withdrawal in the area will be retained. The site will be managed under the Oregon/Mormon Pioneer National Historic Trails Management Plan.

Management of historic roads and trails eligible for the NRHP but not Congressionally designated will generally be the same as for designated trails, including a 1/4 mile protective setback on either side of the trails. These trails may be recommended for listing in the National Register of Historic Places. These trails include the Overland Trail, the Cherokee Trail, and the Point of Rocks to South Pass Road. LaCledé Stage Station and Dug Springs Stage Station on the Overland Trail will be protected as exclusion areas and will be closed to surface disturbance that could adversely affect the sites. These sites will be closed to exploration and development of locatable minerals and entry under the land laws, and withdrawals will be pursued. Cultural resource management plans may be written for these sites, and interpretive and visitor management would be allowed as necessary.

Five significant rock art sites and surrounding viewsheds (within 1/2 mile) will be managed to protect their cultural and historical values. Surface disturbance and visual intrusions will be prohibited in these areas if they would adversely affect these values. Management of visitor use at rock art sites may include interpretive signing, fencing, barriers, and other features. The Cedar Canyon, LaBarge Bluffs, Sugarloaf, Tolar, and White Mountain rock art sites are exclusion areas, and are closed to surface disturbance that could adversely affect rock art resources. These sites are closed to:

- 1) The location of mining claims and entry under the land laws (withdrawals will be pursued as necessary and the existing Sugarloaf and White Mountain withdrawals will be retained);
- 2) Mineral material sales for sand, gravel, or other types of construction materials;
- 3) The use of explosives and blasting; and
- 4) The use of fire retardant chemicals containing dyes.

The Tri-Territory Marker is an exclusion area closed to surface disturbance and exploration and development of locatable minerals. A withdrawal will be pursued. The site will be considered for features such as fencing, interpretive signs, or barriers to ensure protection of the area. A cultural resource activity plan may be prepared for the site, if necessary.

Archeological data will be synthesized in the Little Colorado Desert, Greater Nitchie Gulch, and Wamsutter Arch concentrated oil and gas development areas, and the areas will be managed to facilitate surface disturbance without sacrificing significant archeological values. These areas may be eligible for listing on the NRHP because of their scientific information content (e.g., Criterion D). A programmatic memorandum of agreement would be negotiated with the State Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation (ACHP) to achieve this objective. Historic resources with potential listing eligibility for reasons other than their scientific information content (e.g., Criteria A, B, or C), may not be managed according to this prescription.

Playa lake areas with high cultural site density would be managed as historic districts. Management prescriptions for surface disturbance in playa lake areas will be developed on a case-by-case basis. A programmatic memorandum of agreement for data recovery with the SHPO and ACHP would also be pursued. Each playa may be managed as an NRHP-eligible historic district (Blue Forest, Blue Point, and Adobe Town Rim).

The Pine Springs ACEC (6,030 acres) is closed to surface disturbance. About 2,000 acres in the area will be closed to exploration and development of locatable minerals and entry under the land laws. Withdrawal from these activities will be pursued. The existing 90-acre withdrawal will be retained. Cultural resource management plans may be written for the site, and interpretive and visitor management efforts may be allowed.

Consultation with appropriate Native American tribes regarding areas of concern for traditional cultural purposes will be in accordance with the American Indian Religious Freedom Act and BLM Manual 8160-1 Handbook. Native American consultation would occur within the context of specific development proposals, but would also be ongoing between BLM and affected Indian tribes and traditional cultural leaders.

Interpretive materials will be prepared describing the cultural resources of the area, their significance, and BLM's responsibility to manage them. Historical aspects of BLM programs will be interpreted as appropriate for public appreciation. Exchanges for acquisition and cooperative agreements will be pursued to enhance management of cultural resources.

Management needs for other cultural sites will be determined on a case-by-case basis according to their resource values.

Significant paleontological resources will be managed for their scientific and educational values and in accordance with 43 CFR 3600, 43 CFR 3622, and 43 CFR 8365.

Collecting of vertebrate fossils may be allowed with written authorization, which may be issued only to an academic, scientific, governmental, or other qualified institution or individual. Collection of common invertebrate fossils and petrified wood for hobby purposes is allowed on public lands and is regulated under 43 CFR 3600, 43 CFR 3622, and 43 CFR 8365. A site protection plan may be written and implemented for the Farson Fossil Fish Beds.

Surface disturbance that affects known vertebrate fossil localities will be considered in site-specific analyses and potential adverse effects will be mitigated. At the Area Manager's discretion, mitigating measures may be required for surface disturbance occurring in areas where there may be scientifically significant fossils. Mitigation measures may include surface inventory, construction monitoring, excavation/salvage, or other measures considered to be reasonable and appropriate by the Area Manager. Operators are required to report any paleontological resources discovered during the course of operations.

The Steamboat Mountain and Boars Tusk-Killpecker Sand Dunes areas will be managed to protect the unique geological and ecological features and to provide for public interpretation of these features. The road around Boars Tusk is closed. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

There are no known blowout penstemon populations in the Rock Springs FO (**Map 1**). Actions associated with cultural, natural history, and paleontological resource management may affect potential habitat for the blowout penstemon by excavating soils and removing or trampling vegetation in areas where management actions are implemented. These potential impacts depend on several factors including the number of people involved with each field effort, the time of year, duration of field activities, and use of heavy machinery versus hand tools. Disturbance to blowout penstemon habitat is possible only if large-scale excavation takes place. In addition, the areas considered to provide potential habitat to the blowout penstemon (Boars Tusk-Killpecker Sand Dunes areas) are being managed to protect unique ecological features (BLM 1997).

## Determination

Implementation of cultural, natural history, and paleontological resource management actions, as presented in the Green River RMP (BLM 1997), may affect, but is **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the low likelihood that management actions would take place in potential habitats and because no known blowout penstemon populations are found within the Rock Springs FO.

## Fire Management

### Management Actions

The objectives of fire management in the Green River RMP (BLM 1997) are to use prescribed fire to help meet multiple-use resource management goals; and provide cost-effective protection from wildfire to life, property, and resource values.

Wildfire suppression will emphasize appropriate management response. Immediate control actions will be used only in cases of arson, direct threat to public safety, or a strong potential to threaten structural property. Fire suppression will be based on achieving the most efficient control and allowing historical acres burned to increase. Activity plans will be developed for designated fire management areas defining specific parameters for all fires.

Ambient air quality standards will be maintained during prescribed fire operations. Heavy equipment or actions causing surface disturbance will be used only after a site-specific analysis has been performed and approved. Activities that cause surface disturbance will be considered on a case-by-case basis. Priority areas for wildfire suppression will be identified in fire management plans for the FO. A site-specific analysis will be prepared for sensitive areas, such as special status plant species, cultural sites, historic trails, and ACECs to determine the appropriate suppression. Use of chemical fire suppression agents is prohibited in rock art sites. Generally, use of chemical fire suppression agents is prohibited in special management areas, unless a wildland fire situation analysis is completed or an activity plan for the special management areas identifies chemical suppression agents as appropriate. Wildfires occurring in forests will be appropriately suppressed in accord with resource values threatened, as determined on a case-by-case basis. Wildfires occurring in or directly threatening a developed or active timber sale will receive priority suppression control. Non-commercial timber stands may be included in prescribed fire activities. Standard management practices such as pile and broadcast burning may be permitted in all forested areas. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

Wildland fires are not expected to directly impact the blowout penstemon because its habitat typically occurs in steep, sparsely vegetated sand dunes. Furthermore, a natural disturbance such as fire is thought to enhance the blowout penstemon habitat by removing sand-stabilizing vegetation. Fire management, particularly actions associated with prescribed fire, has the potential to improve blowout penstemon habitats. Implementation of some fire-control policies may reduce the incidents of wind erosion, resulting in a loss of blowout penstemon habitat (Fertig 2001b). Blowout penstemon habitats could be altered from the equipment and resources used to fight fire. However, heavy equipment or actions that cause surface disturbance will be used only after a site-specific analysis has been performed and approved (BLM 1997).

## Determination

Implementation of fire management actions, as presented in the Green River RMP (BLM 1997), may affect, but is **not likely to adversely affect** the blowout penstemon due to **discountable effects**. This determination is based on the low potential for fires to occur in potential habitat for the blowout penstemon and the low probability that fire equipment would be used in an area that contains blowout penstemon. In the rare event of a wildfire and immediate suppression is required in occupied blowout penstemon habitat, 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 blowout penstemon habitat is affected/impacted.

## Forests and Woodlands Management

### Management Actions

The objectives of forests and woodlands management are to:

- Provide for healthy forest resources and meet multiple resources objectives (e.g., improved watershed, soils, recreation, and wildlife habitat values);
- Maintain and enhance biological diversity;
- Provide a long-range view of desired plant community concepts at the landscape level;
- Identify areas of old growth; and
- Provide for production of forest products in balance with these other resource management objectives in commercial forests.

The FO is divided into four compartments for timber management: Wind River Front, Pine Mountain, Little Mountain, and Hickey Mountain-Table Mountain. Hickey Mountain-Table Mountain will be managed as described in the woodland prescriptions. The Wind River Front is a restricted forest management area where resources will be managed for commercial forest values, to improve the health, vigor, and diversity of forest stands, and will still give full consideration to other resource values such as watershed, wildlife, minerals, recreation, and scenic values. Pine and Little Mountain areas will be managed to enhance and benefit other resource uses. Priority for timber harvesting will be given to mature, decadent, and diseased trees.

Where possible, and within RMP objectives, timber compartments (commercial and woodland forest lands) will be managed to meet the local demand for minor forest products (e.g., fuel wood, posts and poles, wildlings, and Christmas trees). The major consideration for timber harvesting in the Wind River Front is to improve the condition of the forest stand with emphasis on meeting wildlife habitat needs. The major consideration for harvesting in other areas is to provide watershed stability and habitat for wildlife needs. Soil, watershed, and wildlife cover are important considerations. Timber stand and management considerations will dictate harvest methods and size and shape of units.

Clearcutting is not allowed within 100 feet of drainages or standing and flowing waters. Other logging activity, such as thinning or cable logging, could occur within the 100-foot zone if other resource values will not be adversely affected. Timber harvesting will be restricted seasonally, as appropriate, to protect big game wintering and parturition, grouse (sage, sharptail, etc.) strutting and nesting, and raptor nesting. Approximately 1,436 acres of commercial timber within big game winter ranges are closed to logging, usually from November 15 to April 30. If the logging unit encompasses big game parturition habitats, the area is closed to timber harvest, usually from May 1 through June 30. There will be no logging within grouse or raptor nesting sites usually from February 1 to July 31.

Timber harvest activities will be designed to protect water quality. A 500-foot buffer from standing or flowing water, floodplains, and riparian/wetland areas will be applied to surface disturbance (e.g., road construction), unless impacts to soils, watershed, water quality, and fisheries can be mitigated. No surface disturbance is allowed within 100 feet of the edge of the inner gorge of intermittent and large ephemeral drainages, without an approved plan to mitigate impacts to water quality. Linear crossings will be considered on a case-by-case basis.

Commercial conifer stands will be managed under the guidelines for suppression of wildfires. Aspen and juniper stands will be open to prescribed fire to enhance watershed and wildlife values. Habitat fragmentation will be prevented if it has a negative ecological effect. Special management areas (old growth, scientific research areas) will be identified and appropriate management incorporated into activity plans. Woodland Forests, such as Juniper, Aspen, and Limber Pine Woodland, will be managed using silvicultural practices that promote stand viability. Treatments could include thinning, harvesting, chaining, and burning. The vegetative byproduct of these treatments will normally be sold through public demand sales. Woodland forest acreage will be maintained. Treatments may be implemented that influence successional stages, but such treatments will not permanently convert the areas to another vegetation type. Old aspen stands may be replaced by stands of sprouting aspen through various treatment methods (e.g., burning). Old, decadent trees may be left standing or downed to provide habitat for wildlife, and juniper stands may be replaced where they encroach into other vegetation types. Silvicultural treatments in mature timber stands will be designed to improve wildlife habitat and watershed condition, i.e., create small openings to provide forage for wildlife and accumulate snowdrifts to increase moisture. Cottonwood trees are not available for harvesting. Firewood cutting for camping will be limited to designated areas (this mainly applies to the area surrounding developed recreation sites).

The major considerations for timber harvesting in the Wind River Front are to improve the condition of the forest stand with emphasis on meeting wildlife habitat needs. The major management consideration for the other timber compartments is to provide watershed stability and habitat for wildlife. Timber harvesting will be restricted seasonally, as appropriate, to protect big game wintering and parturition, sage and sharp-tailed grouse strutting and nesting, and raptor nesting. Cottonwood trees will not be available for harvesting. Firewood cutting for camping will be limited to designated areas. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

Forest and woodlands management are principally restricted to stands of coniferous trees. Conversely, blowout penstemon plants are typically associated with steep slopes and sparsely vegetated sand dunes. These habitats are mutually exclusive, with blowout penstemon habitat distinct from those targeted for forest management actions. Therefore, potential blowout penstemon habitats are not expected to experience any detrimental effects or impacts as a result of forest management.

## Determination

Implementation of forest management actions, as presented in the Green River RMP (BLM 1997), will have **no effect** on the blowout penstemon. This determination is based on the absence of forest management areas within or near potential habitat for the blowout penstemon.

## Hazardous Materials and Other Hazards Management

### Management Actions

The objectives for hazardous material and other hazards management are to:

- Protect public and environmental health and safety on BLM-administered public lands,
- Comply with applicable Federal and state laws,
- Prevent waste contamination caused by any BLM-authorized actions,
- Minimize Federal exposure to liabilities associated with waste management on public lands, and
- Integrate hazardous materials and waste management policies and controls into all BLM programs.

For BLM-authorized activities involving hazardous materials, precautionary measures will be used to guard against releases or spills into the environment. If safety issues are identified as a result of hazardous waste spills on BLM-administered public lands, the BLM will provide appropriate warnings. BLM-administered public land sites contaminated with hazardous wastes will be reported, secured, and cleaned up according to applicable Federal and state regulations and contingency plans. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

No known blowout penstemon populations currently exist in the Rock Springs FO (**Map 1**). Emergency responses involving increased human presence, hazardous material releases, and the use of machinery and heavy equipment, may affect blowout penstemon habitat. These potential effects to blowout penstemon habitat would likely be extremely limited in scale relative to the abundance of other lands that could be used for this purpose throughout the Rock Springs FO. In addition, precautionary measures are taken by the BLM to guard against releases or spills. Most releases or spills are accomplished using vehicles and

potential blowout penstemon habitat in the Rock Springs FO is not open to ORV use and it would be very difficult, if not impossible, to get vehicles that carry hazardous materials into potential blowout penstemon habitat.

## Determination

Implementation of hazardous materials management actions, as presented in the Green River RMP (1997), but is **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the extremely low likelihood that releases of hazardous materials and subsequent response actions will impact potential blowout penstemon habitat.

## Lands and Realty Management

### Management Actions

The objectives of lands and realty management are to:

- Manage the public lands to support the goals and objectives of other resource values,
- Respond to public demand for land authorizations, and
- Acquire administrative and public access where necessary.

Lands and realty management is divided into five groups: land ownership adjustments, utility/transportation systems, withdrawals/classifications, desert land entries, and access. Public lands will be retained in Federal ownership, with the exception of those that have potential for disposal. The preferred method of disposal and acquisition will be by land exchanges. Other lands will be considered for disposal on a case-by-case basis. Acquisition of lands will be considered to facilitate various resource management objectives. Land exchanges are considered discretionary and voluntary real estate transactions between parties. Unauthorized uses within the FO will be resolved. If circumstances warrant, a permit, lease, or right of way (ROW) authorizing use could be issued as a means of resolving trespass. Disposal of the parcel through sale or exchange may be considered to resolve long-standing trespasses.

Public lands will be made available throughout the FO for rights of way, permits, and leases. The FO, with the exception of defined exclusion and avoidance areas, will be open to the consideration of granting rights of way. Right of way corridors will not be designated due to the predominant checkerboard private land pattern in the FO. Areas are designated for avoidance or exclusion to rights of way where these uses are incompatible with management of sensitive resources or would have unacceptable impacts. Areas designated as utility windows, rights of way concentration areas, and existing communication sites will be preferred locations for future grants.

Withdrawals no longer serving the purpose for which they were established will be revoked. Prior to revocation, withdrawn lands will be reviewed to determine if any other resource values require withdrawal protection. The Multiple Use Management Classification, as it affects public lands in the FO (200 acres), will be revoked. Public Water Reserves will be acquired where needed and terminated where no longer needed.

No BLM-administered public lands within the FO are available for agricultural entry under Desert Land Entry (43 CFR 2520) due to one or more of the following factors: unsuitable soils, salinity contributions into the Colorado River System, lack of water supplies, rugged topography, lack of access, small parcel size, and presence of sensitive resources.

Access to public lands will be provided throughout the FO. Where necessary and consistent with ORV designations, access will be closed or restricted in specific areas to protect public health and safety, and to protect significant resource values (see ORV Management discussion). Easements will be pursued where practical, to provide access to public lands for recreational, wildlife, range, cultural/historical, mineral, special management area, and other resource management needs (about 300 acres). No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for these activities in the RMP.

## Effects Analysis

Direct effects to the blowout penstemon are not expected because there are no known blowout penstemon populations in the Rock Springs FO (**Map 1**). It is not likely that new utility systems would be sited in potential habitats because steep slopes and unstable substrate would likely be avoided. Lands and realty management is not expected to negatively impact blowout penstemon plants or habitats. Lands not under BLM jurisdiction that are potential habitats for blowout penstemon may be targeted for acquisition and subsequent management by BLM. Such acquisitions would benefit habitats for the blowout penstemon by providing protections that may not be afforded under non-Federal ownership.

## Determination

Activities associated with land and realty management, as presented in the Green River RMP (BLM 1997), may affect, but are **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the low likelihood that land resource management actions would take place in known populations of the blowout penstemon. Land acquisition and withdrawal actions may have secondary **beneficial effects** to the blowout penstemon by maintaining or acquiring potential habitats, although none are planned under the Green River RMP (BLM 1997).

## Livestock Grazing Management

### Management Actions

The objectives of livestock grazing management are to:

- Improve forage production and ecological conditions for the benefit of livestock use, wildlife habitat, watershed, and riparian areas;
- Maintain, improve, or restore riparian habitat to enhance forage conditions, wildlife habitat, and stream quality; and
- Achieve proper functioning condition or better in riparian areas.

Authorized grazing will not exceed the recognized permitted active AUMs. Public lands will be made available for livestock grazing while considering the needs of other resources. The types and seasons of livestock grazing will continue to be licensed until monitoring, negotiation, consultation, or change in resource conditions indicate that a modification is needed. Monitoring will be continued or initiated following adjustments in grazing to assure that grazing and other management objectives are being met. Allotments are classified into three selective management categories: improve (I), maintain (M), and custodial (C). Livestock grazing will be managed on 31 I category allotments, 18 M category, and 29 C category Allotments. One allotment may not be categorized.

Interdisciplinary monitoring studies will be conducted at a level sufficient to detect changes in grazing, trend, and range conditions, and to determine if vegetation objectives will be met for all affected resource values (livestock grazing, wild horses, wildlife, watershed, etc.).

The Palmer Draw area (970 acres) and special management enclosures are closed to livestock grazing. AUMs currently authorized in these areas will be suspended. All developed and some semi-developed recreation areas are closed to livestock grazing and will be fenced to reduce conflicts between uses. Authorized grazing preference may be reduced in areas with excessive soil erosion and poor range condition, if allotment evaluation warrants change, or to provide forage for wildlife, wild horses, and recreation. Management will be implemented in “I” category allotments to maintain or improve wild horse, wildlife, watershed, vegetation, and soils resource conditions. Management in “M” category allotments will be directed toward maintenance of resource conditions. Management in “C” allotments will be directed toward monitoring resource conditions. All AMPs will incorporate desired plant community and riparian objectives where such resources exist. Grazing systems will be designed to maintain or improve plant diversity and will be implemented on all I category allotments.

Site-specific analyses will be conducted where necessary to help determine how to alleviate conflicts among wildlife use, livestock grazing, and development. Unallotted forage on public lands will be appropriately allocated to wildlife, wild horses, livestock grazing, and for watershed improvement on a case-by-case basis. Salt or mineral supplements for livestock are prohibited within 500 feet of water, wetlands, or riparian areas unless analysis shows that associated values would not be adversely affected. Salt or mineral supplements are prohibited in areas inhabited by special status plant species or other sensitive areas. Range improvements will be directed at resolving or reducing resource concerns, improving wetland/riparian areas, and improving vegetation/ground cover.

Water sources may be developed in crucial wildlife winter ranges only when consistent with habitat needs. Such sources will be designed to benefit livestock, wild horses, and wildlife. Alternative water supplies or facilities for livestock may be provided to relieve livestock grazing pressure along stream bottoms and improve livestock distribution. Construction of fences may be considered to meet management objectives. Fence construction in big game use areas and known migration routes will require site-specific analysis. Fences on public lands will be removed, modified, or reconstructed if documented wildlife or wild horse conflicts occur. Requests for conversions of types of livestock and changes in seasons of grazing will be considered on a case-by-case basis through environmental analysis. Noxious weed infestations will be controlled through livestock management or by environmentally acceptable mechanical, chemical, or biological means. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

Livestock grazing or associated activities may have a detrimental affect on blowout penstemon or its habitat. Direct effects to the blowout penstemon are not expected because there are no known blowout penstemon populations in the Rock Springs FO (**Map 1**). Improvements to grazing allotments intended to increase available forage, including use of heavy equipment and alteration of existing vegetation composition, may detrimentally impact blowout penstemon habitats, especially if improvements occurred near or within known blowout penstemon populations. Fencing, changes in livestock seasons of use or type of livestock, and livestock improvement projects may affect the blowout penstemon by crushing or removal of individual plants. Blowout penstemon is edible to cattle and horses, but is not preferred forage if other vegetation is available. However, livestock grazing is unlikely to occur in the sparsely vegetated, shifting sand, and steep slopes of blowout penstemon habitat, does occur to a small extent on areas currently occupied by blowout penstemon in Wyoming. Wildlife is the primary herbivore, eating the upper stems and flowers. Livestock trampling damage is typically not significant because of the plant’s sparse distribution and its shifting substrate, although livestock may step on and crush a few individual plants or consume them along with other more preferred plant species. Though individual plants may be damaged, and the fitness of the plants may be affected for the season, the plants usually recover and the overall population is minimally affected. Livestock passing through blowout penstemon

habitat may also spread the seeds of invasive species through excrement. Infrequent grazing in blowout penstemon habitats may be beneficial to the plants by reducing competing vegetation (Fertig 2001b), although individual blowout penstemon plants will also be grazed. Livestock grazing is not excluded from potential blowout penstemon habitat though fencing or other actions, so livestock are able to access the blowout penstemon plants. Fencing of blowout penstemon habitat is very difficult due to the movement of the sand dunes that comprise the plant's habitat, the impracticality of trying to build fences on a sand substrate, and the difficulty of maintaining fences as blowing sands cover them, making them inoperable and blowing over the fences and pulling off wires. Fencing of blowout penstemon habitat is thus an impracticable task. BLM intends to continue grazing activities along with surveying for the blowout penstemon.

## Determination

Activities associated with livestock grazing management, as presented in the Green River RMP (BLM 1997), may affect, but are **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the absence of blowout penstemon within the Rock Springs FO and low likelihood that livestock grazing management actions would take place in blowout penstemon habitat. The principal impact by livestock grazing in the Rock Springs FO is on potential blowout penstemon habitat. Infrequent grazing in blowout penstemon habitats may have some secondary **beneficial effects** by reducing competing vegetation.

## Minerals Management

### Management Actions

The objective of minerals management is to maintain or enhance opportunities for mineral exploration and development while protecting other resource values. Public lands within the checkerboard areas of landownership are open to mineral leasing and development (to promote mineral resource recovery) with impact minimization measures to be applied on a case-by-case basis.

BLM-administered public lands not specifically closed are open to consideration for oil and gas leasing. Public lands closed to leasing include lands within the Red Creek ACEC and portions of the Wind River Front, the remainder of the public lands in the FO are open to consideration for oil and gas leasing with appropriate impact minimization measures. Where maximum protection of resources is necessary, a No Surface Occupancy requirement will be imposed. Timing limitations (seasonal restrictions) will be applied when activities occur during crucial periods or would adversely affect crucial or sensitive resources. Such resources include, but are not limited to, soils during wet and muddy periods, crucial wildlife seasonal use areas, and raptor nesting areas. Where controlled use or restrictions are needed but do not necessarily exclude activities, controlled surface use or surface disturbance restrictions will be designed to protect those resources. These restrictions will be placed on areas where resources could be avoided or adverse effects could be minimized. To the extent that laws and regulations allow, areas closed to oil and gas leasing will remain closed unless drainage results in a loss of Federal minerals through production on adjacent private or state lands (drainage).

Geothermal resources are open to leasing consideration in areas open to oil and gas leasing consideration. Areas closed to oil and gas leasing are also closed to geothermal leasing. Exploration and development of geothermal resources are subject to application of mitigation requirements for surface disturbance and other activities in the same manner as they are applied to oil and gas exploration and development activities.

With appropriate limitations and impact minimization requirements for the protection of other resource values, all BLM-administered public lands and Federal coal lands managed under the Green River RMP (BLM 1997), except closed lands, are open to coal resource inventory and exploration.

The Coal Occurrence and Development Potential area is subject to continued field investigation, study, and evaluation to determine if certain methods of coal mining can occur without having a significant long-term impact on wildlife, cultural, and watershed resources, threatened and endangered plant and animal species, and their essential habitats. Such investigations, studies and evaluations may be conducted on a case-by-case basis while reviewing individual coal leasing or development proposals (e.g., mine plans), or area-wide studies may be conducted. These studies include maintaining resource databases (e.g., where existing raptor nests are abandoned or where new raptor nests are established), analysis of effects to wildlife and threatened and endangered species habitats and populations, and the cumulative effects of mining operations and other activities in the area. Consultation with other agencies (e.g., USFWS, WGFD), interested parties, and industry, will occur as needed.

Big game crucial winter ranges and birthing areas are open to further consideration for Federal coal leasing and development with a provision for maintaining a balance between coal leasing and development to prevent significant adverse impacts to important big game species. This will be accomplished through controlled timing and sequencing of Federal coal leasing and development in these areas.

The greater Cooper Ridge and Elk Butte areas are open to further consideration for Federal coal leasing and development, pending further study (about 25,368 acres). This study will define the extent of any deer and antelope crucial winter range in the area, and determine if certain methods of coal mining can occur in the area without having a significant long-term impact on the deer and antelope herds.

For the protection of important rock art sites, other important cultural resource values, and important geologic and ecologic features, Federal coal lands with these values are open to consideration for further leasing and development by subsurface mining methods only.

In general, cultural sites on Federal coal lands are avoidance areas for surface disturbance. As avoidance areas, cultural sites are open to consideration for coal leasing and development with appropriate measures to protect these resources. Surface disturbance associated with such actions as surface coal mining, exploration drilling, construction and location of ancillary facilities, roads and other types of rights of way, etc., will be avoided, if possible. In cases where it is not possible to avoid these areas, thorough minimization of surface disturbances (primarily excavation and other data recovery measures) will be emphasized.

Active grouse leks (sage and sharptail grouse) and the area within a 1/4 mile radius of active leks are avoidance areas for surface disturbance and are open to consideration for Federal coal leasing and development with the following stipulations:

- Surface disturbance associated with such actions as surface coal mining, exploration drilling, construction of roads and other types of rights of way, etc., will be avoided in these areas, if possible. In cases where it is not possible to avoid these areas, thorough minimization of surface disturbances will be emphasized.
- Permanent and high-profile structures, such as buildings, overhead powerlines, and other types of ancillary facilities, are prohibited in these areas.

- During the grouse mating season, surface uses and activities are prohibited between the hours of 6:00 p.m. and 9:00 a.m., within a 1/2 mile radius of active leks (i.e., those leks occupied by mating birds).

Wetland and riparian areas on Federal coal lands are avoidance areas for surface disturbance and are open to consideration for coal leasing and development with the following stipulations: surface disturbance associated with such actions as surface coal mining, exploration drilling, construction of ancillary facilities, roads and other types of rights of way, etc., will be avoided in these areas, if possible. In cases where it is not possible to avoid these areas, thorough minimization of surface disturbing activities will be required.

Most of the FO is open to consideration of mineral material sales and activity except for areas where such activity would cause unacceptable impacts. As sale areas, community pits, and localized common use areas are established to provide for sales of mineral materials, such as moss rock and sand, their use and management will conform with other resource objectives.

With the exception of lands withdrawn from mineral location, the FO is open to filing of mining claims and exploration for and development of locatable minerals.

The mineral classification withdrawals in the FO (phosphate, coal, oil shale) will be revoked. In some areas, these withdrawals will remain in effect until replaced with an appropriate withdrawal for other, appropriate purposes (see Special Management Area section). Other withdrawals from mineral location will be pursued to protect important resource values.

Most of the FO is open to consideration of geophysical activities except where off-road vehicle use or explosive charges would cause unacceptable impacts. Geophysical activities will generally be required to conform to the ORV designations and ORV management prescriptions for the FO. However, geophysical exploration has been and will continue to be routinely granted site-specific authorization for off-road vehicle use, subject to appropriate limitations, to protect resources identified during analysis of proposed actions.

Geophysical activities will be restricted or prohibited within 1/4 mile or visual horizon of historic trails (whichever is closer) to protect trail integrity. Vehicles used for geophysical exploration or similar activities could be allowed to cross and drive down historic trails, provided a site specific analysis determines that no adverse effects would occur. Generally, shotholes and vibroseis activity will be restricted or prohibited within 300 feet of historic and recreational trails; however, exceptions may be allowed if supported by a site-specific analysis. Geophysical travel through developed and semi-developed recreation sites is restricted to existing roads and trails. Geophysical exploration on sections of the Sweetwater River, identified as having potential for wild classification under the Wild and Scenic Rivers Act requirements, is limited to foot access and placement of surface cables. No motorized vehicle use is allowed in these areas. Surface charges may be allowed if a site-specific analysis determines that no adverse impacts to river values would occur. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for these activities in the RMP.

## Effects Analysis

Direct effects to the blowout penstemon are not expected because there are no known blowout penstemon populations in the Rock Springs FO (**Map 1**). Construction of roads, pads, and other facilities could alter or destroy potential habitats. However, such construction is unlikely in blowout penstemon habitat because of steep slopes and unstable substrate. Increased human activity associated with nearby development of mineral resources may lead to increases in plant collection and disturbances to habitat.

All mineral and oil and gas projects are subject to specific stipulations and regulations limiting surface activities by season and proximity to specific resources. These measures may minimize unnecessary habitat disturbance.

## Determination

Implementation of energy and minerals management actions, as presented in the Green River RMP (BLM 1997), may affect, but is **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the lack of known blowout penstemon populations occurring within the Rock Springs FO, prohibitions currently in place including restricting all vehicle use to existing roads and trails and prohibiting surface disturbing activities in blowout penstemon habitat, conservation measures in place to protect the plant and its habitat, and the fact that energy and mineral development is not occurring in or adjacent to potential blowout penstemon habitat.

## Off-Road Vehicle Management

### Management Actions

The objective of ORV management is to provide opportunity for ORV use in conformance with other resource management objectives.

Areas for ORV rallies, cross-country races, and outings may be provided on a permit basis. Approximately 170,000 acres are closed to off-road vehicles to protect naturalness and outstanding opportunities for solitude, or primitive and unconfined recreation. In areas designated as “limited” to designated roads and trails or “limited” to existing roads and trails for off-road vehicle use, motorized vehicles must stay on designated or existing roads and trails, unless allowed by the authorized officer. This limitation applies to all activities involving motorized vehicles. Vehicular travel in crucial wildlife habitats and during crucial periods will be restricted seasonally, as necessary (strutting grounds, spawning beds, big game ranges, calving/fawning periods, etc.). No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

### Effects Analysis

Actions associated with recreation management have the potential to detrimentally impact blowout penstemon and its habitat although no known populations of blowout penstemon occur within the Rock Springs FO (**Map 1**). Occasional hill climbing and associated ORV activities may benefit blowout penstemon habitat by ensuring continued disturbance and erosion. However, driving directly over plants may cause a severe negative impact to populations (USFWS 1992). An additional indirect effect of this action may be the introduction of non-native plants if ORV users carry seeds into the area unintentionally. The Green River RMP (BLM 1997) directs that most of the Rock Springs FO is not subject to open ORV use. ORV use in the FO is best characterized as limited in frequency and intensity. The present ORV designations allowed in the Green River RMP (1997) limits most ORV travel to existing roads and trails, which generally protects potential blowout penstemon habitat. ORV management and use in the Rock Springs FO is not expected to result in detrimental effects to blowout penstemon habitat.

## Determination

Implementation of recreation resource management actions, as presented in the Green River RMP (BLM 1997), may affect, but is **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the absence of blowout penstemon within the Rock Springs FO and the low likelihood that ORV activities managed by the BLM would take place in the same area as known populations of blowout penstemon. Additionally, occasional ORV activities may have secondary

**beneficial effects** to potential blowout penstemon habitat by ensuring continued disturbance and erosion, if conducted away from plant populations.

## Recreation Resource Management

### Management Actions

The objectives of recreation resource management are to:

- Ensure continued availability of outdoor recreational opportunities sought by the public while protecting other resources,
- Meet legal requirements for the health and safety of visitors, and
- Minimize conflicts between recreation and other resources.

Most public lands in the FO are open to consideration of all individual, commercial, and competitive outdoor recreation. Developed recreation sites will be managed to assure public health and safety. Undeveloped recreation sites and other recreation areas will be managed with priority consideration for air quality, cultural resources, watershed protection, wildlife values, and public health and safety. Camping is limited to 14 days within a 28-day consecutive period on all BLM-administered public lands. After the 14th day of occupation, campers must move outside a 5-mile radius of the previous location. Dispersed camping is prohibited near water sources in designated areas where necessary to protect water quality and wildlife and livestock watering areas. Camping in other riparian areas is allowed within 200 feet of water. Areas will be closed to camping if resources are damaged. Special recreation permits will be considered on a case-by-case basis.

The Continental Divide National Scenic Trail, Continental Divide Snowmobile Trail, the Green River, and the Wind River Front are designated SRMAs to enhance recreation opportunities and to focus management on areas with high recreation values or where there are conflicts between recreation and other uses. The remainder of the FO will be managed as an extensive recreation management area (ERMA).

The Wind River Front SRMA comprises all of the BLM-administered public lands north of Township 27, east of Highway 191, northwest of Highway 28, and south of the Bridger-Teton and Shoshone National Forests. To facilitate management, the area is divided into two units. The boundary between the units is the Continental Divide, and the eastern unit includes the Prospect Mountains.

The management objective emphasis for the Eastern Unit of the SRMA is for scenic, watershed, and wildlife values; recreation; riparian and vegetation resources; and to protect the Class I airshed in the Bridger Wilderness. Major facilities (including linear facilities) are generally prohibited in this unit. Some facilities could be allowed if analysis indicates that the management objectives for the unit could be met. The Eastern Unit of the SRMA is closed to mineral leasing. Surface disturbance must conform to unit management objectives. The 500 acres associated with the *Arabis pusilla* portion of the Special Status Plants ACEC, is closed to ORV use. In the remainder of the unit, ORV use is limited to designated roads and trails. Seven BLM-administered public land parcels along the Sweetwater River (involving about 9.7 miles of the river) will be managed under the Wild and Scenic Rivers Act interim management guidelines. The purpose of this interim management is to maintain or enhance the outstandingly remarkable resource values on the public lands along the river, and to maintain their suitability for inclusion into the National Wild and Scenic River Preservation System. The suitable public land parcels along the river are closed to mineral location, and withdrawal from public land laws, including mining laws, will be pursued.

The management objective emphasis for the Western Unit of the SRMA is for dispersed recreation such as camping, hunting, and fishing, with full consideration given to wildlife, cultural, vegetation, watershed values, and mineral development. This unit of the SRMA is open to mineral leasing. All activities in the unit will conform to the requirements of Class III and Class IV visual resource management classifications. All management actions will be designed and located to remain subordinate to the characteristic landscape or to repeat the basic elements (form, line, color, and texture) inherent in the characteristic landscape. Off-road vehicle use in the unit is limited to designated roads and trails. Transportation planning will be completed prior to allowing development in the unit. Linear facilities will be required to conform with the transportation plan and follow existing routes and previously disturbed areas. Surface disturbance is prohibited in the Dry Sandy Swales and the area within 1 mile of Dry Sandy Swales.

The Greater Sand Dunes ACEC is also managed as an SRMA. This SRMA provides potential habitat for the blowout penstemon. The natural values of Boars Tusk, Pilot Butte, and Emmons Cone will be protected. Surface occupancy and surface disturbance are prohibited in these areas, unless such activity would enhance management of these geologic features. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

No known populations of blowout penstemon occur within the Rock Springs FO (**Map 1**). Recreation management is not likely to detrimentally impact blowout penstemon habitats. Areas that provide potential habitat to the blowout penstemon (Boars Tusk-Killpecker Sand Dunes areas) are managed to protect unique ecological features (BLM 1997). The Greater Sand Dunes SRMA will be managed for a diversity of non-motorized recreation uses, including hiking, bird-watching, photography, sightseeing and hunting and will be encouraged. Camping and hiking activities rarely take place on the remote sand dunes making up potential blowout penstemon habitat, but if plants are found there, they could be subject to trampling or collection.

## Determination

Implementation of recreation resource management actions, as presented in the Green River RMP (BLM 1997), may affect, but is **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the low likelihood that recreation management and use would take place in the same area as known populations of blowout penstemon and conservation measures would provide protection. Additionally, blowout penstemon potential habitat is being managed to protect unique ecological features.

## Special Status Species Management

### Management Actions

The objectives of special status species management are to:

- Maintain or enhance essential habitat and prevent destruction or loss of species' communities and important habitat,
- Provide opportunities for enhancing or expanding the habitat, and
- Prevent the need for listing these species as threatened or endangered.

Special Status species are those plant and animal species proposed for listing, officially listed (threatened and endangered), or candidates for listing as threatened or endangered by the Secretary of the Interior under the provisions of the Endangered Species Act; those listed or proposed for listing by a state in a

category implying potential endangerment or extinction; and those designated by each BLM State Director as sensitive. The management actions for special status species apply only to BLM-administered public lands. Emphasizing management of these species on public lands and preventing these species from being listed as threatened or endangered would benefit all parties within the Rock Springs FO. When species are listed as threatened and endangered, by law they become more universally protected on private, state-owned lands, and Federal lands.

Management actions on potential habitat of special status plant species communities on Federal land or on split estate lands (i.e., non-Federal land surface ownership with BLM-administered Federal minerals ownership) will require searches for the plant species and associated habitat prior to project implementation. Special status plant populations are closed to activities that could adversely affect these species and associated habitat. Management in habitat areas may include prohibiting or limiting motorized vehicle use, surface uses, and explosive charges or any other surface disturbance or disruption that may cause adverse effects to the plants.

Known locations of special status plant species communities will be protected and closed to:

- 1) Surface disturbance or any disruption that could adversely affect the plants or their habitat
- 2) The location of new mining claims (withdrawal from mineral location and entry under the land laws will be pursued),
- 3) Mineral material sales,
- 4) All off-road vehicular use, including those used for geophysical exploration and surveying, and
- 5) The use of explosives and blasting.

Locations of special status plant species are open to consideration for mineral leasing with a no surface occupancy requirement. Should new special status plant species be identified, they will be managed under the same prescriptions described above for the known species. Management prescriptions for threatened and endangered species and proposed threatened and endangered species will be developed on a case-by-case basis in consultation with the USFWS. Known locations of special status species will be evaluated on a case-by-case basis to determine if they meet the relevance and importance criteria to be considered for ACEC designation. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

Management actions associated with special status species will not result in detrimental impacts to blowout penstemon or its habitat. These actions are intended to result in positive effects to special status species such as the blowout penstemon by restricting activities on potential habitat of special status plant species communities on Federal land or on split estate lands (i.e., non-Federal land surface ownership with BLM-administered Federal minerals ownership).

## Determination

Implementation of the special status species management actions, as presented in the Green River RMP (1997), may affect, but is **not likely to adversely affect** the blowout penstemon, due to **beneficial effects**. This determination is based on the potential that these actions will limit activities on potential blowout penstemon habitat.

## Vegetation Management

### Management Actions

The objectives of vegetation management are to maintain or enhance vegetation community health, composition, and diversity in order to meet watershed, wild horse, wildlife, and livestock grazing resource management objectives; and provide for plant diversity.

Riparian habitat will be maintained, improved, or restored to provide wildlife and fish habitat, improve water quality, and enhance forage conditions. Where possible, acquisition of additional riparian acreage will be pursued to enhance riparian area management. The minimum management goal for riparian areas is to achieve proper functioning condition. This is the first priority for vegetation management. Desired plant communities must meet the criteria for proper functioning condition.

Desired plant community objectives for upland and riparian areas will be established for the FO through individual site-specific activity and implementation planning, and as updated ecological site inventory data become available. All activity and implementation plans will incorporate desired plant community objectives.

Prescribed fire will generally be the preferred method of vegetation manipulation to convert stands of brush to grasslands, and to promote regeneration of aspen stands and shrub species.

Vegetation manipulation projects will be conducted to reach multiple use objectives, and will involve site-specific environmental analysis and coordination. All vegetation manipulation projects will involve site-specific environmental analysis; coordination with affected livestock operators and the WGFD; and will include multiple use objectives for resources including livestock grazing, wildlife, recreation, and watershed. Vegetation treatments will be compatible with special status plant species. For example, spraying, burning, and mechanical disturbances will not be allowed to adversely affect these plant species.

Riparian habitat in proper functioning condition is the minimum acceptable status within the Rock Springs FO. Under the Green River RMP (BLM 1997), 75 percent of the riparian areas should, within 10 years, have activity and implementation plans in various stages that will allow riparian areas to achieve or maintain proper functioning condition. Site-specific activity and implementation plans will be used to identify methods to achieve or maintain proper functioning condition in riparian areas.

The next step beyond basic proper functioning condition of riparian areas is the achievement of desired plant communities. Desired plant community objectives will be developed on riparian areas based on any of several different methods, including Ecological Site Inventory, comparison areas (areas having similar soils, aspect, vegetation, and precipitation), and estimating the structural component that can be achieved in the short term. Desired plant community objectives can be short- and long-term. These objectives take into consideration all uses of the riparian area, including livestock grazing, wildlife, recreation, fisheries, flood control, etc.

While establishing the desired plant community establishes objectives for the riparian area or upland plant community, the Desired Future Condition establishes goals for entire watersheds (or larger blocks of land) involving all activities and resources. Achieving proper functioning condition and establishing a desired plant community are integral steps in the process of establishing and achieving the Desired Future Condition of an area. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

Direct effects to the blowout penstemon are not expected because no known blowout penstemon populations currently exist in the Rock Springs FO (**Map 1**). Actions associated with vegetation management, including increased human presence and use of machinery or fire may detrimentally affect potential blowout penstemon habitat. However, the potential for these effects is low and the intensity is not expected to have lasting detrimental effects. Most vegetation management is planned for riparian areas. These areas are not considered potential blowout penstemon habitat. In addition, vegetation management, particularly actions associated with prescribed fire, has the potential to improve blowout penstemon habitats.

## Determination

Implementation of recreation resource management actions, as presented in the Green River RMP (BLM 1997), may affect, is **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the extremely low likelihood that vegetation management activities would take place in the same area as known populations of blowout penstemon. Additionally, occasional vegetation management actions, such as prescribed fire, may have secondary **beneficial effects** to potential blowout penstemon habitat.

## Visual Resource Management

### Management Actions

The objectives of VRM are to maintain or improve scenic values and visual quality, and establish priorities for managing visual resources in conjunction with other resource values.

Visual resource classes will be retained or modified to enhance other resource objectives, such as those for cultural resource and recreation management, wild horse viewing, and special management areas. Projects and facilities will be designed to meet the objectives of the established visual classifications and include appropriate impact minimization. Facilities, including linear rights of way, etc., must be screened, painted, or designed to blend with the surrounding landscape.

Management actions on public lands with a Class II visual resource management classification must be designed to blend into and retain the existing character of the natural landscape. Management actions on public lands with a Class III visual resource management classification must be designed to partially retain the existing character of the landscape. Management actions on public lands with a Class IV visual resource management classification could result in major modification of the character of the landscape. All surface disturbances, regardless of the visual resource management class, are required to be mitigated for reduced visual impacts. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

Actions associated with VRM will not directly impact blowout penstemon or its potential habitat. The exclusion of some activities and structures from designated viewsheds may have a positive effect of limiting disturbance to potential blowout penstemon habitats. VRM activities are reactive in nature, requiring an authorized action to meet certain criteria and are not actions in and of them self.

## Determination

Implementation of VRM actions, as presented in the Green River RMP (BLM 1997), may affect, is **not likely to adversely affect** the blowout penstemon, due to **beneficial effects**. This determination is based

on the potential that implementation of these actions may preserve or minimize disturbance to potential blowout penstemon habitats.

## **Watershed/Soils Management**

### **Management Actions**

The objectives of watershed and soils management are to:

- Stabilize and conserve soils;
- Increase vegetation production;
- Maintain or improve surface and groundwater quality; and
- Protect, maintain, or improve wetlands, floodplains, and riparian areas.

Land uses and surface disturbance will be designed to reduce erosion and maintain or improve water quality. Management in damaged wetland and riparian areas will be directed toward restoration to pre-disturbance conditions. Associated measures may include ensuring that stream crossings are constructed during normal stream flows, not during high or peak flows when additional sediment from construction could be swept into the stream; and ensuring water discharges meet appropriate standards.

Management in the FO will emphasize:

- Reduction of sediment, phosphate, and salinity load in drainages where possible;
- Maintaining and improving drainage channel stability; and
- Restoring damaged wetland areas.

Areas where soils are highly erodible or difficult to reclaim will receive increased attention, and are avoidance areas for surface disturbing activities. Surface disturbance could be allowed in these areas if site-specific analysis determines that soil will not be degraded and that water quality will not be adversely affected.

Surface disturbance and construction (e.g., mineral exploration and development activities, pipelines, powerlines, roads, recreation sites, fences, wells, etc.) that could adversely affect water quality and wetland and riparian habitat, will avoid the area within 500 feet of 100-year floodplains, wetlands, or perennial streams and within 100 feet of the edge of the inner gorge of intermittent and large ephemeral drainages. Proposals for linear crossings in these areas will be considered on a case-by-case basis. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for these activities in the RMP.

### **Effects Analysis**

Direct effects to the blowout penstemon are not expected because there are no known blowout penstemon populations in the Rock Springs FO (**Map 1**). Management of watersheds and soils may detrimentally impact potential blowout penstemon habitat. Management that increases vegetation production and stabilizes and conserves soils may negatively affect potential blowout penstemon habitat. These impacts depend on several factors, including the number of people involved with each field effort, the time of year, duration of field activities, and the use of heavy machinery versus hand tools. Conversely, areas containing highly erodible soils, which are common in blowout penstemon habitat, are avoidance areas for surface disturbance. This may result in beneficial effects to potential blowout penstemon habitat.

**Soil Resources Management:** The implementation of soils management involves planning for actions that will alleviate soil erosion and modifying others to avoid soil erosion. There are no impacts from this management action on blowout penstemon habitat. However, activities associated with soil mapping/sampling may include surveying, core drilling, use of pick-up truck mounted soil augers and core samplers (1 ½” 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 conducted. 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. Other surface disturbing 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. These types of soil analysis are not generally conducted on the large sand dunes associated with blowout penstemon.

**Water Resources Management:** 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 (re-contouring 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.).

The above types of actions associated with watershed management actions are infrequent, small in scale, would take place very rarely, if at all within any blowout penstemon habitat and would likely have minimal or no negative impacts on blowout penstemon habitats. Overall, actions associated with watershed management are likely to improve habitat for the blowout penstemon.

## Determination

Management of soil, water, and air resources is not expected to detrimentally impact the blowout penstemon and its habitat. Resource management generally precludes surface disturbance in unstable areas such as blowout penstemon habitat. Slope restrictions for surface development will assist in maintaining and protecting potential habitats for blowout penstemon. These restrictions may result in beneficial effects on blowout penstemon and its habitat. Actions associated with soil, water and air resource management, such as monitoring lakes or ponds for evidence of acid rain, monitoring streams for soil erosion or chemical pollutants, or measuring snow depth to determine precipitation amounts, conducting soil surveys, etc., are non-impacting or beneficial in protecting and maintaining blowout penstemon habitat. Conducting a soil survey would be a short duration effort with minimal impacts. Watershed improvements are more intrusive and would have more impacts, but would generally not be done on shifting dunal sands.

**Soils and Water Resources Management:** Implementation of wildlife habitat management actions, as presented in the Green River RMP (BLM 1997), may affect, but is **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the low likelihood that watershed/soils management actions would adversely affect the blowout penstemon and its habitat and the Conservation Measures in place that will preclude or minimize adverse effects to the blowout penstemon or its habitat. The activities associated with these management actions are infrequent, localized or small in scale, and generally not likely to occur in penstemon habitat. Implementation of soil and water resource management actions may maintain or improve the condition of some habitats and therefore may result in secondary **beneficial effects** by restricting surface disturbing activities in areas containing highly erodible soils.

## Wild Horse Management

### Management Actions

The objectives of wild horse management are to:

- Protect, maintain, and control viable, healthy herds of wild horses while retaining their free-roaming nature;
- Provide adequate habitat for free-roaming wild horses through management, consistent with principles of multiple use and environmental protection; and
- Provide opportunities for the public to view wild horses.

Wild horses will be managed within five Wild Horse Herd Management Areas. These are the White Mountain, Divide Basin, Adobe Town, Salt Wells, and Little Colorado Wild Horse Herd Management Areas. An appropriate management level of 1,105 to 1,600 wild horses will be maintained among the five herd management areas.

The site-specific activity plans for the five wild horse herd management areas in the FO will be maintained to conform with RMP objectives for vegetation management. Specific habitat objectives for herd management areas will be developed. Water developments will be provided, if necessary, to improve herd distribution and manage forage utilization. Water developments on crucial winter ranges could be allowed if they conform with wildlife objectives and do not result in adverse impacts to the crucial winter range. Wild horse herd management will be directed to ensure that adequate forage (about 17,400 AUMs) is available to support appropriate management levels in the herd units and that herds maintain appropriate age, sex, and color ratios. Selective gathering programs will be implemented in each of the wild horse herd management areas. Gathering plans will be prepared for removal of excess wild horses.

Other resource uses will be maintained and protected, consistent with those resource management objectives, while maintaining viable, healthy wild horse herds and appropriate herd management levels. Wild horse herd management areas will be managed in a natural, healthy state and for an ecological balance among wild horses and land and resource uses. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

Direct effects to the blowout penstemon are not expected because there are no known blowout penstemon populations in the Rock Springs FO (**Map 1**). Actions associated with wild horse management are expected to be limited to occasional herding, corralling, and transporting horses. These actions are not expected to impact potential blowout penstemon habitat. Wild horse roundup structures (e.g.; corals, fences, etc.) would not be located in blowout penstemon habitat. As mapped by Fertig (2001b), there is no blowout penstemon habitat located near any wild horse herd management areas, although significant aeolian sand deposits, the base habitat for blowout penstemon, occur in the Divide Basin and Salt Wells Creek HMAs, but no populations have been found in these HMAs. Adobe Town, Little Colorado, and White Mountain HMAs contain little aeolian sand deposits and would be expected to support a blowout penstemon population. Blowout penstemon is edible to cattle and horses, but is not preferred forage if other vegetation is available. Occasional herbivory and possible trampling by wild horses on blowout penstemon plants might take place if any populations are located within any HMAs. However, grazing, although unlikely to occur in the sparsely vegetated, shifting sand and steep slopes of blowout penstemon habitat, does occur to a small extent. Cattle and wildlife are the primary herbivores, eating the upper stems and flowers and it is suspected that wild horses would also do the same. Wild horse trampling damage is not expected to be significant because of the plant's sparse distribution and shifting, sandy substrate, although livestock do occasionally step on and crush a few individual plants or consume them along with other more preferred plant species. Though individual plants may be damaged, and the fitness of the plants may be affected for the season, the plants usually recover and the overall population is minimally affected. Wild horses passing through blowout penstemon habitat may also spread the seeds of invasive species through excrement. Infrequent grazing in blowout penstemon habitats may be beneficial to the plants because it reduces competing vegetation (Fertig 2001b), although individual blowout penstemon plants will also be grazed. Wild horse grazing would not be excluded from blowout penstemon habitat though fencing or other actions, so wild horses would be able to access the blowout penstemon plants if they occur in any HMA. BLM intends to continue managing wild horses within the five HMAs directed by the Green River RMP (BLM 1997) and plans on continuing surveys for the blowout penstemon.

## Determination

Currently, implementation of wild horse management, as presented in the Green River RMP (1997), may affect, but is **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the absence of blowout penstemon within the Rock Springs FO and the low likelihood that blowout penstemon or its potential habitat will be adversely affected by actions associated with management of wild horses.

In the event that populations of blowout penstemon are discovered in any of the HMAs in the Rock Springs FO, implementation of wild horse management, as presented in the Green River RMP (BLM 1997), may affect, and is **likely to adversely affect** the blowout penstemon, due to occasional minimal herbivory and trampling by free roaming horses. Because no fencing or other management of wild horses will keep them out of blowout penstemon habitat, wild horses would be free to graze and trample blowout penstemon plants, even though this would be expected to be extremely minimal.

## Wilderness Management

### Management Actions

The objective of wilderness management is to retain wilderness quality and manage the Wilderness Study Areas (WSAs) in the FO in accordance with the *Interim Management Policy and Guidelines for Lands Under Wilderness Review*, until Congress acts on designation.

Discretionary uses within or adjacent to WSAs will be reviewed to ensure that they do not create conflicts with management and preservation of wilderness values. Should Congress designate the WSAs in the FO (partially or wholly) as wilderness, the designated areas will be managed for wilderness values, either as described in the appropriate wilderness EIS or as directed by Congress. Should Congress not designate areas (partially or wholly) as wilderness, the management of the non-designated areas will be in accordance with the approved Green River RMP (BLM 1997) or as otherwise directed by Congress. No specific requirements or guidelines applicable for minimizing impacts to or enhancing habitat for the blowout penstemon are included for this activity in the RMP.

### Effects Analysis

Direct effects to the blowout penstemon are not expected because there are no known blowout penstemon populations in the Rock Springs FO (**Map 1**). As mapped by Fertig (2001b), there is potential habitat for the blowout penstemon within or near the Sand Dunes Wilderness Study Area. Wilderness management will not result in detrimental impacts to potential blowout penstemon habitat. These actions will result in beneficial effects to potential blowout penstemon habitat by limiting disturbance.

### Determination

Implementation of the wilderness management actions, as presented in the Green River RMP (BLM 1997), may affect, is **not likely to adversely affect** the blowout penstemon, due to **beneficial effects**. This determination is based on the potential that these actions will limit disturbance and maintain or protect potential blowout penstemon habitat.

## Wildlife Management

### Management Actions

The objectives for wildlife management are:

- Maintain, improve, or enhance the biological diversity of plant and wildlife species while ensuring healthy ecosystems;
- Restore disturbed or altered habitat with the objective to attain desired native plant communities, while providing for wildlife needs and soil stability.

The objectives for management of wetlands/riparian areas are to achieve a healthy and productive condition for long-term benefits and values in concert with range, watershed, and wildlife needs; and enhance or maintain riparian habitats by managing for deep-rooted native herbaceous or woody vegetation. The objective for management of threatened, endangered, special status, and sensitive plant and animal species is to provide, maintain, or improve habitat through vegetative manipulation, minimization measures, or other management actions including habitat acquisition and easements.

To the extent possible, suitable wildlife habitat and forage will be provided to support the WGFD 1989 Strategic Plan objectives. Changes within WGFD planning objective levels will be considered based on

habitat capability and availability and site-specific analysis. High value wildlife habitats will be maintained or improved by reducing habitat loss or alteration and by applying appropriate distance and seasonal restrictions and rehabilitation standards.

Special management and riparian management exclosures will be developed and maintained, and exclosure plans will be implemented for enhancement of wildlife habitat. Exclosures are closed to livestock grazing use, and no AUMs in these areas will be available for livestock use. Aquatic, wetland, and riparian habitat are not suitable for disposal unless opportunities exist for exchange for lands of equal or better value.

Habitat management plans will be developed, particularly for highly developed and disturbed areas, to mitigate wildlife habitat losses. Plans could include habitat expansion efforts, threatened and endangered species reintroduction, and population goals and objectives. Actions such as preparing transportation plans and reclaiming roads, seeding, and vegetation enhancement (vegetation treatments, fencing), water developments, and reclamation actions to reduce the amount of disturbance, will be considered. Areas identified for consideration of such plans include, but are not limited to, the Little Colorado Desert (including the Fontenelle II and Blue Forest units), Nitchie Gulch, Wamsutter Arch, Patrick Draw, and Cedar Canyon areas. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

Direct effects to the blowout penstemon are not expected because no known blowout penstemon populations currently exist in the Rock Springs FO (**Map 1**). Wildlife habitat management may impact potential habitats for blowout penstemon. Such 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 habitats affected. Implementation of these actions, especially those that restrict disturbance, will likely have positive effects by maintaining or improving existing habitat conditions required by blowout penstemon. Wildlife species, primarily mule deer and elk (and antelope), will eat blowout penstemon plants, usually flowering stalks. This uncontrolled browsing can be heavy during some years, removing many flowers and reducing reproductive potential. The Wyoming Game and Fish Department manages wildlife in the state and it is thus not a discretionary action by the BLM to remove these herbivores.

## Determination

Implementation of wildlife habitat management actions, as presented in the Green River RMP (BLM 1997), may affect, but is **not likely to adversely affect** the blowout penstemon due to **discountable effects**. This determination is based on the low likelihood that wildlife management actions would take place in known populations of the blowout penstemon. Additionally, implementation of these actions, especially those actions that specify restrictions on disturbance, will likely have secondary **beneficial effects** by maintaining or improving existing habitat conditions that are required by blowout penstemon.

## Special Designation Management Areas

### Management Actions

Several ACECs are identified in the Green River RMP (BLM 1997). These are each managed to achieve specific goals and objectives unique to the resource values identified within each ACEC. A detailed description of specific management goals and objectives for each ACEC is available in the Green River RMP (BLM 1997). No specific requirements or guidelines applicable for minimizing impacts to or enhancing habitat for the blowout penstemon are included for this activity in the RMP. The Greater Sand

Dunes ACEC affords potential habitat for the blowout penstemon, although no populations have been found there.

## Effects Analysis

Direct effects to the blowout penstemon are not expected because no known blowout penstemon populations currently exist in the Rock Springs FO (**Map 1**). No ACECs are designated near known blowout penstemon populations in the Rock Springs FO (**Map 1**), although potential habitat occurs within the greater Sand Dunes ACEC. Management of specially designated areas will not detrimentally impact potential blowout penstemon habitats, and may provide benefits due to access restrictions and surface disturbance limitations.

## Determination

Implementation of special designations habitat management actions, as presented in the Green River RMP (BLM 1997), may affect, but is **not likely to adversely affect** the blowout penstemon, due to **beneficial effects**. This determination is based on the potential that these actions may maintain or improve habitat for blowout penstemon and on the absence of blowout penstemon occurrences in the ACEC management areas.

## Summary of Determinations

The following is a summary of the effects determinations developed for each of the Green River RMP (BLM 1997) management actions.

**TABLE 3 SUMMARY OF DETERMINATIONS FOR THE GREEN RIVER RMP**

<b>Resource</b>	<b>Determination</b>
Air Quality Management	Not likely to adversely affect, due to beneficial effects
Cultural, Natural History, and Paleontological Resource Management	Not likely to adversely affect, due to discountable effects
Fire Management	Not likely to adversely affect, due to discountable effects
Forest and Woodlands Management	No effect
Hazardous Materials and Other Hazards	Not likely to adversely affect, due to discountable effects
Lands and Realty Management	Not likely to adversely affect, due to discountable effects
Livestock Grazing Management	Not likely to adversely affect, due to discountable effects
Minerals Management	Not likely to adversely affect, due to discountable effects
Off-Road Vehicle Management	Not likely to adversely affect, due to discountable effects
Recreation Resource Management	Not likely to adversely affect, due to discountable effects
Special Status Species Management	Not likely to adversely affect, due to beneficial effects
Vegetation Management	Not likely to adversely affect, due to discountable effects
Visual Resource Management	Not likely to adversely affect, due to beneficial effects
Watershed/Soils Management	Not likely to adversely affect, due to discountable effects
Wild Horse Management	Not likely to adversely affect, due to discountable effects
Wilderness Resource Management	Not likely to adversely affect, due to beneficial effects
Wildlife Management	Not likely to adversely affect, due to discountable effects
Special Designation Management Areas	Not likely to adversely affect, due to beneficial effects

## Cumulative Effects

Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the Rock Springs FO that might affect the blowout penstemon and its habitat. Existing and proposed activities on non-Federal lands include:

- Coal mine operations
- Coalbed methane
- 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

Most of these activities are situated away from potential blowout penstemon habitat. However, certain components of these projects, if completed, could directly or indirectly affect potential blowout penstemon habitat. Implementation of the Green River RMP (BLM 1997) would not change any potential effects to the blowout penstemon resulting from current non-Federal actions.

Potential cumulative effects to habitat located on private lands include habitat loss and fragmentation. Because no critical habitat has been designated by the USFWS for the blowout penstemon, there is a potential for habit destruction and fragmentation as private lands are developed. Development of private lands may also result in a loss of habitat available for reintroduction efforts.

# 7.0 ANALYSIS OF THE LANDER RMP

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## INTRODUCTION

The *Record of Decision for the Lander Resource Management Plan* (RMP) was signed in June 1987 (BLM 1987). The Lander FO occupies portions of Hot Springs, Fremont, Sweetwater, Natrona, and Carbon counties in central Wyoming. The Lander FO includes approximately 2.5 million acres of surface lands and 2.7 million acres of Federal mineral estate.

The planning and management decisions in the Lander RMP (BLM 1987) are represented by a selection of management objectives and actions. The Lander RMP (BLM 1987) describes the planning decisions for all management prescriptions applicable to the 10 Resource Management Units (RMUs) in the Lander FO. All specific actions within each RMU are based on the goals and objectives established in the planning decisions. The following text briefly summarizes the management actions for each resource and associated minimization measures applicable to the blowout penstemon. The effects analysis and determination for each management action are based solely on each corresponding description provided in the RMP and any established guidelines that may apply. Conservation measures not included as part of the RMP will be presented in the section on Conservation Strategies. The Lander RMP (BLM 1987) provides a complete description of each management action. The following management actions are included:

- Energy and Minerals
- Fish and Wildlife
- Forest Management
- Land Ownership Adjustments and Utility Systems
- Recreation Management
- Off-Road Vehicles
- Cultural/Natural History
- Fire Management
- Access
- Soils, Water, and Air Management
- Livestock Grazing
- Wild horses
- Wilderness
- Areas of Critical Environmental Concern

## ENVIRONMENTAL BASELINE

The environmental baseline describes past and current factors in the area that may have contributed to the status of the species and protective measures currently in place. This section presents a summary of known populations of the blowout penstemon in the Lander FO and analysis of the effects of ongoing human activities (including Federal, state, tribal, local, and private) that may have influenced blowout penstemon plants and their habitats.

Until 1996, the blowout penstemon was not known to occur in Wyoming. It was initially discovered in Wyoming by Frank Blomquist in 1996, but was not confirmed until 1999 (Fertig 2001a). Previously, it was thought to be endemic only to Nebraska. No populations of the blowout penstemon are known to occur in the Lander FO (**Map 1**). Therefore, the Lander RMP (BLM 1987) contains no specific measures intended to protect the blowout penstemon. However, Fertig (2001b) identified potential habitat for blowout penstemon in the Green Mountains of southeast Fremont County. Therefore, the effect of management actions within the Lander RMP (BLM 1987) will be assessed on potential habitat of the blowout penstemon.

## **ANALYSIS OF PROPOSED MANAGEMENT ACTIONS AND EFFECTS**

Proposed actions include planning decisions and specific management prescriptions for each RMU described in the Lander RMP (BLM 1987). The Lander RMP (BLM 1987) represents a selection of management actions that attempt to resolve planning issues and provide for sustained multiple use of public lands and resources. The following sections describe the management actions in the Lander RMP (BLM 1987) that may affect potential blowout penstemon habitat. Direct and indirect effects are presented after each planning decision. The Lander RMP (BLM 1987) provides a complete description of each management action.

### **Energy and Minerals**

#### **Management Actions**

Public lands will be made available for oil and gas leasing and development to the maximum extent possible, with consideration for the protection of other resource values. The potential for the occurrence of oil and gas and the significance and sensitivity of other resource values present in the FO were used to determine detailed prescriptions for each management unit.

Less than one percent of the slightly more than 2.7 million acres of Federal mineral estate within the FO will be closed to leasing. All but 12,000 acres of the open land will be managed under a less restrictive prescription compared to other surface resource values in known geological structures and areas rated as high potential for the occurrence of oil and gas. This would be accomplished over the life of this plan as analyses are done to determine where the restrictions can be modified and still avoid significant impacts to other resources. In addition, as new information is obtained regarding potential occurrence of oil and gas in any given area, or new oil and gas reserves are discovered, the potential rating for the area will be revised. New leases in these areas will be issued under the management prescription for that new rating.

Oil and gas leases issued within the FO will be conditioned with stipulations to protect other important resource values. These restrictions will protect other resources, while allowing for as much opportunity as possible to explore for and develop oil and gas reserves within the FO.

Geophysical activities associated with oil and gas exploration will generally be restricted in the same manner as other oil and gas exploration and development activities. Geophysical activities do not necessarily have the same impacts on surface resources as do other oil and gas exploration activities, but because of the wide variety of methods and the even wider variety of associated impacts, it will be impossible to predict all combinations of methods and resources potentially impacted. If a particular method of geophysical exploration could be conducted within the constraints necessary to protect other resources, it will be allowed.

All Federal lands within the FO will be open to locatable mineral exploration and development unless specifically withdrawn or segregated from appropriation under mining laws. Presently, approximately one percent of the Federal mineral estate within the FO is closed to locatable mineral exploration and development. Closure to locatable mineral exploration and development will increase by 30,000 acres to approximately two percent of the total Federal mineral estate within the FO. Additional acreage proposed for withdrawal will be reserved for crucial wildlife habitat in the East Fork Elk Winter Range and Whiskey Mountain Bighorn Sheep Winter Range, and the remaining acreage will be scattered throughout the FO in small tracts to protect significant cultural and historical resources.

In addition, in an attempt to minimize the acreage withdrawn to protect significant surface resource values, the plan will require that plans of operation be approved for all exploration and mining operations in certain areas designated as ACECs. Notices of intent usually allowed for operations disturbing five acres or less will not be allowed. This will provide for a higher degree of protection for significant surface values, while still providing maximum opportunity to explore and develop locatable mineral resources within the FO.

Prospecting, exploration and development, and leasing of phosphate resources will be allowed. The phosphate deposits are located in a belt running along the northeast flank of the Wind River Range, and extend into three different management units. Phosphate activities within the Red Canyon and Lander Slope Management Units will require stringent stipulations and mitigation measures to protect surface-resource values. The Beaver Creek Management Unit, which contains approximately one half of the known phosphate resources, will remain open to exploration, development, and leasing with fewer restrictions than will be the case in the Red Canyon and Lander Slope Management Units, where these restrictions will adversely affect the economic recovery of the phosphate resource.

Exploration and development of other minerals, such as sand and gravel, building stone, and other common minerals, will be allowed on a demand basis and consistent with the limitations and restrictions imposed on oil and gas, locatable minerals, and phosphate exploration and development within the FO. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included in the RMP for these activities.

## Effects Analysis

Direct effects to the blowout penstemon are not expected because there are no known blowout penstemon populations in the Lander FO (**Map 1**). However, as mapped by Fertig (2001b), the area of potential blowout penstemon habitat is open for energy and mineral development and exploration, Lander RMP (BLM 1987). Construction of roads, pads, and other facilities could alter or destroy potential habitats. This may cause negative affects to potential blowout penstemon habitat. However, such construction is unlikely in blowout penstemon habitat because of steep slopes and unstable, sandy substrate. Oil and gas development in areas near potential blowout penstemon habitat would likely increase use of vehicles and improve access to the surrounding areas. Increased human activity associated with nearby development of mineral resources may lead to increases in plant collection and disturbances to habitat. These activities may negatively affect the species by possibly displacing wildlife and livestock from disturbed habitats to sites containing blowout penstemon plants. Displaced animals may trample individual plants and may introduce noxious weeds. Well pad and pipeline construction may have short-term negative impacts during the construction phase of the projects (Fertig 2001b). All mineral and oil and gas projects are subject to specific stipulations and regulations limiting surface activities by season and proximity to specific resources. These measures will minimize unnecessary habitat disturbance.

## Determination

Implementation of mineral management actions, as presented in the Lander RMP (BLM 1987), may affect, but is **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the lack of known blowout penstemon populations occurring within the Lander FO, prohibitions currently in place including restricting all vehicle use to existing roads and trails and prohibiting surface disturbing activities in blowout penstemon habitat, conservation measures in place to protect the plant and its habitat, and the fact that energy and mineral development is not occurring in or adjacent to potential blowout penstemon habitat. However, there is the potential for new or existing BLM-approved energy and mineral development to disturb potential blowout penstemon habitat.

## Fish and Wildlife

### Management Actions

Improvement of aquatic and riparian habitats for fish, beaver, moose, and other animals will receive top priority in the South Pass and Beaver Creek Management Units, high priority in the Green Mountain Management Unit, and special attention in the Red Canyon Management Unit. Aquatic and riparian habitat management plans will be developed for an area encompassing parts of the upper Sweetwater River and Beaver Creek drainages and for the Green Mountain area.

Within the Green Mountain Management Unit, routine fish and wildlife habitat improvement projects, and maintenance of existing projects, will be completed after appropriate review. Prescribed burns and other cultural practices will be used to manipulate selected tree and shrub sites to improve habitat for elk, mule deer, beaver, fisheries, and a variety of other animal species.

Improvement of important big game ranges will receive high priority. Prescribed burning, cutting, thinning, planting, seeding, pitting, herbicide treatment, or other appropriate methods will be employed. Priority areas for action will include the Red Canyon and Lander Slope Management Units for elk and other big game habitat, the Whiskey Mountain unit for bighorn sheep, the southwest part of the Beaver Creek unit the South Pass unit for moose and mule deer, and the Sweetwater Rocks portion of the Gas Hills unit for mule deer. Terrestrial habitat management plans will be developed for the Red Canyon and Lander Slope units, the Sweetwater Rocks, and the south-central part of the Beaver Creek unit.

BLM will continue to work closely with the WGFD in all matters affecting fish and wildlife resources. Habitat management plans will be developed in cooperation with WGFD.

Objectives for some wildlife habitat management actions will be incorporated into other activity plans such as timber management, grazing allotment management and development, or cooperative management plans. This will occur where limited or specialized fish or wildlife objectives could be guided by these plans without developing a full-scale, overlapping habitat management plan.

BLM will cooperate with WGFD, interested sportsmen, conservation groups, and adjacent landowners in efforts to develop a workable bighorn sheep reintroduction program for Sweetwater Rocks area.

Development of small-scale, simple, or routine habitat improvement projects and maintenance of useful existing projects will continue throughout the FO. Such action will be subject to normal interdisciplinary environmental review, and budgetary and management constraints. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included in the RMP for this activity.

## Effects Analysis

Direct effects to the blowout penstemon are not expected because there are no known blowout penstemon populations in the Lander FO (**Map 1**). Wildlife habitat management may impact potential habitats for blowout penstemon. 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 habitats affected. However, the majority of these actions are specific to ungulate or aquatic habitats, which are distinct from blowout penstemon habitat. In addition, implementation of actions that restrict disturbance may have positive secondary effects by maintaining or improving existing habitat conditions required by blowout penstemon. Wildlife species, primarily mule deer and elk (and antelope), will eat blowout penstemon plants, usually flowering stalks. This uncontrolled browsing can be heavy during some years, removing many flowers and reducing reproductive potential. The Wyoming Game and Fish Department manages wildlife in the state and it is thus not a discretionary action by the BLM to remove these herbivores.

## Determination

Implementation of wildlife habitat management actions, as presented in the Lander RMP (BLM 1987), may affect, but is **not likely to adversely affect** the blowout penstemon due to **discountable effects**. This determination is based on the very low likelihood that wildlife management actions would take place in known populations or potential habitat of the blowout penstemon. Additionally, implementation of those actions that specify restrictions on disturbance will likely have secondary **beneficial effects** by maintaining or improving existing habitat conditions that are required by blowout penstemon.

## Forest Management

### Management Actions

Most timber management in the FO will occur in the Green Mountain Management Unit. Small volumes may be offered from South Pass and Dubois units and larger volumes from the Lander Slope unit.

Minor forest product sales will continue from timbered areas on demand, depending on resource management objectives. Most fuel wood will be cut in the Green Mountain Management Unit.

Approximately 2 MMBF per year in sawtimber and 1.5 to 2 MMBF per year in minor forest products will be offered in the Green Mountain Management Unit. This will be undertaken for 10 years, or until the majority of the larger timber has been salvaged.

From the Lander Slope unit, approximately 10 MMBF will be offered in a large sale, and will take up to five years to harvest. After completion of this sale, logging will cease for 10 years, and another sale could be offered. The primary objective of the harvesting program will be to achieve management of timber resources by salvaging dead and dying timber, and regenerating harvested areas. However, other resource objectives, such as habitat enhancement, will be integrated into management plans to enhance these other values.

These will not be sustained-yield harvests, but will be salvage of the dead and dying timber and will eventually create an uneven-aged forest with many benefits, including enhancement of wildlife habitat. Individual clear-cut areas, in all cases, will be limited to 25-acre blocks.

Prescribed burning techniques will be included in management plans for conifer and aspen stands to achieve multiple resource objectives. Standard and special provisions will be employed on all sales and burns to achieve management objectives. The size of prescribed burns will be determined on an individual project basis. Regeneration of all harvested and burned areas will be assured, either through natural or artificial regeneration.

Forest management in timber stands will take place as needed, depending on funding, to assure optimum growth conditions in all stands. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included, or needed in the RMP for this activity.

## Effects Analysis

Forest management will be principally restricted to stands of coniferous trees. Conversely, blowout penstemon plants are typically associated with steep slopes and sparsely vegetated sand dunes. These habitats are mutually exclusive with blowout penstemon habitat, distinct from those targeted for forest management actions. Therefore, potential blowout penstemon habitats are not expected to experience any detrimental effects or impacts as a result of forest management.

## Determination

Implementation of forest management actions, as presented in the Lander RMP (BLM 1987), will have **no effect** on the blowout penstemon. This determination is based on the absence of forest management areas within or near potential habitat for the blowout penstemon.

## Land Ownership Adjustments and Utility Systems

### Management Actions

The majority of the 2.5 million areas of public lands in Federal ownership will be retained. One hundred seventy-two tracts, encompassing approximately 24,000 acres, meet the basic criteria for disposal. Based upon the analysis in the Lander RMP (BLM 1987)/EIS, 108 of these tracts, encompassing 12,500 acres, could be considered for disposal through sale or exchange.

Future proposals for sale or exchange will be considered on case-by-case basis. If a certain proposal is determined to be consistent with objectives of the RMP, it could be approved without a planning amendment.

Leases and disposals will continue to meet the needs of local and state governments.

Major utility and transportation systems will be located to use existing corridors whenever possible, to provide for cost-efficient routes, and to protect other resource values such as scenery and wildlife. Most of the area will be open for location of major utility systems. However, areas with the most potential conflicts have already been identified as areas to avoid. The avoidance areas will be those where rights of way may be granted only when no feasible alternative route or designated rights of way corridor is available. These areas include Whiskey Mountain Bighorn Sheep Winter Range, the East Fork Crucial Elk Winter Range, the Dubois Badlands, the Lander Slope, Red Canyon, South Pass, Sweetwater Canyon, the Sweetwater Rocks, and ¼ mile or the visible horizon, whichever is less, on each side of the Oregon/Mormon Pioneer National Historic Trails. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included in the RMP for this activity.

## Effects Analysis

Direct effects to the blowout penstemon are not expected because there are no known blowout penstemon populations in the Lander FO (**Map 1**). It is not likely that new utility systems would be sited in potential habitats because steep slopes and the unstable, sandy substrate would likely be avoided. Lands and realty management is not expected to negatively impact blowout penstemon plants or habitats. Potential habitats for blowout penstemon not under BLM jurisdiction may be targeted for acquisition and subsequent management by BLM. Such acquisitions would provide benefits for blowout penstemon habitats that may not be afforded under non-Federal ownership.

## Determination

Activities associated with land ownership and utility systems, as presented in the Lander RMP (BLM 1987), may affect, but are **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the low likelihood that land resource management actions would take place in known populations or potential habitat of the blowout penstemon. Land exchanges would not occur to remove occupied blowout penstemon habitat from Federal ownership and land acquisition and withdrawal actions may have **beneficial effects** to the blowout penstemon by maintaining or acquiring potential habitats.

## Recreation Management

### Management Actions

Seven existing recreational sites will be managed and maintained, including Atlantic City, Big Atlantic Gulch, and Cottonwood campgrounds; Split Rock and Devil's Gate interpretive sites; and Wild Horse Point Overlook and Castle Gardens picnic areas. The Split Rock and Devil's Gate interpretive sites are included in the Oregon/Mormon Pioneer National Historic Recreation Management Plan.

An interpretive marker will be added for the Red Canyon National Landmark overlook. Hazard reductions will be implemented and maintained on Green Mountain and South Pass. Plans to protect and maintain dispersed recreational opportunities and settings in the South Pass Historic mining area will be provided in a recreation management plan.

The Green Mountain Management Unit will be managed as an extensive recreation management area where dispersed recreation will be encouraged, and where visitors will have freedom of recreational choice with minimal regulatory constraint. Recreation management priorities for this unit include maintaining existing investments, reducing public safety hazards, enhancing aesthetic values, and establishing camping and commercial use quotas.

The BLM will continue to monitor recreation throughout the FO. Area personnel will supervise recreation and enforce recreation-oriented regulations and special designations. Monitoring and supervision will be accomplished by patrolling high-use areas and contacting users in the field. Special efforts will be made to ensure compliance with the terms of special recreation-use permits, authorizing commercial guide/outfitter services, permits for tours of the Oregon/Mormon Pioneer National Historic Trails, and special designations dealing with recreation, such as a 14-day camping limit on public lands and off-road vehicle designations. Quotas will be established for commercial hunting camps in the Green Mountain, Lander Slope, Red Canyon, and Whiskey Mountain Management Units. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included in the RMP for this activity.

## Effects Analysis

Direct effects to the blowout penstemon are not expected because there are no known blowout penstemon populations in the Lander FO (**Map 1**). However, the area of potential blowout penstemon habitat, as mapped by Fertig (2001b), is an extensive recreation management area where dispersed recreation is encouraged (BLM 1987). Recreational management may detrimentally impact potential blowout penstemon habitats by hikers trampling plants, plant collecting, or campers building campsites on potential blowout penstemon habitat. An additional indirect effect of this action may be the introduction of non-native plants into the area if recreational hikers unintentionally carry seeds into potential blowout penstemon habitat.

## Determination

Implementation of recreation management actions, as presented in the Lander RMP (BLM 1987), may affect, but is **not likely to adversely affect** the blowout penstemon and its habitat, due to **discountable effects**. This determination is based on the absence of blowout penstemon populations occurring in the Lander FO and the very low potential for dispersed recreation uses to result in direct or indirect disturbance of blowout penstemon habitats.

## Off-Road Vehicles (ORVs)

### Management Actions

ORV designations completed in 1981 on one half of the FO will be continued. The remaining areas of public lands will be designated. ORV management will focus more rigorously on those management units having crucial wildlife values, significant visual resources, high watershed sensitivity, and outstanding natural character. Resource management will limit ORV use to designated roads and vehicle routes, and impose seasonal closures (from approximately December through June) on areas or roads where vehicle use is incompatible with other resource values. No areas in the Lander FO are designated as “open” to ORV use. The Green Mountain Management Unit limits ORV use to designated roads and vehicle routes. Established seasonal road closures on Green Mountain above 7,000 feet in elevation will continue. ORV use in the remainder of the FO will be limited to existing roads and vehicle routes, except for the performance of necessary tasks. Examples include picking up big game harvests, repairing range improvements, managing livestock, and mineral activities where surface disturbance does not total more than five acres. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

Direct effects to the blowout penstemon are not expected because there are no known blowout penstemon populations in the Lander FO (**Map 1**). Occasional hill climbing and associated ORV activities may benefit blowout penstemon habitat by ensuring continued disturbance and erosion. None of the Lander planning area is subject to open ORV use. ORV management and use in the Lander planning area is not expected to result in detrimental effects to potential blowout penstemon habitats.

## Determination

Implementation of ORV management actions, as presented in the Lander RMP (BLM 1987), may affect, but is **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the low likelihood that ORV activities managed by the BLM would take place in the same area as potential habitat for blowout penstemon. Driving directly over plants may cause a severe negative impact to populations (USFWS 1992). An additional indirect effect of this action may be the introduction of non-native plants into the area if ORV users unintentionally carry seeds into potential

blowout penstemon habitat. Additionally, occasional ORV activities may have **beneficial effects** to potential blowout penstemon habitat by ensuring continued disturbance and erosion, although at this time no ORVs should be traveling into blowout penstemon habitat.

## Cultural/Natural History

### Management Actions

Management actions will protect and maintain important cultural resources located in the Lander FO. Important resources include the Oregon/Mormon Pioneer National Historic Trails and associated sites, South Pass Historic Mining Area, Castle Gardens, Beaver Rim, Red Canyon National Natural Landmark, and the Warm Springs Canyon flume, natural bridge, and geyser will receive enhanced protection. A management plan specific to the Oregon/Mormon Pioneer Trail has been prepared and should be referred to for specifics of this plan. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for these activities in the RMP.

### Effects Analysis

No known blowout penstemon populations currently exist in the Lander FO (**Map 1**). Cultural and natural history management may affect potential habitat for the blowout penstemon by excavating soils and removing or trampling vegetation. These potential impacts depend on several factors, including the number of people involved with each field effort, the time of year, duration of field activities, and use of heavy machinery versus hand tools. Disturbance to blowout penstemon habitat is possible only if large-scale excavation takes place. Most cultural management activities are small and do not occur within potential blowout penstemon habitat. Historical Trails also don't occur on the tops of sand dunes, the primary potential habitat for blowout penstemon.

### Determination

Implementation of cultural and natural history management actions, as presented in the Lander RMP (BLM 1987), may affect, but is **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the low likelihood that management actions would take place in potential blowout penstemon habitat and because no known blowout penstemon populations are found within the Lander FO.

## Fire Management

### Management Actions

Approximately two percent of the lands administered by the BLM in the Lander FO will be under full fire suppression, with no equipment restrictions. Full fire suppression management has the objective of suppressing all wildfires as quickly as possible with all available resources. Approximately 60 percent of the lands administered by the BLM, including the Green Mountain Management Unit, will have full suppression of wildfires with limited or restricted use of heavy equipment. This does not preclude the use of heavy equipment, but does limit use on initial attack, and requires fire authorities to analyze a fire situation critically before committing heavy equipment to a fire. The Green Mountain Management Unit will have an aggressive initial attack with all available resources, with the exception of bulldozers. The objective is to suppress wildfires as quickly as possible with as little surface disturbance as possible. Approximately 38 percent of the public lands in the FO will be under limited suppression of wildfires. There will be no initial attack on the fire, and an observer will monitor a wildfire to determine if management objectives are met. Wildfire will be suppressed when the fire (a) exceeds or has the potential to exceed the size specified in a predetermined plan, (b) threatens private property, (c) threatens man-

made structures, or (d) threatens human life. Prescribed burns will be allowed in all management units. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

Direct effects to the blowout penstemon are not expected because there are no known blowout penstemon populations in the Lander FO (**Map 1**). Additionally, wildland fires are not expected to directly impact the blowout penstemon because its habitat typically occurs in steep, sparsely vegetated sand dunes. Furthermore, a natural disturbance such as fire is thought to enhance the blowout penstemon habitat by removing sand-stabilizing vegetation. Fire management, particularly actions associated with prescribed fire, potentially improves blowout penstemon habitats. Implementation of some fire-control policies may reduce wind erosion, resulting in a loss of blowout penstemon habitat (Fertig 2001b). Blowout penstemon habitats could be altered from the equipment and resources used to fight fire. However, use of heavy equipment and surface disturbance is restricted in potential blowout penstemon habitat within the Lander FO (BLM 1987).

## Determination

Implementation of fire management actions, as presented in the Lander RMP (BLM 1987), may affect, but is **not likely to adversely affect** the blowout penstemon due to **discountable effects**. This determination is based on the low potential for fires to occur in potential habitat for the blowout penstemon and the low probability that heavy equipment would be used in an area that contains blowout penstemon or its habitat. Prescribed fire in potential blowout penstemon habitat may have **beneficial effects** by removing sand-stabilizing vegetation. In the rare event of a wildfire and immediate suppression is required in occupied blowout penstemon habitat, 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 blowout penstemon habitat is affected/impacted.

## Access Management

### Management Actions

Access roads no longer needed would be rehabilitated, as outlined in the Lander RMP (BLM 1987). Negotiations with private landowners concerning BLM access easements will be proposed for areas where public or administrative access will be needed. In the Green Mountain Management Unit, access is provided to public lands for forest, wildlife, recreation, and livestock grazing management. Existing BLM roads and easements will be maintained and BLM will negotiate additional easements to secure public access as identified in the District Transportation Plan. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

Direct effects to the blowout penstemon are not expected because there are no known blowout penstemon populations in the Lander FO (**Map 1**). Development and expansion of access to lands administered by BLM may detrimentally affect potential blowout penstemon habitat. Alteration of potential habitat is expected to be extremely limited. Additionally, rehabilitation of some access will help limit public presence and access and benefit potential blowout penstemon habitat.

## Determination

Implementation of access management actions, as presented in the Lander RMP (BLM 1987), may affect, but is **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the absence of blowout penstemon populations within the Lander FO and the very low likelihood that activities associated with creating or expanding access will result in adverse effects to the blowout penstemon or its potential habitat.

## Soils, Water, and Air Management

### Management Actions

Public lands will be managed to protect and improve the quality of the soil, water, and air resources. This will include project and plan review to facilitate proper consideration of these resources and that enhancement opportunities area not overlooked. Also, soil erosion, water quality, and air quality will be monitored, as necessary, to track the effectiveness of specific projects and management schemes. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for these activities in the RMP.

### Effects Analysis

Direct effects to the blowout penstemon are not expected because there are no known blowout penstemon populations in the Lander FO (**Map 1**). Management of soils, water, and air may detrimentally impact potential blowout penstemon habitat by increasing vegetation production and stabilizing and conserving soils. These potential impacts depend on several factors, including the number of people involved with each field effort, the time of year, duration of field activities, and the use of heavy machinery versus hand tools. There are no impact minimization measures for excluding areas containing highly erodible soils or steep slopes, which are common in blowout penstemon habitat, in the Lander RMP (BLM 1987).

**Air Quality Management:** No known populations of blowout penstemon occur within the Lander FO (**Map 1**). Currently there are no air quality monitoring stations within any blowout penstemon habitat in the Lander FO. Placement of air monitoring stations would not be likely in blowout penstemon habitat as the nature of shifting sands would not provide for a stable foundation for such structures. Actions related to air quality management on other activities will not result in negative impacts to blowout penstemon or its potential habitat. These management actions will likely result in maintaining or improving air quality conditions throughout the FO, which may have secondary benefits to blowout penstemon.

**Soil Resources Management:** The implementation of soils management involves planning for actions that will alleviate soil erosion and modifying others to avoid soil erosion. There are no impacts from this management action on blowout penstemon habitat. However, activities associated with soil mapping/sampling may include surveying, core drilling, use of pick-up truck mounted soil augers and core samplers (1 ½” 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 conducted. 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. Other surface disturbing 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. These types of soil analysis are not generally conducted on the large sand dunes associated with blowout penstemon.

**Water Resources Management:** 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 (re-contouring 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.).

The above types of actions associated with watershed management actions are infrequent, small in scale, would take place very rarely, if at all within any blowout penstemon habitat and would likely have minimal or no negative impacts on blowout penstemon habitats. Overall, actions associated with watershed management are likely to improve habitat for the blowout penstemon.

## Determination

Management of soil, water, and air resources is not expected to detrimentally impact the blowout penstemon and its habitat. Resource management generally precludes surface disturbance in unstable areas such as blowout penstemon habitat. Slope restrictions for surface development will assist in maintaining and protecting potential habitats for blowout penstemon. These restrictions may result in beneficial effects on blowout penstemon and its habitat. Actions associated with soil, water and air resource management, such as monitoring lakes or ponds for evidence of acid rain, monitoring streams for soil erosion or chemical pollutants, or measuring snow depth to determine precipitation amounts, conducting soil surveys, etc., are non-impacting or beneficial in protecting and maintaining blowout penstemon habitat. Conducting a soil survey would be a short duration effort with minimal impacts. Watershed improvements are more intrusive and would have more impacts, but would generally not be done on shifting dunal sands.

**Air Quality Management:** Implementation of air quality management actions, as presented in the Lander RMP (BLM 1987), is **not likely to adversely affect** the blowout penstemon, due to **beneficial effects**. Air quality management efforts may result in positive effects to air quality that might be beneficial to blowout penstemon.

**Soils and Water Resources Management:** Implementation of soil, water, and air resource management actions, as presented in the Lander RMP (BLM 1987), may affect, but is **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the Conservation Measures in place that will preclude or minimize adverse effects to the blowout penstemon or its habitat. The activities associated with these management actions are infrequent, localized or small in scale, and generally not likely to occur in blowout penstemon habitat. Implementation of soil and water resource management actions may maintain or improve the condition of some habitats and therefore may result in secondary beneficial effects to maintain or improve blowout penstemon habitats.

## Livestock Grazing

### Management Actions

The Lander FO has two grazing study areas: Green Mountain and Gas Hills. Rangeland program summaries (RPSs) for these study areas are included in the RMP. Grazing allotments have been grouped in three categories: M (maintain), C (custodial), and I (improve). For each category, recommendations were made for intensity of grazing management, including multiple-use resource management objectives, range improvement and monitoring, and improvement and maintenance of rangeland condition and productivity. Under this RMP, management will continue until monitoring results are available. Management actions based on all available data will then be implemented in the allotments, beginning with those needing the most improvement.

There are 291 allotments in the Lander FO. Category M allotments comprise 29 percent of the allotments and 27 percent of the acreage in the FO. The principal objective of these allotments is to maintain or improve existing resource conditions and reduce or eliminate conflicts. Category C allotments comprise 28 percent of the allotments and 4 percent of the acreage in the FO. The principal objective for Category C allotments is to prevent deterioration of the current resource conditions by managing the lands in a custodial manner. Category I allotments comprise 43 percent of the allotments and 69 percent of the acreage in the FO. The principal objective for Category I allotments is to improve existing resource conditions and reduce or eliminate conflicts.

Management decisions affecting grazing will be made when monitoring data are sufficient to support those decisions. They may include changing livestock numbers, periods of use, or a combination of both. Monitoring will continue to assure that any changes in grazing accomplish the objectives. If monitoring studies indicate a need to further modify periods of use, livestock numbers, class of livestock, or grazing systems, these adjustments will be made after consultation with the affected livestock operators and any other affected parties. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

### Effects Analysis

Livestock grazing or associated activities may have a detrimental affect on blowout penstemon or its habitat. Direct effects to the blowout penstemon are not expected because there are no known blowout penstemon populations in the Lander FO (**Map 1**). Improvements to grazing allotments intended to increase available forage, including use of heavy equipment and alteration of existing vegetation composition, may detrimentally impact blowout penstemon habitats, especially if improvements occur

near or within known blowout penstemon populations. Fencing, changes in livestock seasons of use or type of livestock, and livestock improvement projects may affect the blowout penstemon by crushing or removal of individual plants. Blowout penstemon is edible to cattle and horses, but is not preferred forage if other vegetation is available. However, livestock grazing is unlikely to occur in the sparsely vegetated, shifting sand, and steep slopes of blowout penstemon habitat does occur to a small extent on areas currently occupied by blowout penstemon in Wyoming. Wildlife is the primary herbivore, eating the upper stems and flowers. Livestock trampling damage is typically not significant because of the plant's sparse distribution and its shifting substrate although livestock may step on and crush a few individual plants or consume them along with other more preferred plant species. Though individual plants may be damaged, and the fitness of the plants may be affected for the season, the plants usually recover and the overall population is minimally affected. Livestock passing through blowout penstemon habitat may also spread the seeds of invasive species through excrement. Infrequent grazing in blowout penstemon habitats may be beneficial to the plants by reducing competing vegetation (Fertig 2001b), although individual blowout penstemon plants will also be grazed. Livestock grazing is not excluded from potential blowout penstemon habitat though fencing or other actions, so livestock are able to access the blowout penstemon plants. Fencing of blowout penstemon habitat is very difficult due to the movement of the sand dunes that comprise the plant's habitat, the impracticality of trying to build fences on a sand substrate, and the difficulty of maintaining fences as blowing sands cover them, making them inoperable and blowing over the fences and pulling off wires. Fencing of blowout penstemon habitat is thus an impracticable task. BLM intends to continue grazing activities along with surveying for the blowout penstemon.

## Determination

Activities associated with livestock grazing, as presented in the Lander RMP (BLM 1987), may affect, but are **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the absence of blowout penstemon within the Lander FO and the low likelihood that livestock grazing actions would take place in blowout penstemon habitat. Infrequent grazing in blowout penstemon habitats may have some secondary **beneficial effects** by reducing competing vegetation.

## Wild Horse Management

### Management Actions

The objectives of wild horse management are to:

- Protect, maintain, and control viable, healthy herds of wild horses while retaining their free-roaming nature;
- Provide adequate habitat for free-roaming wild horses through management, consistent with principles of multiple use and environmental protection; and
- Provide opportunities for the public to view wild horses.

Wild horses will be managed within seven Wild Horse Herd Management Areas (HMAs). These are the Antelope Hills, Conant Creek, Crooks Mountain, Dishpan Butte, Green Mountain, Muskrat Basin, and Rock Creek Mountain Wild Horse Herd Management Areas. An appropriate median population level of 655 wild horses, to an upper limit of 917 wild horses will be maintained among the seven HMAs.

The site-specific activity plans for the seven wildhorse HMAs in the Lander FO will be maintained to conform with the Lander RMP (BLM 1987) objectives for vegetation management. Specific habitat objectives for HMAs will be developed. Water developments will be provided, if necessary, to improve

herd distribution and manage forage utilization. Selective gathering programs will be implemented in each of the wild horse herd management areas. Gathering plans will be prepared for removal of excess wild horses. Other resource uses will be maintained and protected, consistent with those resource management objectives, while maintaining viable, healthy wild horse herds and appropriate herd management levels. Wild horse HMAs will be managed in a natural, healthy state and for an ecological balance among wild horses and land and resource uses. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

Direct effects to the blowout penstemon are not expected because there are no known blowout penstemon populations in the Lander FO (**Map 1**). Actions associated with wild horse management are expected to be limited to occasional herding, corralling, and transporting horses. These actions are not expected to impact potential blowout penstemon habitat. Wild horse roundup structures (e.g.; corals, fences, etc.) would not be located in blowout penstemon habitat. As mapped by Fertig (2001b), there is no blowout penstemon habitat located near any wild horse HMAs, although significant aeolian sand deposits, the base habitat for blowout penstemon, occurs in small portions of some of the HMAs, but no populations of blowout penstemon have been found in these HMAs. Blowout penstemon is edible to cattle and horses, but is not preferred forage if other vegetation is available. Occasional herbivory and possible trampling by wild horses on blowout penstemon plants might take place if any populations are located within any HMAs. However, grazing, although unlikely to occur in the sparsely vegetated, shifting sand and steep slopes of blowout penstemon habitat, does occur to a small extent. Cattle and wildlife are the primary herbivores, eating the upper stems and flowers and it is suspected that wild horses would also do the same. Wild horse trampling damage is not expected to be significant because of the plant's sparse distribution and shifting substrate, although livestock do occasionally step on and crush a few individual plants or consume them along with other more preferred plant species. Though individual plants may be damaged, and the fitness of the plants may be affected for the season, the plants usually recover and the overall population is minimally affected. Wild horses passing through blowout penstemon habitat may also spread the seeds of invasive species through excrement. Infrequent grazing in blowout penstemon habitats may be beneficial to the plants because it reduces competing vegetation (Fertig 2001b), although individual blowout penstemon plants will also be grazed. Wild horse grazing would not be excluded from blowout penstemon habitat though fencing or other actions, so wild horses would be able to access the blowout penstemon plants if they occur in any HMA. BLM intends to continue managing wild horses within the seven HMAs directed by the Lander RMP (BLM 1987) and plans on continuing surveys for the blowout penstemon.

## Determination

Currently, implementation of wild horse management, as presented in the Lander RMP (1987), may affect, but is **not likely to adversely affect** the blowout penstemon, due to **discountable effects**. This determination is based on the absence of blowout penstemon within the Lander FO and the low likelihood that blowout penstemon or its potential habitat will be adversely affected by actions associated with management of wild horses.

In the event that populations of blowout penstemon are discovered in any of the HMAs in the Lander FO, implementation of wild horse management, as presented in the Lander RMP (BLM 1987), may affect, and is **likely to adversely affect** the blowout penstemon, due to occasional minimal herbivory and trampling by free roaming horses. Because no fencing or other management of wild horses will keep them out of blowout penstemon habitat, wild horses would be free to graze and trample blowout penstemon plants, even though this would be expected to be extremely minimal.

## Wilderness

### Management Actions

Three management units in the Lander FO are WSAs. These units encompass six WSAs totaling 48,000 acres, and include Sweetwater Canyon, Sweetwater Rocks (four WSAs), and Cooper Mountain. No specific requirements or guidelines applicable for minimizing impacts to the blowout penstemon are included for this activity in the RMP.

### Effects Analysis

Direct effects to the blowout penstemon are not expected because there are no known blowout penstemon populations in the Lander FO (**Map 1**). There is potential habitat for the blowout penstemon, as mapped by Fertig (2001b), within the Sweetwater Canyon WSA. Wilderness management will not result in detrimental impacts to potential blowout penstemon habitat. These actions will result in beneficial effects to such habitat by limiting disturbance.

### Determination

Implementation of the wilderness management actions, as presented in the Lander RMP (BLM 1987), may affect, is **not likely to adversely affect** the blowout penstemon, due to **beneficial effects**. This determination is based on the potential that these actions will limit disturbance and maintain or protect potential blowout penstemon habitat.

## Areas of Critical Environmental Concern

### Management Actions

Approximately 117,000 acres, representing 4.7 percent of the Lander FO, will be designated as ACECs and will require thorough management of all surface-disturbing activities. Such management will protect important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, and will protect life and provide safety from natural hazards. The following areas will be designated ACEC in the Lander FO:

- Lander Slope Management Unit (25,000 acres of Federal surface)
- Red Canyon Management Unit (15,000 acres of Federal surface)
- Whiskey Mountain Management Unit (4,000 acres of Federal surface)
- East Fork Management Unit (1,000 acres of Federal surface)
- Dubois Badlands Management Unit (5,000 acres of Federal surface)
- Majority of the South Pass Management Unit (12,000 acres of Federal surface)
- Portion of Green Mountain Management Unit (18,000 acres of Federal surface)
- Beaver Creek Management Unit (7,000 acres of Federal surface)

Significant sites and segments along the Oregon/Mormon Pioneer Natural Historic Trails will be designated as an ACEC and are located within the Beaver Creek and Gas Hills Management Units. These sites and segments include approximately 22,600 acres of protective corridor on surface lands administered by BLM; approximately 3,100 acres of current or proposed withdrawals; and approximately 7,000 acres of trail corridor on split estate lands. There are approximately 780 acres of partially impacted sites and segments on surface lands administered by BLM included in the ACEC (these will be considered on a case-by-case basis), and approximately 450 acres on split estate. No specific requirements or guidelines applicable for minimizing impacts to or enhancing habitat for the blowout penstemon are included for this activity in the RMP.

## Effects Analysis

Direct effects to the blowout penstemon are not expected because there are no known blowout penstemon populations in the Lander FO (**Map 1**). No ACECs are designated near known blowout penstemon populations in the Lander FO (**Map 1**). Management of ACECs will not detrimentally impact potential blowout penstemon habitats, but may very well have beneficial effects because they restrict access and limit surface disturbance.

## Determination

Implementation of ACEC management actions, as presented in the Lander RMP (BLM 1987), may affect, but is **not likely to adversely affect** the blowout penstemon, due to **beneficial effects**. This determination is based on the potential that these actions may maintain or improve habitat for blowout penstemon because of access restrictions and surface disturbance limitations.

## Summary of Determinations

The following is a summary of the effects determinations developed for each of the Lander RMP (BLM 1987) management actions.

**TABLE 4 SUMMARY OF DETERMINATIONS FOR THE LANDER RMP**

<b>Resource</b>	<b>Determination</b>
Energy and Minerals	Not likely to adversely affect, due to discountable effects
Fish and Wildlife	Not likely to adversely affect, due to discountable effects
Forest Management	No effect
Land Ownership and Utility Systems	Not likely to adversely affect, due to discountable effects
Recreation Management	Not likely to adversely affect, due to discountable effects
Off-Road Vehicles	Not likely to adversely affect, due to discountable effects
Cultural/Natural History	Not likely to adversely affect, due to discountable effects
Fire Management	Not likely to adversely affect, due to discountable effects
Access	Not likely to adversely affect, due to discountable effects
Soils, Water and Air Management	Not likely to adversely affect, due to discountable effects
Livestock Grazing	Not likely to adversely affect, due to discountable effects
Wild Horse Management	Not likely to adversely affect, due to discountable effects
Wilderness	Not likely to adversely affect, due to beneficial effects
Areas of Critical Environmental Concern	Not likely to adversely affect, due to beneficial effects

## Cumulative Effects

Cumulative effects include future state, tribal, local, or private actions that are reasonably certain to occur in the Lander FO. No future state, tribal, local, or private actions that may affect the blowout penstemon or potential habitats are anticipated.

Potential cumulative effects to habitat located on private lands include habitat loss and fragmentation. Because no critical habitat has been designated by the USFWS for the blowout penstemon, there is potential for habit destruction and fragmentation as private lands are developed. Development of private lands may also result in a loss of habitat available for reintroduction efforts.

## 8.0 CONSERVATION STRATEGIES

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Implementation of the following conservation strategies is intended to minimize adverse impacts that are likely to result from implementation of the management actions provided in the four RMPs above. In addition to the existing conservation measures in the RMPs (items 1-10), the BLM has committed to the implementation of conservation measures 11 through 22. The BLM will also consider the implementation of any appropriate best management practices (BMPs) (items 23 through 44) to further protect the blowout penstemon and its habitat. The BMPs will be considered on a case-by-case basis at the project level, and are intended to further protect the species, its habitat, and aid in the recovery of the species. In the event new populations of the blowout penstemon are discovered, these conservation measures would apply until such time that further investigation and subsequent consultation with the U.S. Fish and Wildlife Service necessitate examination of these measures for adequacy.

### EXISTING PROTECTIONS

#### Existing Protections Common to all Four 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 benefit the blowout penstemon 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).
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.
    - 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.

#### Existing Protections in the Great Divide RMP

The following section presents measures included in the Great Divide RMP that may directly or indirectly minimize impacts to the blowout penstemon.

3. Before any land disposal action can be taken, BLM will consider each individual tract and will include public involvement. The preferred method of disposal or acquisition of lands by BLM will be through exchange (BLM 1990).
4. The BLM will coordinate and cooperate with owners of adjacent properties, interested individuals, organizations, and agencies when preparing plans to implement ORV designations (BLM 1990).

## **Existing Protections in the Green River RMP**

The following section presents measures included in the Green River RMP (BLM 1997) that may directly or indirectly minimize impacts to the blowout penstemon.

5. “The Coal Occurrence and Development Potential area is subject to continued field investigations, studies, and evaluations to determine if certain methods of coal mining can occur without having a significant long-term impact on wildlife, cultural, and watershed resources, in general, and on threatened and endangered plant and animal species and their essential habitats. These studies include keeping resource databases current (e.g., where existing raptor nests become abandoned or where new raptor nests become established, etc.), analysis of effects to wildlife and threatened and endangered species habitats and populations, and the cumulative effects of mining operations and other activities in the area” (BLM 1997, p.13).

## **Existing Protections in the Lander RMP**

The following section presents measures included in the Lander RMP (BLM 1987) that may directly or indirectly minimize impacts to the blowout penstemon.

6. “BLM will continue to work closely with the Wyoming Game and Fish Department in all matters affecting fish and wildlife resources.” (BLM 1987a, p. 4)
7. “ORV management will focus more thorough management on those management units having crucial wildlife values.” (BLM 1987a, p. 9)
8. “New oil and gas leases issued in areas rated as having moderate, low or no potential for the occurrence of oil and gas reserves will include a no-surface-occupancy restriction to protect water quality, fisheries, riparian areas, sage grouse leks, steep slopes, threatened and endangered species, significant cultural sites, sensitive visual resources, and elk and moose crucial winter range. In addition, seasonal restrictions will be applied to the leases to protect important wildlife habitat areas.” (BLM 1987a, pp. 27, 40, 43, 45, 50, 60, and 69)
9. “Crucial wildlife areas will be critically examined before placement of any range improvement projects that can result in increased livestock use in these areas. Some crucial wildlife areas will require special intensive management actions.” (BLM 1987a, p. 80)

## **Existing Protections in the Platte River RMP**

The following section presents measures included in the Platte River RMP that may directly or indirectly minimize impacts to the blowout penstemon.

10. Special Designation area 6: Casper Sand Dunes (soil, water, and air): The 13,560 acres of the Casper Sand Dunes will be managed to protect fragile watershed values. ORV use will be confined to existing roads and trails during big game hunting seasons and on designated roads and trails the rest of the year. We will pursue acquisition of access to this area only if public demand and landowners' cooperation is evident. Grazing leases will be maintained. A watershed plan to be developed for this area will be coordinated with the wildlife and range programs. The plan will clarify any special mitigation that may be required to reduce impacts associated with development proposals.

## **CONSERVATION MEASURES COMMITTED TO BY BLM**

These Conservation Measures are intended to conserve the blowout penstemon, 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 blowout penstemon, 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 blowout penstemon, 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 blowout penstemon. However, because it is impossible to provide measures that will address all possible actions, in all locations across the range of the blowout penstemon, it is imperative that project-specific analysis and design be completed, for all actions that have the potential to affect the blowout penstemon. 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. The order in which the Conservation Measures appear below does not imply their relative priority.

11. Place mineral supplements, or new water sources (permanent or temporary), for livestock, wild horses, or wildlife at least 1.0 mile from known blowout penstemon populations. Do not place supplemental feed for livestock, wildlife, or wild horses within 1.0 mile of known blowout penstemon populations. Straw or other feed must be certified weed-free. These restrictions are intended to keep free-ranging livestock away from blowout penstemon populations and subsequent grazing on the blowout penstemon plants. Surveys for blowout penstemon will be conducted in potential blowout penstemon habitat prior to livestock operations projects.
12. The BLM will not increase permitted livestock stocking levels in any allotment with pastures containing known blowout penstemon populations without consulting with the USFWS. It is unknown to what extent overall impacts due to livestock grazing have on the blowout penstemon, whether it is detrimental due to actual grazing and trampling of plants or beneficial due to livestock removal of adjacent competing vegetation.

These two conservation measures (11 and 12) will be added to grazing permit renewals in allotments with known blowout penstemon populations.

13. Biological control of noxious plant species will be prohibited in blowout penstemon 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.

14. Except in cases of extreme ecological health (insect or weed outbreaks/infestations), herbicide treatment of noxious plants/weeds will be prohibited within 0.25 mile of known blowout penstemon populations and insecticide/pesticide treatments will be prohibited within 1.0 mile of known blowout penstemon populations 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, pesticide use within 1.0 mile of known blowout penstemon populations will be applied by hand and herbicides applied by hand within 0.25 mile of blowout penstemon populations, with care taken not to spray blowout penstemon plants.

Aerial application of herbicides will be carefully planned to prevent drift in areas near known blowout penstemon populations (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 blowout penstemon.

15. If revegetation projects are conducted within 0.25 miles of known penstemon habitat, only native species will be selected. However, no revegetation projects will be done **in** known or potential blowout penstemon habitats as the plants requires open non-vegetated to sparsely vegetated sand dunes due to the early seral stage nature of the plant and shifting sand dune habitat substrate. This conservation measure will be applied within 0.25 miles of known blowout penstemon habitat and will be done to keep non-native species from competing with the blowout penstemon.
16. Limit the use of off road vehicles (OHVs) to designated roads and trails within 1.0 mile of known blowout penstemon populations, 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 blowout penstemon populations. Roads that have the potential to impact blowout penstemon plants 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.
17. 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 blowout penstemon populations. This condition will prohibit all authorized surface disturbance and OHV travel from sites containing blowout penstemon populations. Operations outside of the 0.25 mile buffer of the blowout penstemon population, such as “directional drilling” to reach oil or gas resources underneath the blowout penstemon habitat would be acceptable.
18. For known blowout penstemon 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 a 0.25 mile of known blowout penstemon populations. For existing oil and gas leases with known blowout penstemon populations, the BLM will require the COA in conservation measure 17 above including the same 0.25 mile buffer area around those known blowout penstemon populations.
19. The disposal (sale and removal) of salable minerals, which includes sand, is a discretionary BLM action and is prohibited within a 0.25 mile buffer area of known blowout penstemon populations.

20. To prevent loss of habitat for the blowout penstemon, 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* blowout penstemon habitat, 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 blowout penstemon will not be exchanged or sold, unless it benefits the species.
21. All proposed rights-of-way projects (powerlines, pipelines, roads, etc.) will be designed and locations selected at least 0.25 mile from any known blowout penstemon habitat to minimize disturbances. If the avoidance of adverse affects is not possible, the BLM will re-initiate consultation with the USFWS.
22. All proposed projects will be designed and locations selected to minimize disturbances to known blowout penstemon populations, 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 blowout penstemon populations without concurrence of the USFWS and the BLM authorized officer. No activities will be authorized within 0.25 miles of any known blowout penstemon populations during the essential growing season time period (from April 15 to September 15, the growing, flowering and fruiting stages) to reduce impacts to this species.

## **BEST MANAGEMENT PRACTICES**

The following best management practices, if implemented, would minimize adverse effects caused by implementation of the management actions provided in the four applicable RMPs

23. 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 blowout penstemon conservation measures, determined as appropriate by the USFWS.
24. Designate Areas of Critical Environmental Concern (ACECs) for the known populations of blowout penstemon (will add future populations to the ACEC as they are found) within all four affected Field Offices, beginning with the Rawlins FO. If these known populations of blowout penstemon are designated as an ACEC, they 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).
25. The BLM will participate in the development of both, a conservation agreement, assessment and strategy and a species specific recovery plan for the blowout penstemon in coordination with the USFWS and other agencies as appropriate. Populations and habitat of the blowout penstemon on BLM-administered lands will be monitored to determine if recovery/conservation objectives are being met.

26. Limit the use of off highway vehicles (OHVs) to designated roads and trails within 1.0 mile of potential blowout penstemon habitat, with no exceptions for the performance of necessary tasks other than fire fighting and hazardous material cleanup allowed using vehicles off road. No OHV competitive events will be allowed within 1.0 mile of potential blowout penstemon populations.
27. Coordinate with the USFWS, the National Resource Conservation Service, and private landowners to ensure adequate protection for the blowout penstemon and its habitat when new activities are proposed, and to work proactively to enhance the survival of the plant.
28. To prevent grazing of blowout penstemon plants by livestock, keep livestock at least 0.25 mile away from known blowout penstemon populations during the essential growing season (from April 15 to September 15 – the growing, flowering and fruiting stages) through herding of livestock away from known blowout penstemon populations or by excluding livestock from pastures with known blowout penstemon populations.
29. Known blowout penstemon habitat should be fenced to keep livestock from grazing blowout penstemon plants. However, this is usually not practicable due to the difficulty in placing fences in a sandy substrate and high maintenance costs or the inability to maintain the fences at all. Placement of permanent fencing, or temporary electric fences around blowout penstemon populations and habitat could be done on a larger scale by fencing off a much larger area around sand dunes. Generally the sand dune complexes that comprise blowout penstemon habitat are very extant, sometimes running for dozens of miles, making fencing difficult to impossible. In the unlikely event that permanent fencing is placed around known blowout penstemon populations or habitats during the essential growing season, mineral supplements and water sources may be placed outside of the fences closer than the 1.0 mile specified in the conservation measures, to the known blowout penstemon habitat at the discretion of the BLM's authorized officer.
30. In the event that a new population of blowout penstemon is found, the USFWS Wyoming Field Office (307-772-2374) will be notified within one week of discovery.
31. Initiate land tenure adjustments to acquire lands with populations of blowout penstemon or potential habitat to ensure a higher level of protection under the ESA on Federal lands for the blowout penstemon.
32. To prevent loss of habitat for the blowout penstemon, 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* blowout penstemon habitat, the BLM will survey to assess the potential for the existence of blowout penstemon. While it is difficult to assess whether the blowout penstemon 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 blowout penstemon, 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 blowout penstemon habitat may be used for reintroduction efforts and is important for the recovery and enhancement of the species.

## Research/Monitoring/Inventories

33. Form a steering committee to develop and prioritize management practices and assist BLM and USFWS with research projects.
34. A comprehensive inventory of the Dune Pond CMA area for blowout penstemon should be completed (Rawlins FO).
35. Conduct inventories for blowout penstemon in areas with potential habitat in the Rawlins, Casper, Rock Springs, and Lander FOs (The University of Wyoming, Wyoming Natural Diversity Database recently completed a “Survey of Penstemon haydenii (Blowout Penstemon) in Wyoming 2004,” which documented all known locations of blowout penstemon in Wyoming through 2004).
36. Maintain a database of all searched, inventoried, or monitored blowout penstemon sites.
37. Analyze vegetation treatments (mowing, prescribed fire, mechanical treatments, etc.) in known or potential blowout penstemon habitat for impacts to the species.
38. Monitor blowout penstemon sites for invasion by noxious and invasive plant species.
39. Establish monitoring, biological, ecological, 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. The Rawlins FO is currently conducting pollination studies through Utah State University, USDA ARS Bee Biology & Systematics Laboratory.

## Collection

40. Collect and bank blowout penstemon 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

41. Train law enforcement personnel on protections for the plant and its habitat, its status, and current threats to its existence.
42. Educate resource specialists, rangers, and fire crews about the blowout penstemon and its habitat to help with project design for the general area and for fire suppression actions occurring in potential habitat for the blowout penstemon and on the habitat characteristics and plant identification for the plant, so that if they encounter a penstemon occurring in sandy habitats, they can report it to their office threatened and endangered species specialist.

## **Introduction/Reintroduction**

43. 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 blowout penstemon. The objective would be to reintroduce populations of blowout penstemon into areas of historic occurrence and introduce new populations in suitable habitat within the plant's historic range.
44. Develop propagation techniques and use them to reintroduce/introduce the blowout penstemon and to repopulate known populations in the event population recovery becomes necessary.

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## 10.0 APPENDIX A

### SUMMARY OF BLOWOUT PENSTEMON EFFECTS DETERMINATIONS AND LIST OF BLM MANAGEMENT ACTIONS AND ACTIVITIES

This appendix contains a summary of the blowout penstemon effects determinations (**Table A-1**) and a list of BLM management actions with detailed activities that occur in the FOs (**Table A-2**). These detailed activities can serve as a checklist to review and consider during consultations for individual projects. The evaluation of the impact of a given management action and its associated activities will vary depending on the intensity and duration of the activity, its location within the FO, and the particulars of that activity in that FO.

<b>TABLE A-1 SUMMARY OF BLOWOUT PENSTEMON EFFECTS DETERMINATIONS</b>				
Resource Management Plan (RMP)  Management Action	Great Divide (Rawlins FO)	Green River (Rock Springs FO)	Lander (Lander FO)	Platte River (Casper FO)
Access	-----	-----	NLAA-d	-----
ACECs	NE	-----	NLAA-b	-----
Air Quality (see Soil/ Water/Air)	(NLAA-b)	NLAA-b	(NLAA-b)	(NLAA-b)
Cultural Resource Management	NLAA-d	-----	-----	NLAA-d
Cultural/paleo./historical	-----	NLAA-d	NLAA-d	-----
Energy & Minerals Management	-----	-----	NLAA-d	NLAA-d
Fire Management	NLAA-d	NLAA-d	NLAA-d	NLAA-d
Forest Management	NE	NE	NE	NE
Hazardous Materials	-----	NLAA-d	-----	-----
Lands and Realty	NLAA-d	NLAA-d	-----	NLAA-d
Land Ownership & Utility Systems			NLAA-d	
Livestock Grazing	LAA	NLAA-d	NLAA-d	NLAA-d
Minerals and Geology	NLAA-d	NLAA-d	-----	-----
ORV/OHV use	-----	NLAA-d	NLAA-d	-----
Paleontology	NLAA-d	-----	-----	-----
Recreation	-----	NLAA-d	NLAA-d	-----
Recreation/ORV	NLAA-d	-----	-----	NLAA-d
Sens. Plants/Vegetation	NLAA-b	-----	-----	-----
Soil/Water/Air	NLAA-d	-----	NLAA-d	NLAA-d
Soil/Water(Watershed)	-----	NLAA-d	-----	-----
Special Management Areas - ACECs	-----	NLAA-b	-----	NLAA-b
Special Status Species Management	-----	NLAA-b	-----	-----
Vegetation	-----	NLAA-d	-----	-----
Visual Resource Management	NLAA-b	NLAA-b	-----	-----
Wild Horses	NE	NLAA-d	NLAA-d	-----
Wilderness	-----	NLAA-b	NLAA-b	-----
Wildlife and Fish Management	NLAA-d	NLAA-d	NLAA-d	NLAA-d

<b>TABLE A-2 LIST OF BLM MANAGEMENT ACTIONS AND ASSOCIATED ACTIVITIES</b>
<b>Air Quality</b>
1) Apply dust control measures
2) Collect meteorological and/or air quality data
3) Cover conveyors at mine sites
<b>Cultural/Paleontological/Historical</b>
1) Identify and record cultural resources (including excavation and photography)
2) Photography
3) Inventory cultural resources
4) Develop interpretive sites
5) Use hand tools, power tools, heavy machinery
6) Field activities
7) Allow collection of invertebrate fossils
8) Stabilize deteriorating buildings
9) Surface disturbing activities
10) Map and collect surface material
11) Excavation
12) Stabilize erosion
13) Develop campgrounds
14) Cultural resource investigation
15) Fence cultural resources
<b>Fire Management</b>
1) Fire suppression
2) Damage rehabilitation
3) Prescribed burning
4) Construct firelines
5) Use off-road vehicles
6) Use heavy equipment
7) Use of hand tools and heavy machinery
8) Use bulldozers
9) Use chemical fire suppression agents (ground based)
10) Bulldozers in riparian and wetland areas
11) Fire retardant drops containing chemical dyes (aircraft dispersal)
<b>Forest Management</b>
1) Rehabilitation surveys
2) Assess effects of grazing
3) Allow firewood collection
4) Timber harvesting
5) Planting harvested areas
6) Fencing regenerated areas
7) Clearcuts

<b>TABLE A-2 LIST OF BLM MANAGEMENT ACTIONS AND ASSOCIATED ACTIVITIES</b>
8) Selective cutting
9) Slash disposal
10 Allow harvest
11) Site regeneration
12) Stand replacement
13) Precommercial thinning
14) Firewood, posts, poles, Christmas trees, wildlings
15) Pursue legal access
16) Commercial thinning
17) Skidder-type yarding
18) Logging operations
19) Cable yarding
20) Roads and landings
21) Logging activity
22) Prescribed burning
23) Establish new seedlings
24) Chaining
25) Shearing
26) Road development
27) Install drain culverts, water bars, or ditches
28) Cut and remove diseased trees
29) Artificial regeneration
30) Slash will be lopped and scattered, roller chopped, or burned
31) Helicopter logging
32) Disease treatment by spraying
33) Spraying of Grasses and shrubs
<b>Geothermal</b>
1) Vehicle traffic
2) Road construction
3) Pod and facility construction
4) Powerline construction
<b>Hazardous Material</b>
1) Provide warnings
2) Establish precautions
3) Use precautionary measures
4) Secure and dispose of hazardous waste discharged on public lands
5) Report, secure, and clean up public lands contaminated with hazardous wastes
<b>Lands and Realty</b>
1) Stock driveway withdrawals
2) Locatable mineral entry withdrawals
3) Lease acres for landfills
4) Establish protective withdrawals

<b>TABLE A-2 LIST OF BLM MANAGEMENT ACTIONS AND ASSOCIATED ACTIVITIES</b>
5) Acquire access easements
6) Acquire conservation easements
7) Disposal or transfer of public lands through desert land entry, public sale, exchange, State of Wyoming indemnity selection, or Recreation and Public Purposes (R&PP) leases or patents
8) Designate existing routes as right-of-way corridors
9) Pursue public access
10) Pursue cooperative agreements
11) Leases and disposals
12) Develop stipulations
13) Issue rights-of-way and leases (utility transportation corridors, communication sites)
14) Temporary use permits
15) New withdrawals
16) Seek legal access to timber management areas
17) Fence revegetation sites
18) Block linear rights-of-way to vehicle use
19) Road construction
20) Construction of powerlines, communication towers, pipelines, irrigation ditches, and roads
21) Develop recreation site facilities
22) Designate corridors
23) Adjust corridors
24) ROW: powerlines, pipelines, ditches and canals, roads, well pads, reservoirs, buried telephone and fiber optic lines, wind power generation farms and facilities, compressor stations and other facilities
25) Road closures/rehabilitation
26) Designate, cancel, or change stock trail driveways
<b>Livestock Grazing</b>
1) Designate stock trails
2) Livestock conversions
3) Livestock grazing
4) Construct exclosures
5) Provide access to water, develop stock ponds
6) Design and implement grazing systems (AMPs)
7) Provide salt or mineral supplements
8) Use safe and effective prairie dog control measures
9) Modify kinds of livestock and season of livestock use
10) Perform project work to enhance and improve riparian zones
11) Improve resource conditions
12) Noxious weed control
13) Control predators
14) Vegetation manipulation projects
15) Change composition of existing vegetation
16) Manage leases
17) Develop management plans and agreements
18) Range improvement projects
19) Abolish or change stock trails/driveways

<b>TABLE A-2 LIST OF BLM MANAGEMENT ACTIONS AND ASSOCIATED ACTIVITIES</b>
20) Fence
21) Develop water facilities (catchments, reservoirs, springs, pipelines, and wells)
22) Sagebrush spraying
23) Prescribed fire treatment
24) Livestock grazing authorization (adjust season of use, distribution, kind, class, and number of livestock)
25) Implement new grazing systems
26) Establish salt stations
27) Supplement feeding authorization
28) Prescribed fire
29) Mechanical or biological vegetative treatments
30) Use heavy equipment
31) Construct, maintain and modify fences
<b>Minerals</b>
1) Apply dust control measures
2) Restrict flaring of natural gas
3) Lease with a “no surface occupancy” restriction
4) Lease with seasonal restrictions
5) Lease with other standard surface protection restrictions
6) Control/limit emissions
7) Reservoirs associated with water disposal
8) Compressor stations, product enhancement and disposal facilities
9) Pipelines associated with leases or units
10) Construction of new above-ground powerlines
11) Leasable minerals – authorization of competitive lease list for oil, gas, coal, oil shale, and geothermal steam
12) Leasable minerals – development and construction of coal pits, oil wells, gas, oil shale, and geothermal steam
13) Leasable minerals - construction and initial reclamation of coal pits, well pads, access roads, and reserve pits
14) Leasable minerals –surface reclamation for oil, gas, and coal
15) Locatable mineral - exploration and development (gold, silver, cobalt, etc.)
16) Power lines associated with leases or units
17) Wind power associated with leases or units
18) Saleable minerals – mineral material sales (sand and gravel, decorative stone, aggregate)
19) Geophysical exploration
<b>ORV Use</b>
1) Designate and implement closed areas for ORV Use
2) Designate and implement limited areas for ORV Use
3) Designate and implement open areas for ORV Use
4) Post signs
3) Monitor off-road vehicle use
4) Permit ORV events

<b>TABLE A-2 LIST OF BLM MANAGEMENT ACTIONS AND ASSOCIATED ACTIVITIES</b>
5) Allow use of motorized over-the-snow vehicles
6) Perform necessary tasks requiring off-road vehicle use
<b>Recreation</b>
1) Allow casual recreational use (hiking, cross-country skiing, snowshoeing, etc.)
2) Restrict recreational use
3) Allow fishing and floatboating opportunities
4) Permit competitive recreational events
5) Maintain developed and undeveloped recreation sites
6) Allow camping
7) Develop public water sources for recreation facilities
8) Designate road use
9) Designate recreation areas
10) Allow hunting
11) Develop management plans
12) Designate ORV use
13) Identify hazards on the river
14) Maintain developed and undeveloped recreation sites
15) Provide public facilities and continued access
16) Allow use of motorized over-the-snow vehicles
17) With some exceptions, limit motorized vehicles to existing trails
18) Maintain public access
19) Pursue rights-of-way
20) Maintain or develop recreation sites and facilities
21) Monitor recreational use
22) Enforce recreation-oriented regulations
23) Patrol high-use areas and update recreational potential
24) Monitor, evaluate, and update recreational potential
25) Conduct field inventories
26) Place boundary signs and interpretive markers
27) Camping, hunting, fishing, off-road vehicle use
28) Construct and use roads
29) Add developments as opportunities arise
30) Develop campgrounds
31) Develop recreational trails
32) Cut trees and firewood
33) Construct and use roads
34) Commercial recreation uses
<b>Special Areas</b>
1) Protect petroglyphs, artifacts, and cultural deposits from weathering and vandalism
2) Land exchange
3) Close areas where accelerated erosion is occurring
4) Apply restrictions on ground-disturbing activities
5) Guide supervised tours

<b>TABLE A-2 LIST OF BLM MANAGEMENT ACTIONS AND ASSOCIATED ACTIVITIES</b>
6) Evaluate noxious weed and grasshopper control measures
7) Logging and heavy equipment use restrictions
8) Develop recreational trails
<b>T&amp;E Species</b>
1) Provide habitat
2) Protect known populations
3) Close known locations to surface disturbing activities, mineral material sales, off-road vehicle use, and the use of explosives and blasting
4) Conduct surveys
<b>Vegetation</b>
1) Pursue the acquisition of additional riparian areas
2) Plant species surveys
3) Conduct prescribed burns
4) Implement weed control programs
5) Plant trees
6) Improve riparian habitat
7) Use biological controls including species-specific insects and livestock grazing
8) Use mechanical control, including cutting and thinning with hand tools
9) Use heavy mechanical control, including brush beating, cutting, and thinning with machinery
10) Use chemical control (including aerial spraying)
11) Use of fire
12) Implement planting and seeding
<b>Visual</b>
1) Require facilities to blend with the natural environment
2) Reclaim watershed projects and water wells
<b>Water Quality, Watershed and Soils Management</b>
1) Prohibit surface discharge of produced water
2) Allow for surface discharges of produced water approved by the Wyoming DEQ
3) Restrict surface disturbance and prohibit new permanent structures
4) Limit surface disturbance and prohibit new permanent structures
5) Close areas, including roads, where accelerated erosion is occurring
6) Improve, maintain and restore riparian/wetland areas by restoring hydrologic function
7) Stream improvement practices such as increasing sinuosity in channels by using hand tools to construct natural structures which include rock or other natural materials
8) Design and install stream crossings that allow for appropriate sediment and flow passage
9) Develop riparian/wetland exclosures
10) Construction of artificial instream structures such as impoundments using heavy equipment, and steel, geo-textile fabrics, and other materials
11) Cutting, planting, and seeding to restore function in riparian/wetland areas
12) Implement pitting and maintain water-spreader dikes

<b>TABLE A-2 LIST OF BLM MANAGEMENT ACTIONS AND ASSOCIATED ACTIVITIES</b>
<b>Wild Horse</b>
1) Construction of short-term temporary facilities (traps and holding facilities)
2) Construction of long-term permanent facilities (corrals, boundary fences, water development)
3) Gatherings using helicopters and riders
4) Herding, corralling, transporting
<b>Wild Rivers</b>
1) Studies on segments of river
<b>Riparian</b>
1) Livestock conversions
2) Herding, livestock driving
3) Fence
<b>Access</b>
1) Pursue access across private lands
2) Purchase rights-of-way or easements, land exchange, reciprocal rights-of-way
3) Rehabilitate access roads no longer needed
<b>Surface Disturbance Restrictions</b>
1) Restrict surface disturbance