United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
4000 Airport Parkway
Cheyenne, Wyoming 82001

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June 7, 2005

Memorandum

To: Robert Bennett, State Director, Bureau of Land Management, Cheyenne State Office, Cheyenne, Wyoming

From: Brian T. Kelly, Field Supervisor, U.S. Fish and Wildlife Service, Wyoming Field Office, Cheyenne, Wyoming /s/ Brian T. Kelly

Subject: Amended Consultation for the Impacts from the Bureau of Land Management's Lander Resource Management Plan to the Desert Yellowhead (*Yermo xanthocephalus*) and its Designated Critical Habitat

This amended biological opinion (BO) is in response to the U.S. Bureau of Land Management's (Bureau) request to amend our original BO due to a change in effects determination for the impacts of the Bureau's Lander Resource Management Plan (RMP) to the federally threatened desert yellowhead (*Yermo xanthocephalus*) in Fremont County, Wyoming. The desert yellowhead is known from only one population in the world located in the Bureau's Lander Beaver Creek Resource Management Unit (RMU). The U.S. Fish and Wildlife Service (Service) has reviewed the biological assessment (BA) and supplemental information submitted by your office May 9, 2005 describing the effects of the Lander RMP and proposed Bureau-committed conservation measures on the desert yellowhead. Your July 2, 2004, request for formal consultation was received on July 6. This correspondence is provided in accordance with section 7(a)(2) of the Endangered Species Act of 1973 (Act), as amended (50 CFR §402.13 and §402.14).

The amended BO contained within this document addresses potential adverse effects to the desert yellowhead from the described Bureau activities of one planned program as well as the Bureau's commitment to the Conservation Measures listed in the Bureau's BA. The planned program of the Lander Field Office with the potential to have/cause adverse effects to the desert yellowhead is Livestock Grazing Management.

In addition, an in-depth informal evaluation of effects from other Bureau authorized programs is included for ease of use by the Bureau and the Service. Supplemental details regarding any specific program description, where lacking in the Desert Yellowhead BA (BLM 2004), were taken from other recent programmatic consultation documents with the Wyoming Bureau (BLM 2003; USFWS 2004a, 2004b), as necessary.

Consultation History

The Service and the Bureau began statewide programmatic consultation on impacts of Bureau activities to the desert yellowhead on October 22, 2001. Numerous versions of electronic drafts of the BA and appendices were provided to the Service point of contact periodically. The Service received the Bureau request for formal consultation on this proposed action on July 6, 2004. On August 17, 2004, the Service issued a memo to the Bureau notifying them that all materials necessary for the initiation of formal consultation had been received. A subsequent request by the Bureau to alter prioritizations for consultation delayed the completion of the original BO. A draft of the BO was provided to the Bureau on December 1, 2004. Comments on that draft were received from the Bureau on March 17, 2005. The Service then proceeded to finalize the consultation. A BO was finalized over this action on March 23, 2005 (USFWS 2005). However, subsequent to that date, the Bureau requested that additional comments from the Lander Field Office be incorporated into the BO as well as a change to its effects determination for the Off-Road Vehicle Management program based on a recent road closure in the area. Based on the new information received May 10, 2005, the Service has amended the BO to its present form.

This consultation is based primarily on our review of your BA (BLM 2004), the Bureau-committed Conservation Measures (Appendix) as described in your July 2, 2004 letter of initiation of formal consultation, the Bureau's supplemental consultation memorandums of August 3, 2004 and May 9, 2005, personal communications which occurred with the Bureau on March 17 and April 26, 2005, and comments received from the Bureau on March 31, 2005. A complete administrative record of all documents and correspondence concerning this consultation are on file in the Wyoming Ecological Services Field Office.

Informal Consultation

The Bureau has also determined that certain programs under the Lander RMP, coupled with the Bureau's commitment to the conservation measures listed in the Appendix will have "no effect" or are "not likely to adversely affect" the desert yellowhead or its designated critical habitat. These twelve programs are Energy and Minerals Management, Fish and Wildlife Management, Rare Plants and Unique Plant Communities Management, Forest Management, Landownership Adjustments and Utility Systems Management, Recreation Management, Cultural/Natural History Management, Fire Management, Access Management, Soils/Water/Air Management, Wilderness Management, Off-Road Vehicle (ORV) Management, and Areas of Critical Environmental Concern (ACEC) Management. In addition, the Bureau has determined that the Grazing Management Program is "not likely to adversely affect" the desert yellowhead's designated critical habitat. Although vegetation management activities are not designated as a separate program in the Lander RMP, effects from vegetation management activities were analyzed and determinations were made for them as well. Some of the identified Lander RMP programs contained overlapping activities and any activities which overlapped among two or more programs are described under the program to which they were most closely associated.

The Bureau's desert yellowhead BA made “not likely to adversely affect” or "no effect" determinations for the effect of certain programs on the desert yellowhead and its designated critical habitat in the Lander resource area. These determinations are displayed in Tables 1 & 2 below.

Table 1. Desert Yellowhead "not likely to adversely affect" and "no effect" determinations made by the Bureau.

Activity Type	Determination
Energy and Minerals	Not likely to adversely affect
Fish and Wildlife	Not likely to adversely affect
Rare Plants and Unique Plant Communities	No effect
Forest Management	No effect
Landownership Adjustments	Not likely to adversely affect
Recreation Management	Not likely to adversely affect
Cultural/Natural History	Not likely to adversely affect
Fire Management	Not likely to adversely affect
Access	Not likely to adversely affect
Soils, Water, and Air Management	Not likely to adversely affect
Off-Road Vehicle Management	Not likely to adversely affect
Wilderness	No effect
ACECs	No effect
Vegetation	Not likely to adversely affect

Table 2. Desert Yellowhead Designated Critical Habitat "not likely to adversely affect" and "no effect" determinations made by the Bureau.

Activity Type	Determination
Energy and Minerals	Not likely to adversely affect
Fish and Wildlife	Not likely to adversely affect
Rare Plants and Unique Plant Communities	No effect
Forest Management	No effect
Landownership Adjustments	Not likely to adversely affect
Recreation Management	Not likely to adversely affect
Cultural/Natural History	Not likely to adversely affect
Fire Management	Not likely to adversely affect
Access	Not likely to adversely affect
Soils, Water, and Air Management	Not likely to adversely affect
Wilderness	No effect
ACECs	No effect
Off-Road Vehicles Management	Not likely to adversely affect
Livestock Grazing (and Wild Horse) Management	Not likely to adversely affect
Vegetation	Not likely to adversely affect

The Service concurs with your determinations that activities listed in Table 1 are not likely to adversely affect or have no effect on the desert yellowhead. Similarly, the Service concurs with your determinations that activities listed in Table 2 are not likely to adversely affect or have no effect on the designated critical habitat of the desert yellowhead. A description of the programs and a summary of the rationale behind the effects determinations follow.

The following discussion is an overview of the Lander Bureau Resource Management Plan Activity Programs and Bureau-committed conservation measures which are not likely to adversely affect or will not affect the desert yellowhead or its designated critical habitat, now or in the foreseeable future. Conservation Measures (Appendix) were identified in the Bureau's Programmatic Desert Yellowhead BA and the Bureau has committed to implement those conservation measures. For the purposes of this consultation, the Service has analyzed the effects to the desert yellowhead taking into account the Bureau's commitment to the implementation of the conservation measures as identified in the Appendix. As per the Bureau's letter, commitment of the Bureau to the conservation measures will be formalized through a maintenance action to the Lander RMP following completion of this formal consultation.

As per section 7 of the Act, the Bureau will conduct site-specific consultation with the Service prior to authorization of any actions authorized under the Lander RMP which "may affect" the desert yellowhead (*Yermo xanthocephalus*) or its designated critical habitat. These future consultations will provide a means for site-specific analysis and documentation of levels of impact to the desert yellowhead or its designated critical habitat.

Energy and Minerals Management.
Program Description. The Bureau's Energy and Minerals Program is divided into 3 categories. These categories are salable minerals, leasable minerals, and locatable minerals.

Salable Minerals. The mining of salable minerals is authorized under the Materials Act of 1947, as amended, and is a discretionary action of the Bureau. Salable minerals include sand, gravel, sandstone, shale, limestone, dolomite, and granite rock. Historical use of these materials was for building materials, road surfaces, and tools. Today, salable minerals are generally used for maintaining roads and activities associated with the oil and gas industry. The Bureau provides sand, gravel, and stone from federal mineral deposits as necessary to meet the need for federal, state, and local road construction and maintenance projects under this category.

Before issuing contracts or free use permits for salable minerals, the Bureau conducts appropriate environmental assessments. These include special studies or inventories of cultural values, threatened or endangered plant and wildlife species, or other resources. Conditions may be included in the terms of the contract to ensure protection of the natural resource found there and reclamation of the land following project completion. Site reclamation is required following any surface disturbing mining activity for salable minerals. Reclamation of disturbed sites is important to be sure that the land can later be used productively for other purposes. Reclamation includes removing all surface debris, re-contouring, reducing steep slopes, and planting vegetation. All reclamation proposals must conform to State agency requirements and must be approved by the Bureau.

Salable minerals are a resource over which the authorized officer has discretionary authority. All surface disturbing activities, including the mining of salables, are subject to no surface occupancy (NSO) restrictions to protect threatened or endangered species habitat. The Bureau has agreed to not permit surface disturbing activities within the desert yellowhead site. The Bureau will prohibit the disposal of salable minerals at the desert yellowhead site and its designated critical habitat (Appendix).

Leasable Minerals. Leasable minerals include solid minerals such as coal, uranium and bentonite from acquired lands, and fluid minerals such as oil and gas.

The Mineral Leasing Act of 1920 provides that all public lands are open to oil and gas leasing unless a specific order has been issued to close an area. The Wyoming Bureau has some of the most prolific oil-producing areas in the Rocky Mountains. Once acreage is nominated by the public to be included in an oil and gas lease sale, information regarding the acreage is sent to the appropriate Bureau field office via the parcel list to be reviewed and stipulated by the field office for protection of wildlife and other sensitive resources. These stipulations become part of the lease.

Exploration, development, and reclamation are common phases of most leases. The mineral program involves opening areas to geophysical (seismic) exploration; permitting the exploration; allowing oil, gas, and mineral development; and leasing and developing oil, gas, and geothermal steam resources. Seismic exploration involves the use of shock waves to describe the mineral structure of the Earth's subsurface. This technology is used to locate reserves of oil and gas resources. Before seismic activity is completed, a Notice of Intent which gives the location and type of activity, and the results of an on-the-ground cultural inventory must be filed. The Bureau conducts an in-office study as well as environmental analysis to determine if any threatened or endangered species will be affected.

Prior to oil and gas drilling activities, an Application-for-Permit-to-Drill (APD) must be approved and a site-specific Environmental Assessment (EA) completed for each APD. Drilling operations are inspected regularly as are production facilities. All surface disturbing activities are subject to no surface occupancy (NSO) restrictions to protect threatened or endangered species habitat. The Bureau has agreed to apply a Condition-of-Approval (COA) on all APDs within the desert yellowhead site and designated critical habitat, prohibiting all surface disturbing activities. The Bureau does not foresee approving an exception to a lease NSO restriction or exception to a COA on any APD within the desert yellowhead site or its designated critical habitat. The Bureau will not approve an exception to a lease NSO restriction or exception to a COA on any APD within the desert yellowhead site or its designated critical habitat until after the Bureau completes reinitiation of section 7 consultation according to the Act over the effects of approving that exception.

Ancillary development for oil and gas activities involves the construction of roads, pads, and other facilities; and the construction of new above ground powerlines. Stipulations involve implementing leases with no surface occupancy restrictions, seasonal restrictions, or with other

standard surface protection restrictions; negotiating mitigated impacts between lessees and authorized officer; deciding mitigation measures and limitations, and reclamation. Reclamation involves correcting any disturbance made by the oil and gas operation. Reclamation activities take place following the expiration of the lease. Reseeding, reshaping, or road destruction are all activities involved with oil and gas reclamation.

Under the current Lander RMP, the entire Beaver Creek RMU including the desert yellowhead site is currently open for oil and gas leasing. According to the Bureau, any oil and gas leases issued in the designated critical habitat of desert yellowhead will have an NSO restriction. The Bureau does not foresee approving an exception to a lease NSO restriction or exception to a COA on any APD within the desert yellowhead site or its designated critical habitat. The Bureau will not approve an exception to a lease NSO restriction or exception to a COA on any APD within the desert yellowhead site or its designated critical habitat until after the Bureau completes reinitiation of section 7 consultation according to the Act over the effects of approving that exception.

In the past, there has been interest in the oil resources in the general vicinity of the desert yellowhead, however all three wells drilled there within the last six years were dry holes.

Locatable Minerals. Bentonite, uranium, and gypsum are the principle locatable minerals of Wyoming Bureau Resource Management Areas. Other locatable metallic minerals include silver, gold, platinum, cobalt, and other precious minerals. Actions associated with commercial locatable minerals include surface disturbance for mining, reclamation, and construction of access roads, buildings, and utility lines. Small scale mining may occur in the Bureau areas in Wyoming. All lands must be reclaimed after expiration of a mining lease.

The Beaver Creek RMU is currently open for locatable mineral exploration and development, except for 1,710 acres around the Split Rock Landmark, Rocky Ridge, the Split Rock Interpretive Site, and the Aspen Grove Site. These areas were withdrawn from appropriations. An additional 280 acres around Rocky Ridge have been proposed to be withdrawn from appropriations. The Bureau has agreed to withdraw the designated 360 acre designated critical habitat for the desert yellowhead from mineral location and entry under the General Mining Law of 1872. To finalize the withdrawal of this 360 acres, the Bureau is first required to: (1) complete a NEPA analysis, (2) update (if appropriate) the original mineral report, and (3) legally describe the lands proposed for withdrawal which are as follows. In Fremont County, Wyoming; this area is identified on U.S. Geological Survey 7.5" quadrangle maps Dishpan Butte and Sweetwater Station, Wyoming; T31N, R95W, Section 27, SW 1/4; T31N, R95W, Section 34, NW 1/4; and the W1/2 of the W1/2 of the NE 1/4, for a total of 360 acres. Upon completion of the necessary reports, the Bureau will then prepare a public land order and accompanying documentation for submission to the U.S. Department of Interior for approval of the withdrawal. Processes to complete the withdrawal of this site are expected to be finalized December 2005.

Anticipated Effects. No direct effects to the desert yellowhead population are expected from leasable or salable minerals management because the Bureau is committed to applying a lease NSO restriction and COA on all APDs within the desert yellowhead site and designated critical

habitat, prohibiting all surface disturbing activities. The Bureau has stated that this provision will be applied in all instances in the desert yellowhead site or its critical habitat (BLM 2004b)(Appendix). The COA will eliminate the possibility that any oil and gas drilling activity will be allowed within the desert yellowhead site or its critical habitat. The Bureau does not foresee approving an exception to a lease NSO restriction or exception to a COA on any APD within the desert yellowhead site or its designated critical habitat. The Bureau will not approve an exception to a lease NSO restriction or exception to a COA on any APD within the desert yellowhead site or its designated critical habitat until the Bureau completes reinitiation of section 7 consultation according to the Act over the effects of approving that exception.

No direct effects are expected from salable minerals management because the Bureau will prohibit the disposal of salable minerals at the desert yellowhead site and designated critical habitat.

Although locatable exploration and development is generally allowed in the Beaver Creek RMU and the area specific to the desert yellowhead and critical habitat locations, any mining operations that exceed casual use must submit to the Bureau a notice or a plan of operations. To eliminate all possibility that Bureau-authorized locatable mineral activities could affect the desert yellowhead population or its critical habitat, the Bureau agrees to withdraw the designated 360 acre critical habitat area from locatable mineral location and entry under the General Mining Law of 1872 (Appendix).

Casual use locatable mineral mining activities although rare and not likely to occur in the desert yellowhead area could occur there without prior Bureau authorization and before the area is officially withdrawn from locatable mineral entry. The Bureau requires that "all [locatable mineral mining] operations, including casual use and operations under either a notice or a plan of operations shall be conducted to prevent unnecessary and undue degradation of the Federal lands and shall comply with all pertinent Federal and State laws, including . . . fisheries, wildlife, and plant habitat. The operator shall take such action as may be needed to prevent adverse impacts to threatened or endangered species, and their habitat which may be affected by operations (43 CFR 3809.2-2)." "Casual use operations are subject to monitoring by the authorized officer to ensure that unnecessary and undue degradation of Federal lands will not occur (43 CFR 3809.1-2)."

Once the area is withdrawn from mineral entry then locatable mineral mining, including casual use mining, would be unauthorized use of the area. However, there is a possibility that casual use mining activities could occur in the desert yellowhead area before the area is officially withdrawn from mineral entry. To further lessen the possibility that casual use locatable mineral mining activities would occur at or near the desert yellowhead site, on March 16, 2005, the Bureau completed an emergency road closure for the trail which leads to the desert yellowhead site and all roads within the designated critical habitat.

Based on the Bureau's description of the Energy and Minerals program and the Bureau's commitment to conservation measures listed in the Appendix such as the Bureau's prohibition of surface disturbing activities and the Bureau's commitment to withdraw the desert yellowhead site

from locatable mineral entry, the Service concurs that Bureau activities under the energy and minerals program are not likely to adversely affect the desert yellowhead or its designated critical habitat.

Fish and Wildlife Management.
Program Description. Through wildlife habitat management, the Bureau in Wyoming seeks to maintain biological diversity of plant and animal species and supports the Wyoming Game and Fish Department (WGFD) strategic plan population objective levels. To accomplish this, the Bureau maintains and 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 Bureau-administered public land surface in compliance with approved recovery plans.

Approximately 90 percent 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. Wildlife and fisheries management program activities may include: surveying, monitoring, habitat improvement activities, developing habitat management plans (HMPs), creating cooperative management areas (CMAs), developing stipulations and protective measures, acquiring land and easements, conducting inventories, and performing livestock or forestry related activities. The Bureau develops stipulations and protective measures including the authorization of withdrawals from some areas from mineral entry, limiting access of 4-wheel drive vehicles, snowmobiles, horseback riders, and pedestrians, prohibiting surface development, and imposing road closures. 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, and seeding. Other wildlife management activities include monitoring habitat, using prescribed burning; developing islands; managing accesses; authorizing agricultural entry and disposal; using surface protection mitigation; constructing artificial structures; using heavy equipment and hand tools; documenting resource damage; improving aquatic and riparian habitat; developing cooperative agreements to facilitate species transplants; chemically controlling pests, and removing exotic fish.

Development of routine projects to improve habitats for fish and wildlife and maintenance of existing projects will take place consistent with management objectives (BLM 2004). According to the Lander RMP, special management actions and projects to improve fisheries and associated riparian habitats in the Upper Sweetwater River and Beaver Creek drainages will be undertaken (BLM 2004) and habitat management plans will be developed in cooperation with the Wyoming Game and Fish Department (WGFD).

Anticipated Effects. The Lander RMP does not specifically plan for any future habitat improvement projects for fish and wildlife within the desert yellowhead site or its designated critical habitat (BLM 2004). Given the objectives and description of the Lander RMP fish and

wildlife management program, it is not expected that the Bureau will approve any fish and wildlife habitat enhancement project within the desert yellowhead site which will adversely affect the desert yellowhead or its designated critical habitat.

The Service concurs with the Bureau's determination that fish and wildlife management actions, as presented in the Lander RMP, are not expected to adversely affect the desert yellowhead or its critical habitat because the Bureau is committed to ensuring that any fish and wildlife management actions if they were to occur in desert yellowhead habitat would be designed to not adversely affect the desert yellowhead or its critical habitat (BLM 2004). In addition, the Bureau has committed to working with interested parties in the development and implementation of a monitoring plan for the desert yellowhead and its designated critical habitat. The plan will include regular patrol of the site for unlawful uses of the land and the monitoring of invasive weed populations. This plan will also include, but is not limited to, the inventory and monitoring of all vehicle access to the area for the purpose of restricting access of vehicles that pose a threat to the desert yellowhead population. The Bureau will also not approve location of mineral supplements or additional water sources for livestock, wild horses, or wildlife on public lands within 2 miles of the desert yellowhead site.

Based on the Bureau's description of the Fish and Wildlife Management program, the remote location of the only desert yellowhead site known in the world, and the commitment to conservation measures listed in the Appendix, the Service concurs that Bureau activities under this program are not likely to adversely affect the desert yellowhead or its designated critical habitat.

Rare and Unique Plant Communities Management.
Program Description. According to the Lander RMP direction under the Rare and Unique Plant Communities Management, a management plan will be developed to identify, protect, and maintain the Beaver Rim cushion plant and *Pinus flexilis/Agropyron spicatum* communities within the Beaver Creek RMU (BLM 2004). The rare plant community on Beaver Rim was officially designated as an Area of Critical Environmental Concern (ACEC) in the RMP Record of Decision (BLM 1987). The desert yellowhead site is not located within the Beaver Rim ACEC. No new ACECs are expected to be designated over the life of the Lander RMP.

Anticipated Effects. Management actions for rare plants and unique plant communities, as presented in the Lander RMP, are expected to have no effect on the desert yellowhead or critical habitat based on the lack of overlap between the Beaver Rim ACEC and the desert yellowhead site and critical habitat. Based on the Bureau's description of the Rare and Unique Plant Communities Management program and the fact that there is no overlap between management based on this program and the desert yellowhead site or its critical habitat, the Service concurs that Bureau activities as described in the RMP under this program will have no effect on the desert yellowhead or its designated critical habitat.

Forest Management.
Program Description. The Bureau's Forestry Program involves a variety of different activities, most of which involve timber harvesting. Other activities involve managing the forest for other

uses. During forest management activities for timber production in the pre-harvest phase, the Bureau allows the cutting and removal of diseased trees, disease treatment by spraying, and the spraying of grasses and shrubs. The Bureau allows precommercial thinning, chaining, and shearing. During actual harvesting activities, the Bureau allows timber harvesting, permits clearcuts, ensures slash disposal, allows commercial thinning, logging, and skidder-type yarding as well as cable yarding. The Bureau permits the construction of roads and landings for use in timber harvesting operations. Non-commercial timber harvest involves collection and cutting of firewood, Christmas trees, posts, poles, and saplings. During restoration efforts following timber harvesting, the Bureau ensures site regeneration and stand replacement; fences regenerated areas, and conducts rehabilitation surveys. During forest management for other activities, the Bureau assesses effects of grazing, manages forests for recreation, livestock grazing, and wildlife habitat and prescribed burning. Forest management activities that the Bureau engages in that involve all uses of the forest include acquiring easements, pursuing legal access, allowing road development, and installing drain culverts, and water bars.

According to the Lander RMP, most of the timber management in the RMP area will occur in the Green Mountain RMU (BLM 2004). Forest management practices in timber stands will be undertaken as needed to assure optimum growth conditions in all stands. No specific forest management actions are described in the Lander RMP for the Beaver Creek RMU.

Anticipated Effects. No forest management areas occur in the Beaver Creek RMU or near the desert yellowhead site (BLM 2004). For this reason, the Bureau anticipates that forest management actions intended for forested habitats within the Lander Resource Management Area will not impact the desert yellowhead or its designated critical habitat (BLM 2004). Based on the Bureau's description of the Forest Management program and the fact that there is no overlap between management based on this program and the desert yellowhead site or its designated critical habitat, the Service concurs that Bureau activities under this program will have no effect to the desert yellowhead or its critical habitat.

<u>Landownership Adjustments and Utility Systems Management.</u>
Program Description. The Landownership Adjustments and Utility Systems Management Program seeks to support multiple-use management goals of the Bureau resource programs; responds to public requests for land use authorizations, sales, and exchanges; and acquires and designates rights-of-way access to serve administrative and public needs.

Many rights-of-way granted by the Bureau for access roads, pipelines, communication sites, irrigation ditches, and electrical distribution lines are associated with oil and gas wells and production facilities. These rights-of-way may be temporary or extended for two years or longer. Land sales are disposals of or transfers of public lands through desert land entry, public sale, exchange, State of Wyoming indemnity selection, or recreation and public purposes leases or patents.

Withdrawals are typically to assist other federal agencies in the programs they administer, such as power site withdrawals to the U.S. Bureau of Reclamation, and communication site withdrawals to the U.S. Forest Service for National Forest system lands or for National Grasslands

administration. If granted, a withdrawal may have facilities constructed on it, an access road built, and there would be an increase in human activity to operate, monitor or maintain the site and its facilities.

According to the Lander RMP, the majority of the 2.5 million acres of public lands in federal ownership will be retained (BLM 2004). One hundred seventy-two tracts, encompassing approximately 24,000 acres, meet the basic criteria for disposal. Based on the analysis in the Lander RMP environmental impact statement (EIS) (BLM 1986), 108 of these tracts, encompassing 12,500 acres, could be considered for future disposal through either sale or exchange. Proposals for sale or exchange received in the future are to be considered on a case-by-case basis. Specific proposals that are deemed consistent with the objectives of the RMP could be approved without a planning amendment. Leases and disposals will continue to be used to meet the needs of local and state governments.

Proposals for sale or exchange that are received in the future, as well as leases under the Recreation and Public Purposes Act are to be considered on a case-by-case basis. Within the Lander Field Office, 172 tracts that encompass approximately 24,000 acres could be considered for disposal through sale or exchange. Twenty-five of these isolated tracts occur in the Beaver Creek RMU. Land adjustments could be approved without a planning amendment if they are consistent with the objectives of the RMP. The desert yellowhead site and its critical habitat do not occur within any of the 25 isolated tracts of land that are considered for exchange or sale and, therefore, will not be directly affected by any changes in landownership within the Beaver Creek RMU under the Lander RMP (BLM 2004). Given the remoteness and small size of the desert yellowhead site and the dedication of the Bureau to protect the desert yellowhead site, it is not expected that the Bureau will have any management actions under this program that will be likely to adversely affect the desert yellowhead. The Bureau has committed to no surface disturbance and to not exchanging or selling designated critical habitat for the desert yellowhead (BLM 2004).

Major utility and transportation systems will be located to make use of existing corridors whenever possible to provide for cost-efficient routes and protection of other resource values, including scenery and wildlife. Most of the area will be open for major utility systems. However, areas with the highest potential for conflicts already have been identified and will be avoided when practical. In high conflict areas, rights-of-way may be granted when no feasible alternative route or designated right-of-way corridor is available.

Under the Lander RMP, construction of major utility systems throughout the Beaver Creek RMU are to be allowed, except for three areas, including Oregon/Mormon Pioneer Trail corridor, the Sweetwater Canyon, and the Sweetwater Rocks. Rights-of-way might be granted within these three high-value resource areas if no feasible alternative route or designated route were available. Utility systems will be concentrated in existing corridors whenever possible (BLM 2004). These three areas do not include the desert yellowhead site.

All surface disturbing activities, including rights-of-way, are subject to the standard surface disturbing mitigation, including no surface disturbance restrictions to protect threatened or endangered species habitat. The Bureau has committed to permitting no surface disturbing activities in designated critical habitat of the desert yellowhead.

Anticipated Effects. It is expected that management actions for landownership adjustment and utility systems, as presented in the Lander RMP (BLM 1987), may affect, but are not likely to adversely affect, the desert yellowhead or its designated critical habitat. This determination is based on the committed conservation measures of the Bureau and the extremely low potential for the designation of rights-of-way and construction of power lines, pipelines, communication towers, and roads within the desert yellowhead site or critical habitat (BLM 2004).

Based on the Bureau's description of the Land Ownership Adjustments and Utility Systems program, the attached Bureau-committed conservation measures including a no surface disturbance restriction and a commitment to not exchange or sell designated critical habitat for the desert yellowhead, the Service concurs that Bureau activities under this program are not likely to adversely affect the desert yellowhead or its designated critical habitat.

Recreation Management.

Program Description. Recreation management activities include allowing recreational access and use by the public, developing recreational areas and campsites, imposing restrictions, acquiring recreational access, and assessing effects of recreational use to the environment. Recreational activities allowed by the Bureau include hiking, hunting, mountain biking, dog walking, wildlife viewing, cross-country skiing, boating, fishing, horseback riding, and camping. Large recreational events may include organized group hikes or horse endurance rides. Recreational land and access acquisition activities involve maintaining public access, pursuing rights-of-way, providing continued access, and pursuing land acquisition. Recreational site development includes maintaining or developing recreational sites and facilities, developing campgrounds, providing fishing and floating opportunities, maintaining developed and undeveloped recreational sites, adding developments as opportunities arise, adding interpretive markers, and constructing roads and interpretive sites. Development and enforcement of stipulations/protective measures includes enforcing recreation-oriented regulations, patrolling high-use areas and contacting users in the field. The Bureau places boundary signs, identifies hazards on rivers, restricts recreational uses; with some exceptions, limits motorized vehicles to existing trails, designates road use and recreation areas, requires facilities to blend with the natural environment, and conducts field inventories. There is the potential for recreational activities to occur year-round in Lander RMP area. (Note: Off-road vehicle use is covered under the ORV Management program for the Lander RMP.)

The Bureau staff of the Lander Field Office monitor recreational use throughout the RMP area. Enforcement is provided for recreation-oriented regulations and special designations. The Split Rock Interpretive Site is incorporated in the management plan for the Oregon/Mormon Pioneer Trail. This plan provides specific objectives for use by visitors, resource protection, and interpretative needs consistent with public demand. The remainder of the Beaver Creek RMU is

part of an extensive management area where dispersed recreation is encouraged (BLM 2004). Recreation management and maintenance in this area is minimal, with an emphasis on resolution of user conflicts and resource protection (BLM 2004).

Anticipated Effects. According to the BA, actions associated with recreation management have a very small potential to negatively impact the desert yellowhead (BLM 2004). Although recreation (excluding ORV use as discussed separately) could occur within the site, it is anticipated that any impacts that may result from recreational use of the site are highly unlikely given the remote location of the site and its current use (BLM 2004).

According to the BA, recreation management actions, as presented in the Lander RMP (BLM 1987), may affect, but are not likely to adversely affect the desert yellowhead or its designated critical habitat. This determination is based on the extremely low potential for recreational use (for which the Bureau has discretionary authority) to occur within the desert yellowhead site and designated critical habitat (BLM 2004).

Based on the Bureau's description of the Recreation program, and commitment to conservation measures listed in the Appendix, the Service concurs that Bureau activities under this program are not likely to adversely affect the desert yellowhead or its critical habitat.

Cultural/Natural History Management.
Program Description. Under this program, the Bureau performs a variety of activities to preserve, protect, and restore cultural and historical resources. During inventory activities, the Bureau 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 mitigation plans prior to other resource program surface disturbing activities. Inventory activities commonly entail the use of hand tools, power tools, or heavy machinery. The Bureau's 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 Bureau also seeks listing of eligible sites on the National Register of Historic Places, installs protective fencing of trail segments, stabilizes deteriorating buildings, acquires access to sites when necessary, performs certain surface disturbing activities, pursues withdrawal of areas from exploration and development of locatable minerals, designates avoidance areas, pursues cooperative agreements, and identifies and interprets historic trails. The Bureau performs cultural resource inventories normally in response to other surface disturbance activities. Inventories can include transects set a distance apart from each other.

Anticipated Effects. According to the BA, protection for any significant cultural resources found at the desert yellowhead site will also provide some protection to the desert yellowhead (BLM 2004). Surface-disturbing activities are avoided near significant cultural and paleontological resource sites and within 0.25 mile or the visual horizon of significant segments of historic trails and canals.

Cultural and natural history management actions may directly impact the desert yellowhead if they are conducted within the desert yellowhead site. However, given the remoteness of this site and the Bureau's commitment to not allow surface disturbing activities within the desert yellowhead site, there is a very low likelihood that any cultural and natural history management activities will actually occur at this site.

According to the BA, cultural and natural history management actions, as presented in the Lander RMP, may affect, but are not likely to adversely affect the desert yellowhead or critical habitat. This determination is based on the low likelihood that cultural and natural history resource management actions will occur at the desert yellowhead site or on designated critical habitat.

Based on the Bureau's description of the Cultural/Natural History Resources program, commitment to conservation measures listed in the Appendix including a no surface disturbance restriction, the Service concurs that Bureau activities under this program are not likely to adversely affect the desert yellowhead or its critical habitat.

Fire Management.

Program Description. The three major categories of activities involved with the Bureau's Fire Management Program are prescribed fire, fire suppression, and fire rehabilitation. During prescribed burning activities, the Bureau evaluates areas on a case-by-case basis, writes fire plans, builds fire breaks, coordinates with all necessary parties and conducts prescribed burns. Prescribed fires are those fires intentionally set and controlled by the Bureau and their cooperators to enhance natural resources in the area. Prescribed fire is also used to dispose of slash and residue from timber sales. Thinning activities are sometimes used to reduce the fuel levels before a prescribed fire. Some prescribed fires are conducted to improve wildlife habitat and grazing potential as well.

Because fire suppression activities are done on an emergency basis, only minimal preplanning for fire suppression can take place because of the expediency needed. Similarly, Section 7 consultation according to the Act often occurs "after the fact" due to the expediency necessary for wildfire suppression efforts. Recent trends in wildfire occurrence throughout the Wyoming Bureau lands are similar to trends throughout the west, with larger, catastrophic fires in recent years due to past fire suppression and the subsequent increase in fuels among other factors. Fire suppression activities can involve the use of off-road vehicles, hand tools and heavy equipment such as bulldozers. During fire line construction to contain wildfire, dozers may create a line down to bare soil approximately 3 feet wide. Chemical fire suppression agents containing chemical dyes can also be used. These may affect the aquatic environment if they enter streams. Water may be withdrawn from nearby sources such as streams, lakes, or public water supplies to suppress the fire. Emergency Stabilization and Rehabilitation techniques can begin before the fire is determined controlled and while fire suppression equipment is still in the fire area. Emergency Stabilization and Rehabilitation techniques could include, but are not limited to: grading, culvert installation, applying mulch, installing straw wattles, contour felling, seeding, fencing for livestock/wildlife management and monitoring and potentially treating weed invasions.

The Lander RMP showed the Beaver Creek RMU as divided into three fire suppression zones (BLM 2004). The desert yellowhead site and surrounding habitat occurred near the border in Zone 2. Zone 2 was designated as a limited suppression area, meaning that the fire will only be fought when it exceeds a pre-determined limit, or if it threatens human life, structures, or private property. In Zone 2 no history of large or damaging fires exists and it is thought that the vegetation at the desert yellowhead site is too sparse to carry a fire.

Subsequent to the signing of the Lander RMP, the Lander's fire plan has been revised and reviewed and updated annually. The most recent version is the Southern Zone Suppression Plan dated February 9, 2005 (Breckenridge 2005, Personal Communication). It shows the desert yellowhead site and its critical habitat in Fire Management Zone-02 (FMZ) – Sagebrush Grass Habitat Type, Sub-Unit 02-7 Sweetwater Valley. This sub-unit was assigned to a suppression category where wildland fire is desired to manage ecosystems. Suppression tactics remain the same as originally written under the RMP for Zone 2. Special consideration areas for this sub-unit are the Wilderness Study Areas and the desert yellowhead site. The special considerations for the desert yellowhead site specifically prohibit use of heavy equipment, slurry dumps, or off-road vehicle travel. Initial attack would consist of handcrews using conventional tools with no vehicle travel allowed within the critical habitat. Suppression will be done using Minimal Impact Suppression Techniques (MIST), with minimal spading or other surface disturbance. If a fire were to occur in this area, the dispatcher is responsible for relaying this information to the firefighters (BLM 2004).

Anticipated Effects. Wildland fires are not expected to directly impact the desert yellowhead because vegetation and litter at the site are not believed to be sufficient to sustain a damaging fire (BLM 2004). Environmental damage that occurs from wildland fires at times results from the equipment and resources used to fight a fire. According to the BA, fire management actions, as presented in the current Lander RMP, may affect, but are not likely to adversely affect the desert yellowhead or its designated critical habitat. This determination is based on the very low potential for fires to occur in the area near the desert yellowhead site, the education of fire fighters and resource advisors as to the location and concerns regarding desert yellowhead, and the inclusion of the desert yellowhead site in the suppression plan. There is no history of any large or damaging fires within or near the desert yellowhead site (BLM 2004). Although not expected to occur, on the unlikely possibility that a wildfire were to occur in this area, fire dispatchers are expected to follow the Southern Zone Suppression Plan which only permits fire suppression efforts if a fire exceeds predetermined limits or threatens human life, structures, or private property and specifically prohibits the use of heavy equipment, slurry dumps, or off-road travel within the desert yellowhead site. Subsequent to such an unlikely wildfire, a wildfire rehabilitation plan will be developed with the Service which will minimize any adverse impacts of the wildfire rehabilitation plan to the desert yellowhead or its critical habitat (BLM 2004). Additionally, given the very limited ability of the vegetation of the area to sustain a fire and the Bureau's commitment to protect the desert yellowhead and its critical habitat, the Bureau does not foresee the approval of any prescribed burn plans which could cause adverse effects to the desert yellowhead or its critical habitat. The Bureau is committed to ensuring that any wildfire rehabilitation plans would be designed to not adversely affect the desert yellowhead.

Based on the Bureau's description of the current Lander Fire Management program, commitment to conservation measures listed in the Appendix, the Service concurs that the Bureau's prescribed fire and rehabilitation activities under this program are not likely to adversely affect the desert yellowhead or its critical habitat. It appears that the Bureau has taken steps to minimize any impacts to the desert yellowhead that may occur due to fire suppression efforts. If a wildland fire needs emergency suppression techniques in the area, the Bureau and the Service will consult on that activity immediately following that fire suppression effort under the provisions of emergency consultation (50 CFR 402.05).

Access Management.

Program Description. The Bureau's Access Management Program activities are generally in support of other resource management programs. Under this program, the Bureau maintains existing roads and easements. In addition, the Bureau negotiates with landowners for easements or selects alternatives to the route to secure public access as identified in a district transportation plan. Under the Lander RMP, the Bureau plans to negotiate easements on the East Beaver Creek, Twin Creek, Government Draw, Signor Ridge, Hudson-Atlantic City, Beaver Rim, and Dilabaugh Butte Roads. Roads are to be kept to minimum Bureau standards necessary for the anticipated use (BLM 2004). Specific designations for ORV use are covered under the ORV Management program.

The nearest Bureau-maintained roads are all located more than 0.5 miles from the desert yellowhead site. Sand Draw Highway (State Highway 135) is a paved road located about 0.7 miles from the site, which provides access to the general vicinity of the desert yellowhead population. At least five different companies have obtained rights-of-way on the Bureau's Cedar Rim Road. Cedar Rim Road is a crowned and ditched road and is located approximately 1.2 miles from the desert yellowhead site. Other existing rights-of-way near the desert yellowhead site include a powerline, a telephone line, a snowfence, and a gas pipeline (BLM 2004). These rights-of-way generally follow the Sand Draw Highway, the old roadbed of Sand Draw Highway before it was re-aligned, or the Cedar Rim Road. These are all located 0.7 mile or more away from the desert yellowhead site. An easement on private land for a BLM fence is located about 0.5 mile (0.8 km) to the south of the desert yellowhead site.

Other routes in the area are in poor condition or are not mapped and are not maintained under the Access Management Program. Numerous two-track trails (most are old seismic lines) are visible in an aerial photo of the area. Most receive little, if any, use. These were present prior to the discovery of the desert yellowhead population. These two-tracks wash out in places or are intersected by drainages, making them accessible only by ORVs. One unmaintained access route to the desert yellowhead site currently consists of a two-track trail that parallels the Sand Draw Highway then heads east to the plant population. Although, this trail is not mapped on the most current 7.5' U.S. Geological Survey quadrangle maps, it is assumed to have been present prior to the discovery of the desert yellowhead species (BLM 2004). This trail is used by personnel involved with monitoring the desert yellowhead population.

Given the flat, open nature of the country surrounding the desert yellowhead population, the Bureau determined that, at this time, it would be ineffective to attempt to restrict access to the site

by attempting to sign, fence, or gate any two-track trails in the area. Similarly, the Bureau in cooperation with the Service has determined that, given the fragility of the area, fencing the desert yellowhead population to restrict access may cause more detriment to the population than benefit. Fencing the population could serve as a beacon to all curious rare plant enthusiasts or could trap wildlife, cattle, or wild horses within the site. Also, the desert yellowhead site has had some degree of grazing by domestic herbivores for over 100 years and by wild herbivores for thousands of years. To restrict wild or domestic grazing animals from the site may cause an increase in other palatable plant species which could compete with the desert yellowhead causing a negative effect on the population. Rehabilitating any existing two-track trails in the area by ripping or otherwise destroying any two-track trail and reseeding may also provide an avenue for noxious weeds to invade the site or may cause the creation of new two-track trails.

Anticipated Effects. According to the BA, the closest authorized right-of-way to the desert yellowhead site is located approximately 0.5 miles away. Furthermore, the BA states that the Bureau will authorize no new rights-of-way through the site. In addition, the Bureau has committed to implementing a no surface disturbance restriction (including access roads) in the desert yellowhead site and its critical habitat. Given the management direction of the Bureau's current access management program, the Bureau's commitment to not permit surface disturbing activities within the site, and the Bureau's commitment to work with all interested parties in the development and implementation of a monitoring plan (including inventorying and monitoring all vehicle access to the area for the purpose of restricting access of vehicles that pose a threat to the desert yellowhead population), the Service concurs that Bureau-authorized activities under the Access Management Program are not likely to adversely affect the desert yellowhead or its critical habitat.

Soils, Water, and Air Management.

Program Description. The Bureau performs a variety of activities designed to preserve and protect soil, water, and air quality. Through the Bureau's Soil/Water/Air Management program, the Bureau evaluates proposed projects, applies soil management practices, applies seasonal closures, and completes ground water studies. Some of these field activities involve the use of heavy machinery and hand tools. Field activities can involve developing riparian exclosures or constructing stream crossings. Other activities can involve imposing restrictions on activities such as mineral exploration and development, pipelines, powerlines, roads, recreation sites, fences, and wells.

Activities associated with soil resources may also include reclamation of abandoned mines and open shafts, removal of waste rock in floodplains or streams, or cleanup of tailings. Soil sampling and surface soil erosion studies may also be conducted. Soil resource related activities in the Lander RMP area are mainly in support of other programs.

Through water resource management, the Bureau seeks to maintain or improve surface and groundwater quality consistent with existing and anticipated uses and applicable state and federal water quality standards, provide for the availability of water to facilitate authorized uses, and minimize harmful consequences of erosion and surface runoff. Water resources are also to be protected or enhanced through site-specific guidelines. The Bureau develops pollution prevention

plans, ensures rights to water-related projects are filed, delineates no chemical use buffer zones, designs activities to promote reduction of channel erosion, and restores damaged wetlands or riparian areas. The Bureau also provides technical expertise on other activities such as livestock ponds, waterfowl monitoring activities, reestablishes floodplains, and provides impact analyses of oil and gas development or any surface disturbance projects.

Air quality management consists of monitoring efforts in cooperation with the U.S. Forest Service, Wyoming Department of Environmental Quality and the U.S. Environmental Protection Agency and evaluating and restricting surface development. Monitoring for air quality components, i.e., carbon monoxide, nitrogen dioxide, sulfur dioxide, ozone, particulate matter, visibility, and atmospheric deposition, is conducted from various facilities around Wyoming.

For several years, the Lander Field Office has worked to monitor soils and weather at the desert yellowhead site. In 1994, Dr. Richard Scott established a climate monitoring site at the southern end of Cedar Rim specifically to record local climate data for the desert yellowhead population and other rare plants at this site. Data is gathered hourly on precipitation, air temperature, soil temperature (at depths of 3.9 and 7.9 inches), relative humidity, wind speed, and solar radiation (BLM 2004).

Anticipated Effects. Management of these resources within the Lander Field Office and Beaver Creek RMU are expected to maintain or may improve the characteristics of soil, water, and air quality at the desert yellowhead site. According to the BA, management actions for soils, water, and air as presented in the Lander RMP, may affect, but are not likely to adversely affect the desert yellowhead or its critical habitat. This determination is based on the minimal potential for any soil disturbing or disruptive soil/water/air program management actions to occur within the desert yellowhead site or critical habitat (BLM 2004).

Based on the Bureau's description of the Soils/Water/Air Management program, the remoteness and integrity of the site, the Bureau's commitment to not permit any surface disturbing activities with the desert yellowhead site, the Service concurs that Bureau activities under this program are not likely to adversely affect the desert yellowhead or its critical habitat.

Wilderness Management.

Program Description. The Bureau's Wilderness Program is intended to manage and retain the wilderness quality of Wilderness Study Areas (WSAs). Discretionary uses within or adjacent to WSAs are reviewed to ensure that they do not create conflicts with management and preservation of wilderness values. A wilderness is recognized as "an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain." An area of wilderness is further defined as "an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make

practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value (Wilderness Act, 16 U.S.C. 1131-1136).

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 identify potential impacts to known or potential wilderness values.

Nine regions in the Lander Field Office are designed as Bureau WSAs: Sweetwater Canyon, Copper Mountain, Dubois Badlands, Whiskey Mountain, Sweetwater Rocks, Lankin Dome, Split Rocks, Savage Peak, and Miller Springs. The desert yellowhead site does not occur within a WSA. No WSAs are near the desert yellowhead population.

Anticipated Effects. According to the BA, management actions associated with WSAs are not expected to result in direct or indirect impacts to the desert yellowhead or its habitat. Based on the Bureau's description of the Wilderness Management program and the fact that management under this program does not overlap with the desert yellowhead site or its critical habitat, the Service concurs that Bureau activities under this program are expected to have no effect to the desert yellowhead or its critical habitat.

Areas of Critical Environmental Concern (ACEC) Management.
Program Description. Under this program, the Bureau designates Areas of Critical Environmental Concern (ACECs) and manages and protects important historic, cultural, scenic, wildlife, and other natural resources. Designated ACECs require intensive management of all surface-disturbing activities. Plans of operations must be approved for all exploration and mining operations in areas designated as an ACEC. The Lander RMP designates approximately 7,000 acres of federal surface in the Beaver Creek RMU as ACECs, where the management emphasis is to protect sites along the Oregon/Mormon Pioneer Trail. The desert yellowhead population is not included in an ACEC.

Anticipated Effects. According to the BA, the designation of an ACEC within the Beaver Creek RMU as discussed in the Lander RMP will not impact the desert yellowhead because that area is associated with the Oregon/Mormon Pioneer Trail and does not include the desert yellowhead site.

Based on the Bureau's description of the ACEC Management program and the fact that management under this program does not overlap with the desert yellowhead site or its critical habitat, the Service concurs that Bureau activities under this program are expected to have no effect to the desert yellowhead or its critical habitat.

Off-Road Vehicle (ORV) Management.
Program Description. Under this program, the Bureau designates closed, limited, or open areas for ORV use, posts signs, develops maps, or brochures, permits ORV rallies, cross-country races, and outings, monitors ORV use, and performs necessary tasks requiring ORV use. Most ORV

use (including over-the-snow vehicles) on Bureau administered lands is limited to existing roads and trails. Some areas are closed to ORV use. On March 16, 2005, the Bureau completed an emergency road closure of the trail which leads to the desert yellowhead site and all roads within the critical habitat area. Seasonal restrictions may be applied in crucial wildlife habitats as needed. In addition, ORVs are prohibited on wet soils.

The Bureau recognizes the use of bicycles and other human-powered, mechanized conveyances as appropriate recreational activities. Federal regulations do not specifically address management of non-motorized vehicle use. There are substantial differences in the types of use, associated impacts, and management approaches between non-motorized and motorized vehicle activities. Until a national strategy and rules for non-motorized vehicle use on public lands are established, the Bureau will continue to include non-motorized use within the context of ORV designations.

According to the Lander RMP, existing ORV designations that were completed in 1981 on one-half of the Lander RMP area will be continued (BLM 2004). ORV management will focus on management units with crucial wildlife values, significant visual resources, high watershed sensitivity, and outstanding natural character. Intensive management will limit ORV use to designated roads and vehicle routes and will impose seasonal closures (from approximately December through June) on areas or roads where vehicle use is incompatible with other resource values. ORV use in the remainder of the Lander RMP area will be limited to existing roads and vehicle routes, except when the ORV is used in completing necessary tasks. Examples include retrieving big game kills, repairing range improvements, and managing livestock. The present designations that limit ORV use to existing roads and vehicle routes will be continued within the Beaver Creek RMU (BLM 2004).

In addition to restricting ORV access to designated roads and trails within the Beaver Creek RMU and the closure of the trail leading to the desert yellowhead site and all roads within the designated critical habitat area, the Bureau has agreed to implement a conservation measure to monitor vehicle use in the area. As presented in the Conservation Measures section of the Appendix of the BA, the Bureau has agreed to work with all interested parties in the development and implementation of a monitoring plan for the desert yellowhead (See Appendix). The plan will include regular patrol of the site for unlawful uses of the land, and monitoring of invasive weed populations. This plan will also include, but is not limited to, the inventory and monitoring of all vehicle access to the area for the purpose of restricting access of vehicles that pose a threat to the desert yellowhead population.

Anticipated Effects. To date, recreational use of vehicles in the desert yellowhead site has been minimal because of its relative isolation, the indirect access route, and because the trail dead-ends. Now that the trail leading to the desert yellowhead site and all roads within the designated critical habitat area are closed to ORV use, the Bureau does not expect that ORV use will impact the desert yellowhead population.

The Service concurs that impacts from the authorozed use of ORVs within Lander ORV Management program are not likely to adversely affect the desert yellowhead. However in the future, if additional measures, such as fencing, are undertaken to further minimize impacts to the

desert yellowhead, these activities will need to be evaluated for impacts to this plant, and consultation with the Service will be needed. For example, fencing may disturb the fragile soil of the surrounding area and draw more attention to the site. In addition, livestock or wild horses may accidentally be trapped inside a fence exclosure and cause considerable damage to the population. The terrain at the site is relatively flat, and if a road were trenched and ripped, ORVs could still drive around or come in from different directions thereby creating new two-track trails. Ripping of existing roads, if it were to occur, would disturb soils and could become a path for weeds to reach the plant population (BLM 2004).

The primary constituent elements of the desert yellowhead critical habitat consist of, but are not limited to: (1) recent soils derived from sandstones and limestones of the Split Rock Formation at its junction with the White River Formation. These are shallow, loamy soils of the Entisol order that can be classified as coarse-loamy over sandy-skeletal, mixed, Lithic Torriorthent. The surface stratum has little organic matter and subsurface layers show no accumulation of humus, clay, gypsum, salts, or carbonates; (2) Plant communities associated with the desert yellowhead that include, but may not be limited to, sparsely-vegetated cushion plant communities with scattered clumps of Indian ricegrass between 6,700 and 6,800 feet in Fremont County, Wyoming. Other species common to these communities are Hooker's sandwort, thistle milkvetch, stemless hymenoxy, and squarestem phlox. These cushion-plant communities also contain natural openings; and (3) Topographic features/relief (outcroppings, cliffs, and hills) and physical processes, particularly hydrologic processes, that maintain the shape and orientation of the hollows characteristic of the desert yellowhead habitat (through microscale dynamics of local winds and erosion) and maintain moisture below the surface of the ground (through sheet wash from the adjacent outcroppings, cliffs, and hills). The Bureau does not anticipate that these primary constituent elements will be adversely affected by Bureau-authorized activities.

The Bureau is committed to not authorizing any new trails or rights-of-way through the desert yellowhead site. The Bureau is also committed to working with all interested parties in the development and implementation of a monitoring plan (including inventorying and monitoring all vehicle access to the area for the purpose of restricting access of vehicles that pose a threat to the desert yellowhead population). According to the BA and the memorandum from the Bureau received May 10, 2005, ORV management actions, may affect, but are not likely to adversely affect the desert yellowhead or its designated critical habitat. This determination is based on the beneficial effects to the desert yellowhead and its designated critical habitat from the recent road closure (BLM 2004).

Based on the Bureau's description of the Off-Road Vehicle program, the Bureau's March 16, 2005 road closure of the area to ORV use, and the Bureau's conservation measures to protect the desert yellowhead population, the Service concurs that Bureau activities under this program are not likely to adversely affect the desert yellowhead designated critical habitat. The Service understands that this was an emergency road closure on the part of the Bureau. The Service has based its concurrence on the likelihood that this closure will remain in effect throughout the life of the Lander RMP.

Livestock Grazing (and Wild Horse) Management.

Program Description. Categories under this program include livestock management activities, range management, fencing, predator/pest management, water management, detrimental impacts management, and lease management. Seven wild horse herd management areas have been designated in the Lander Field Office and are also managed under this program. The desert yellowhead site and critical habitat fall within the Dishpan Butte Wild Horse Herd Management Area.

Livestock management activities include (1) converting to new types of livestock, (2) authorizing livestock grazing, and (3) adjusting season of use, distribution, kind, class, and number of livestock. One method that livestock producers can use to change the distribution of livestock is to provide salt or mineral supplements in specified areas. Range management activities include (1) using prescribed fire, (2) vegetation manipulation projects, (3) changing composition of existing vegetation, (4) using noxious weed control, (5) using mechanical or biological vegetative treatments to improve forage production, (6) using heavy equipment, and (7) herbicide treatment of sagebrush. Fencing activities include (1) fence construction and repair, (2) design and implementation of grazing systems, and (3) building livestock exclosures for important riparian habitat. Predator/pest management includes controlling predators or pests of livestock operations. Water management activities include the development of reservoirs, springs, pipelines, and wells, and providing access to these developments. Managing detrimental impacts include documenting, treating, and preventing resource damage. Potential detrimental impacts include the degradation of stream banks, the introduction of noxious weeds, increasing soil erosion, and a reduction in cottonwood tree recruitment. Lease management activities include (1) conducting monitoring studies, (2) performing project work to enhance and improve riparian zones, (3) designating stock trails, (4) managing leases, (5) developing management plans and agreements, and (6) canceling, or changing livestock driveways. The Bureau has committed to meeting the range management standards in the *Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for Public Lands* (Appendix B, BLM 2003) while managing their lands for livestock grazing.

Two livestock grazing management study areas have been designated within the Lander Field Office, including the Gas Hills Study Area and the Green Mountain Study Area. The desert yellowhead site occurs within the Green Mountain Study Area. Rangeland program summaries for these study areas are included in the RMP. Grazing allotments have been grouped into three categories: M (maintain), C (custodial), and I (improve). Recommendations were provided in each category for the intensity of grazing management, including multiple-use resource management objectives, needs for range improvement and monitoring, and actions needed to improve and maintain rangeland condition and productivity. Under the Lander RMP, present management will continue until the results of monitoring are available. Management actions based on all available data will then be implemented in the allotments, beginning with areas that need the most improvement.

Anticipated Effects. Although the effects of grazing on the habitat of the desert yellowhead are currently unknown, the Bureau speculates that potential beneficial effects from this program could exist at low herd density (BLM 2004). Some plants are growing in livestock trails at the edge of the site (BLM 2004). These livestock trails could create rills for water movement. Grazing cattle could reduce competition with other grasses and forbs that could encroach into the area. Occasional trampling by livestock may damage leaves or flowers, but the plant grows back if its roots are not damaged (BLM 2004). However, the Bureau realizes that high concentrations of cattle could cause adverse impacts. At the current stocking level, high concentrations of livestock are not likely to occur on the site because of the lack of other desirable forage species there. The closest source of livestock water is about 2.5 miles away. Furthermore, the desert yellowhead does not appear to be palatable to livestock or wildlife (BLM 2004).

The permittees who graze cattle in the Big Pasture allotment are aware of the presence of desert yellowhead and have discussed with specialists at the Lander Field Office the effects and impacts of grazing on the plant population. To date, the permittees have cooperated with the Bureau in such matters as restricting mineral supplements within 2 miles of the site and avoiding supplemental livestock feed, and not herding their cattle within 0.25 mile of the desert yellowhead site. Wild horse management activities, such as temporary gathering/holding facilities, could also cause damage to the plants and habitat if they were located at the yellowhead site. New construction of range improvement projects, such as fencing, water developments, and vegetation manipulation projects, are discretionary and subject to the Bureau's surface disturbing mitigation guidelines. The Bureau is committed to not permitting surface disturbing activities within the desert yellowhead site (BLM 2004).

According to the BA, grazing and wild horse management actions, as presented in the Lander RMP, may affect, but are not likely to adversely affect the desert yellowhead critical habitat. Current livestock grazing practices at the site have not proven detrimental and may beneficially affect the desert yellowhead population at the site (BLM 2004).

The Bureau has committed to a number of conservation measures to minimize the impacts of livestock grazing (Appendix). Among other conservation measures, the Bureau is committed to: (1) not increasing current permitted livestock stocking levels, (2) not approving the location of mineral supplements or additional water sources, wild horses, or wildlife on public lands within 2 miles of the desert yellowhead site, (3) not allowing intentional herding of livestock within 0.5 miles of the desert yellowhead site or in designated critical habitat, and (4) not conducting wild horse management actions within desert yellowhead critical habitat.

Based on the Bureau's description of the Livestock Grazing (and Wild Horse Management) program and the commitment to conservation measures listed in the Appendix, the Service concurs that Bureau activities under this program are not likely to adversely affect the constituent elements of the desert yellowhead designated critical habitat.

<u>Vegetation Management.</u>
Vegetation management is not currently an independent program addressed in the Lander RMP but overlaps with a number of programs including but not limited to (1) Livestock Grazing

Management, (2) Fish and Wildlife Management, (3) Forest Management, and (4) Fire Management. Vegetation resource management in the Lander Field Office is intended to (1) maintain or improve the diversity of plant communities to support timber production, livestock needs, wildlife habitat, watershed protection, and acceptable visual resources, (2) enhance essential and important habitats for special-status plant species on Bureau-administered public land surface and prevent the need for any special-status plant species being listed as threatened and endangered, and (3) reduce the spread of noxious weeds (BLM 2004).

During vegetation management activities, the Bureau maintains or improves the diversity of plant communities. In addition, vegetation management activities support livestock grazing, wildlife habitat management, sensitive species management, prescribed fire, timber production, watershed protection, visual resources, and the reduction in the spread of noxious weeds. As part of vegetation management, the Bureau designs vegetation treatments; conducts prescribed burns; implements weed control programs; plants trees; allows precommercial tree thinning; provides buffer zones; allows the use of machinery or fire; improves riparian habitat; pursues the acquisition of additional riparian areas; allows spraying, burning, and mechanical disturbances; uses species-specific insects, livestock grazing, mechanical methods, or chemical methods to modify composition and diversity of vegetation; and conducts plant species surveys.

The three types of noxious or invasive weed control used by the Bureau on public lands are chemical, biological, and mechanical and these are typically implemented along rights-of-way. Only federally approved herbicides and biological controls are used. If herbicides are proposed for use, minimum toxicity herbicides are used with appropriate buffer zones along streams, rivers, lakes, and riparian areas, including those along ephemeral and intermittent streams. Projects that may affect listed species are to be postponed or modified to protect the presence of these species and consultation with the Service initiated. Some common invasive weeds include: spotted knapweed (*Centaurea maculosa*), Dalmatian toadflax (*Linaria dalmatica*), houndstongue (*Cynoglossum officinale*), Canada thistle (*Cirsium arvense*), cheatgrass (*Bromus tectorum*), and musk thistle *(Carduus nutans*).

No noxious weeds are currently known to threaten the desert yellowhead or the constituent elements of its critical habitat, therefore there are no on-going noxious weed control efforts on the site. The Bureau is committed to developing a plan to monitor any invasive weed populations that may occur within the desert yellowhead site in the future. The Bureau will also prohibit biological control of weeds in desert yellowhead habitat until the impact of the control agent has been fully evaluated and determined to not adversely affect the plant (See Appendix for additional conservation measures).

The Bureau has taken the position that no noxious weed control will be necessary within the desert yellowhead site over the life of the RMP. If noxious weed control were to become necessary in the desert yellowhead site (by introduction from vehicles of researchers, monitoring teams, plant enthusiasts, etc.), the Bureau will reinitiate consultation with the Service on the RMP, and the noxious weed control effort prior to any such noxious weed control efforts.

Anticipated Effects. The Bureau is currently committed to not permitting vegetation management activities within the desert yellowhead site that may adversely affect the desert yellowhead plants or the constituent elements of its critical habitat. If any vegetation management activities such as noxious week control become necessary in the future within the desert yellowhead site, the Bureau is committed to reinitiating consultation with the Service on this determination of the RMP and this activity. Furthermore, the Bureau is committed to a series of conservation measures which will minimize any potential impacts of the Bureau's vegetation management activities on the desert yellowhead (Appendix).

Based on the Bureau's description of the Vegetation Management program and commitment to the listed conservation measures, the Service concurs that Bureau activities under this program are not likely to adversely affect the desert yellowhead or its critical habitat

Conclusion of Informal Consultation

This concludes informal consultation (50 CFR §402.13) of the effects of the Bureau's Lander RMP to the desert yellowhead. The Bureau program actions described above, which are expected to "have no effect" or "may affect, but not be likely to adversely affect" are not part of the BO to follow and will not be addressed further in this document.

AMENDED

PROGRAMMATIC BIOLOGICAL OPINION

FOR THE

WYOMING BUREAU OF LAND MANAGEMENT

LANDER RESOURCE MANAGEMENT PLAN AND

BUREAU CONSERVATION MEASURES

AND THEIR EFFECTS

TO THE

DESERT YELLOWHEAD (*Yermo xanthocephalus*)

U.S. Fish and Wildlife Service
Wyoming Ecological Services Office
Cheyenne, Wyoming

June, 2005

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AMENDED PROGRAMMATIC BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The Proposed Action examined in this consultation is the continuation of management according to the existing U.S. Bureau of Land Management (Bureau) Lander Resource Management Plan (RMP) as well as the Bureau's commitment to the conservation measures listed in the Appendix. RMPs are used by the Bureau to guide and control future actions and set standards upon which future decisions on site-specific activities will be based. RMPs only establish general management policy on a broad scale. They are not used to make decisions that commit resources on a small scale such as on specific parcels of land. RMPs also identify desired outcomes, also known as "desired future conditions". These outcomes are expressed in RMPs as goals, standards, objectives, and allowable uses and actions needed to achieve desired outcomes. These are often referred to as RMP decisions or resource allocations. It is upon these RMP decisions or resource allocations that the effects determinations in this amended biological opinion (BO) are based.

As per section 7 of the Endangered Species Act of 1973 (Act), as amended (50 CFR §402.13 and §402.14), the Bureau will conduct site-specific consultation with the Service prior to authorization of any actions authorized under the Lander RMP which "may affect" the desert yellowhead (*Yermo xanthocephalus*). These future consultations will provide a means for site-specific analysis and documentation of impacts to the desert yellowhead or its designated critical habitat.

The Wyoming RMP analyzed in this BO is the Lander (BLM 1987) plan. The area covered by the Bureau's Lander RMP includes portions of Hot Springs, Fremont, Sweetwater, Natrona, and Carbon Counties in central Wyoming, including 2.5 million acres of surface lands and 2.7 million acres of federal mineral estate. The area of the proposed action covers approximately 360 acres of Federal lands managed by the Bureau along Cedar Rim approximately 6 miles north of Sweetwater Station in Fremont County, Wyoming. Vegetative communities across the area of the proposed action include sparsely-vegetated cushion plant communities associated with shallow soils on low slopes, rim margins, colluvial fans, and bottoms within deflation hollows. Within this area are topographic features (outcroppings, cliffs, hills) influencing the microscale dynamics of local winds, erosional processes, hydrologic processes needed to maintain the integrity of the shallow hollows providing desert yellowhead habitat, as well as the sheet wash that provides increased moisture to the habitat.

A description of activities of the Lander RMP was contained in the Statewide Programmatic Desert Yellowhead Biological Assessment (BLM 2004) and is described below.

Description of Activities Described under the Lander RMP and Committed Conservation Measures

The following discussion describes the Wyoming Bureau RMP program which may have potential adverse effects to the desert yellowhead. A Conservation Strategy (Appendix) was included in the Programmatic Desert Yellowhead BA. The Bureau has committed to implementing the Conservation Measures listed in the BA (Appendix). Therefore, the Service has evaluated the implementation of these conservation measures as part of the proposed action.

Table 2. Desert Yellowhead "Likely to Adversely Affect (LAA)" Determination from Biological Assessment[1]

Activity Type	Determination
Livestock Grazing (and Wild Horse) Management	Likely to Adversely Affect

Livestock Grazing (and Wild Horse) Management.
Program Description. Categories under this program include livestock management activities, range management, fencing, predator/pest management, water management, detrimental impacts management, and lease management. Seven wild horse herd management areas have been designated in the Lander Field Office and are also managed under this program. The desert yellowhead site falls within the Dishpan Butte Wild Horse Herd Management Area.

Activities under this program include converting to new types of livestock; authorizing livestock grazing, and adjusting season of use, distribution, kind, class, and number of livestock. One method that livestock producers can use to change the distribution of livestock is to provide salt or mineral supplements in specified areas. Range management activities include using prescribed fire, vegetation manipulation projects, changing composition of existing vegetation, using noxious weed control, using mechanical or biological vegetative treatments to improve forage production, using heavy equipment, and herbicide treatment of sagebrush. Fencing activities include fence construction and repair, design and implementation of grazing systems, and building livestock exclosures for important riparian habitat. Predator/pest management includes controlling predators or pests of livestock operations. Livestock water management activities include the development of reservoirs, springs, pipelines, and wells, and providing access to these developments. Managing detrimental impacts include documenting, treating, and preventing resource damage. Potential detrimental impacts include the degradation of stream banks, the introduction of noxious weeds, increasing soil erosion, and a reduction in cottonwood tree recruitment. Lease management activities include conducting monitoring studies, performing project work to enhance and improve riparian zones, designating stock trails, managing leases, developing management plans and agreements, and canceling, or changing livestock driveways. The Bureau has committed to meeting the range management standards in the *Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for Public Lands* (Appendix B, BLM 2003) while managing their lands for livestock grazing.

Two livestock grazing management study areas have been designated within the Lander Field Office, including the Gas Hills Study Area and the Green Mountain Study Area. The desert yellowhead site occurs within the Green Mountain Study Area. Rangeland program summaries for these study areas are included in the RMP. Grazing allotments have been grouped in three categories: M (maintain), C (custodial), and I (improve). Recommendations were provided in each category for the intensity of grazing management, including multiple-use resource management objectives, needs for range improvement and monitoring, and actions needed to improve and maintain rangeland condition and productivity. Under this RMP, present management will continue until the results of monitoring are available. Management actions

[1] Effects determination for the Off-Road Vehicle Management Program was changed to "Not Likely to Adversely Affect" by a Memorandum from the Bureau dated May 10, 2005 after the road leading to the desert yellowhead site was closed to ORV travel).

based on all available data will then be implemented in the allotments, beginning with areas that need the most improvement.

The Bureau has committed to a number of conservation measures to minimize the impacts of livestock grazing (Appendix). Among these, the Bureau is committed to: (1) not increasing current permitted livestock stocking levels, (2) not approving the location of mineral supplements or additional water sources, wild horses, or wildlife on public lands within 2 miles of the desert yellowhead site, (3) not allowing intentional herding of livestock within 0.5 miles of the desert yellowhead site, and (4) not conducting wild horse management actions within desert yellowhead habitat.

STATUS OF THE SPECIES

Species Description

The desert yellowhead is a tap-rooted, glabrous (hairless) perennial herb with leafy stems to 12 inches in height. The leafy, leathery leaves are alternate, lance-shaped to oval, 1.5 to 10 inches long and often folded along the midvein. Leaf edges are smooth or toothed. Flower heads are many (25 to 180) and crowded at the top of the stem. Each head contains four to six yellow disk flowers (ray flowers are absent) surrounded by five yellow, keeled involucre (whorled) bracts (small leaves beneath the flower). The pappus (attached to the top of the seed) consists of white bristles.

Life History

The desert yellowhead flowers from mid-June to August and may flower a second time in September. The start and end of flowering, as well as the duration of flowering, vary between years and appears to be dependent upon temperature and other climatic variables. Fruits have been observed from mid-July to early September, but do not persist after the flower has dried and bracts ruptured (Heidel 2002).

The desert yellowhead appears to be an obligate outcrosser (cannot self-pollinate) (Heidel 2002), and is likely pollinated by visually-oriented insects attracted to the yellow flowers (Dorn 1991). Several Hymenopterans (order including sawflies, ants, bees, and wasps) have been collected from desert yellowhead plants, and small skipper butterflies noted on them, although the identity of these potential pollinators is not currently known (Heidel 2002). No work has been done to document the status of these potential pollinators locally. However, of the skippers known from Fremont County that most likely use desert yellowhead habitat, all have Nature Conservancy Global Ranks of G-4 (apparently secure globally) and G-5 (demonstrably secure globally) with no special conservation or management needs identified by Opler et al. (1995).

Fertig (1995) considered the desert yellowhead to be a classic "K" selected species characterized by a long-lived perennial growth form, adaptation to severe habitats, and low annual reproductive output. He reported that approximately 31 percent of all plants observed in demographic monitoring plots were in flower or fruit. Seedlings and vegetative rosettes comprised the remaining 69 percent of the population. Scott (2000) surveyed desert yellowhead plants from 1995-2000 but found a lower percentage of flowering plants. Scott (2000) found that the percentage of flowering plants averaged just 14 percent over 5 study years with a range of

4 to 24 percent of the plants flowering. Fertig (1995) assumed plants to be long-lived. However, observations of marked plants suggested that some fruit-bearing rosettes do not survive to flower again the following season (Fertig 1995).

The age of desert yellowhead plants cannot be determined at any stage in their life cycle, though there are discrete stage classes that tend to correspond with age. Even the seedlings may retain cotyledons for two years. The plant's non-random, clumped distribution pattern suggests that dispersal distances are probably low (Fertig 1995, Heidel 2002).

Each plant has 1 to many rosettes, and any or none of these may produce a flowering stalk in any given year. Each plant flowers more than once over its life cycle (iteroparity). Each flower produces 4 to 6 seeds, and the number of flowers per plant ranges from 25-180, for a total of 100 to 1080 seeds potentially produced per plant. In typical years, germination of seedlings is probably extremely low or absent (Dorn 1991). Germination and establishment is probably episodic and dependent on suitable moisture conditions, and dependent on a natural seedbank (Heidel 2002).

The fruits of the desert yellowhead are single-seeded achenes (dry fruit) with a parachute-like pappus of slender bristles. At maturity, the fruits are exposed to the wind, which may disperse the seed over long distances. However, the clustered distribution pattern of the desert yellowhead, often along colluvial (rock debris) washes, suggests that dispersal distances are short and perhaps fostered by water erosion (Heidel 2002).

The desert yellowhead is restricted to shallow deflation hollows in outcrops of Miocene sandstones of the Split Rock Formation. These hollows have been shaped by the microscale dynamics of local winds, as well as erosional processes, in an unstable portion of the landscape on sites lacking desert pavement and with low vegetation exposed to strong wind (Bynum 1993). Within the hollows, desert yellowhead occurs on low slopes, rim margins, colluvial fans, and bottoms at elevations generally ranging from 6,720 to 6,760 feet (ft) (Heidel 2002).

The desert yellowhead grows in recent soils derived from sandstones and limestones of the Split Rock Formation at its junction with the White River Formation (Heidel 2002). Bynum (1993) found these soils to be shallow, loamy soils of the Entisol order that can be classified as a coarse-loamy over sandy-skeletal mixed Lithic Torriorthent. In contrast, the surrounding sagebrush community occupies deep sandy loam of the Aridisol order. The surface stratum is mildly alkaline with little organic matter, while subsurface layers have no accumulation of humus, clay, gypsum, salts, or carbonates (Bynum 1993).

The shape and orientation of the wind-excavated hollows may allow for accumulation of moisture from sheet wash coming off adjacent areas, so the hollows may be more mesic (moist) than surrounding areas. The vegetation of these sites is typically sparse, with vegetative cover often as low as 10 percent, and consists primarily of low-cushion plants and scattered clumps of *Stipa hymenoides* (Indian ricegrass). Species common to these communities include *Arenaria hookeri* (Hooker's sandwort), *Astragalus kentrophyta* (thistle milkvetch), *Hymenoxys acaulis* (stemless hymenoxy), and *Phlox muscoides* (squarestem phlox) (Fertig 1995). A more complete list of frequently associated species can be found in Heidel (2002).

Population Dynamics

Very little is known regarding the population dynamics of the desert yellowhead. A permanent survey grid is now in place, and has facilitated an annual census of all known individuals. The total population size appears to be stable and has varied from 9,293 to 13,244 individuals during the time of census (1995-2003) (R. Scott, Central Wyoming College Herbarium, in litt. 2004). Scott has hypothesized that some of the changes in population numbers could be in response to yearly differences in precipitation over the study period. Additional information regarding desert yellowhead population dynamics is clearly needed.

Status and Distribution

On March 14, 2002, the desert yellowhead was listed under the Act as threatened (USFWS 2002). Currently it is known from one large subpopulation at the base of Cedar Rim and two smaller subpopulations within 0.25 mile. These subpopulations are located entirely on Federal land managed by the Bureau (Dorn 1991). The desert yellowhead is currently known from a single population with plants widely scattered over an area of 50 acres. Originally, Dorn observed approximately 500 plants within
1 ha (2.5 ac) in 1990 (Dorn 1991). However, this was a visual estimate, likely weighted toward flowering plants, and is not considered an actual estimate of the population size and should not be considered when assessing population trends over time.

Surveys conducted between 1990 and 1994 failed to locate additional populations of desert yellowhead on outcrops of the Split Rock, White River, Wagon Bed, and Wind River formations in the Cedar Rim and Beaver Rim areas of southern Fremont County (Fertig 1995). No additional populations were located during follow-up surveys conducted during 1997 along Beaver Rim in Fremont and Natrona Counties, as well as in the Shirley Basin in Carbon County (Heidel 2002). Additional surveys were subsequently conducted during 2001 in segments of Cedar Rim and Beaver Rim and surrounding areas. Similar to previous survey efforts, new populations were not discovered during these surveys as well (Heidel 2002).

Threats

The desert yellowhead is vulnerable to extinction from randomly occurring, catastrophic events, as well as from small-scale habitat degradation, due to its small population size and limited geographic range. The species is characterized by a long-lived perennial growth from, adaptation to unique habitats, and low annual reproductive output. This low reproductive output makes the species increasingly vulnerable to extinction due to a chance event if the population size declined. It is unlikely that the species would exhibit a high rate of population growth even if conditions improved after such an event. Other identified potential threats to the desert yellowhead population include destruction or trampling of plants or modification of habitat from oil and gas development, ORV use, and livestock grazing (USFWS 2004c). Invasive weeds if they were to become established at the desert yellowhead site could potentially compete with desert yellowhead plants for space, nutrients, or water.

ENVIRONMENTAL BASELINE

Regulations implementing the Act (50 CFR 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed State or Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation process.

The action area is defined at 50 CFR 402 to mean "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action". For the purposes of this consultation, the Service defines the action area to include approximately 360 acres of habitat identified as necessary for the desert yellowhead located on public lands managed by the Bureau along Cedar Rim approximately 6 miles north of Sweetwater Station in Fremont County, Wyoming. Historic activities within or adjacent to this area include livestock grazing, mining, rare plant monitoring, ORV use, and trail establishment. Since the listing of the desert yellowhead in 2002, no other formal Section 7 consultations have been completed in response to any authorized Bureau activities' effects to the desert yellowhead.

Status of the Desert Yellowhead Within the Action Area

The desert yellowhead is currently known from only one population in the world located entirely on Federal land managed by the Bureau of Land Management (BLM) (Dorn 1991). This population is contained entirely within the action area and is made up of one large subpopulation at the base of Cedar Rim and two smaller subpopulations within 0.25 mile of that area with plants widely scattered over an area of 50 acres. Originally, Dorn (1991) observed approximately 500 plants within 2.5 acres. However, this was a visual estimate, likely weighted toward flowering plants, and is not considered an actual estimate of the population size and should not be considered when assessing population trends over time.

Detailed census efforts conducted from 1995 to 2003 indicated that the desert yellowhead population size does fluctuate annually but overall appears to be fairly stable and has varied from 9,293 to 13,244 individuals during the time the census was conducted (R. Scott, Central Wyoming College Herbarium, in litt. 2004)(BLM 2004). The fluctuations in plant numbers appear to be due to natural factors such as precipitation level rather than human-caused factors.

Factors Affecting the Desert Yellowhead Environment Within the Action Area

The desert yellowhead is vulnerable to extinction from randomly occurring, catastrophic events, as well as from small-scale habitat degradation, due to its small population size and limited geographic range. As described by Fertig (1995), the species is characterized by a long-lived perennial growth form, adaptation to severe habitats, and low annual reproductive output. This low reproductive output makes the species increasingly vulnerable to extinction due to a chance event if the population size declined. It is unlikely that the species would exhibit a high rate of population growth even if environmental conditions improved after such an event.

Livestock grazing currently occurs at the desert yellowhead site which is part of the Big Pasture grazing allotment. Livestock grazing may detrimentally impact individual desert yellowhead

plants through crushing, trampling, or incidental grazing parts of the plants by livestock. Livestock trails may redirect surface runoff and create areas of sheet and rill erosion which may be colonized by desert yellowhead plants. The permittees who currently graze cattle in the Big Pasture allotment are aware of the presence of desert yellowhead and have discussed with Bureau specialists at the Lander field office the effects and impacts of grazing on the plant population. To date, the permittees have cooperated with the Bureau in such matters as restricting mineral supplements within 2 miles of the site and avoiding supplemental livestock feed, and not herding their cattle within 0.25 mile of the desert yellowhead site. Wild horse management activities, such as temporary gathering/holding facilities, could also cause damage to the plants and habitat if they were located at the desert yellowhead site. New construction of range improvement projects, such as fencing, water developments, and vegetation manipulation projects, are discretionary and subject to the Bureau's surface disturbing mitigation guidelines. In addition, the Bureau is committed to not permitting an increase in current permitted livestock stocking levels (BLM 2004).

To date, invasion of non-native species, particularly noxious weeds, has not been documented to have occurred at the desert yellowhead site. In the future, non-native species could be introduced through livestock grazing, or other activities.

EFFECTS OF THE ACTION

The Wyoming Lander RMP and supporting information provided by the Bureau for this consultation describes activities in the Bureau's Livestock Grazing program that are likely to adversely affect the desert yellowhead. The potential effects of this activity on desert yellowhead plants are described here.

Direct and Indirect Effects

Direct effects are effects that result directly or immediately from the proposed action on the species. For example, actions that would immediately remove or destroy habitat or displace the species from its habitat or an area would be considered direct effects. Indirect effects are effects that are caused by, or result from, the proposed action and occur later in time after the proposed action is completed. Potential effects could result from (1) direct damage to individual desert yellowhead plants, or (2) loss or alteration of habitat associated with the proposed action. The proposed action is the management of the Lander RMP area in Wyoming for up to 15 years. Since (1) there is such a lengthy time period for the life of the proposed action, (2) direct effects could occur under the proposed action for up to 15 years, and (3) the indirect effects resulting from the proposed action may be combined with direct effects or be sufficiently difficult to distinguish from direct effects. The two types of effects are not differentiated here but instead are discussed jointly in the following discussion.

Analysis for Effects of the Action

<u>Livestock Grazing (and Wild Horse) Management.</u>
Livestock grazing could have detrimental as well as beneficial effects to the desert yellowhead plants. The desert yellowhead population is in a grazing allotment pasture where trampling may occur as livestock casually move along trails while grazing or moving to water. The closest source of livestock water is about 2.5 miles away (BLM 2004). Scott (2000) noted signs of

moderate wild horse traffic adjacent to the habitat. Crushing, trampling or incidental grazing of desert yellowhead leaves, by livestock, wild horse, or wildlife does occur and may compromise the reproductive capacity of any given plant. However, these impacts at their current level do not appear to be affecting the desert yellowhead population as a whole. Occasional trampling may damage leaves or flowers, but it has been witnessed that the plant grows back if its roots are not damaged (BLM 2004). Desert yellowhead plants do not appear to be selectively grazed by cattle and are presumed to be unpalatable. Trampling and crushing of desert yellowhead plants by grazing animals occurs at the present time at a very low frequency. Any redirecting of water movement through the area by the establishment of animal trails may be favorable to desert yellowhead plants as the plants at times colonize these areas possibly taking advantage of the erosive sheet, wind, and rill processes occurring there. Desert yellowhead plants have existed with livestock grazing for at least 100 years. Grazing of the area by livestock, wild horses, or wildlife may be beneficial to desert yellowhead plants in that the grazing may remove competing palatable vegetation which would otherwise compete with the apparently unpalatable desert yellowhead plants.

To protect the desert yellowhead from activity involving livestock and wild horse management, the Bureau is committed to (1) not increasing current permitted [livestock] stocking levels, (2) not approving location of mineral supplements or additional water sources for livestock, wild horses, or wildlife on public lands within 2 miles of the desert yellowhead site, (3) allowing supplemental feeding or straw within the grazing allotment only with proper authorization, (4) not allowing livestock herding within 0.5 mile of the desert yellowhead site, or its designated critical habitat, (5) and not conducting wild horse management actions (e.g., temporary gathering/holding facilities) within desert yellowhead designated critical habitat.

According to the Bureau, grazing and wild horse management actions, as presented in the Lander RMP, may affect, and are likely to adversely affect individual desert yellowhead plants. However, current livestock grazing practices at the site have not proven detrimental to the population (BLM 2004).

Summary

It is anticipated that actions potentially-authorized under the Lander RMP if undertaken could result in negative impacts to the desert yellowhead due to harm, destruction, or reduction in fitness of individual plants. Livestock Grazing Management according to the Lander RMP could lead to trampling, crushing, or removing vegetative parts of individual desert yellowhead plants.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal Actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The exact cumulative effects on the desert yellowhead are not known due to the lack of specific information on future state, local, or private actions in the Lander RMP area. The known habitat

of the desert yellowhead is contained completely on land administered by the Bureau of Land Management. Therefore, future state, local, or private actions which were to occur within the site are expected to conform with current Bureau policies. In any case, any future federal actions that occur within the Wyoming Bureau RMP areas will be evaluated at a site-specific level.

CONCLUSION

After reviewing the current status of the desert yellowhead; the environmental baseline for the action area; the effects of the Lander Resource Management Plan and the Bureau-committed conservation measures, and the cumulative effects; it is the Service biological opinion that the direct and indirect effects of the implementation of the Lander RMP with commitment to conservation measures, as proposed, are not likely to jeopardize the continued existence of the desert yellowhead.

The Service has reached this conclusion by considering the following.

1. Annual census efforts have revealed that the population has annual fluctuations in plant numbers which have varied from 9,293 individuals in 1995 to 13,244 individuals in 2000. Although the population does have annual fluctuations, the population has remained fairly stable since its discovery (USFWS 2004c).

2. The Bureau is not proposing to implement any significant changes to the management of the desert yellowhead site that will cause detrimental impacts to the population.

3. The Bureau is committed to ensuring that the desert yellowhead population is not jeopardized by Bureau-authorized activities by implementing protective measures (see Appendix) to minimize and/or eliminate potential impacts to the desert yellowhead population.

INCIDENTAL TAKE

Sections 7(b)(4) and 7(o)(2) of the Act generally do not apply to listed plant species. However, limited protection of listed plants from take is provided to the extent that the Act prohibits the removal and reduction to possession of Federally listed plants or the malicious damage of such plants on areas under Federal jurisdiction, or the destruction of endangered plants on non-Federal areas in violation of State law or regulation or in the course of any violation of a State criminal trespass law.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations (CR) are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The recommendations provided here relate only to

the proposed action and do not necessarily represent complete fulfillment of the agency's section 7 responsibility for these species.

CR1. The Service recommends that the Bureau adhere to the Best Management Practices listed in the Appendix.

CR2. The Service recommends that the Bureau include the Service in land use planning efforts near the desert yellowhead site.

CR3. In occupied desert yellowhead habitat, the Service recommends that the Bureau use management actions that are compatible with protection and conservation of pollinators of the desert yellowhead.

CR4. The Service recommends that the Bureau monitor and manage invasive species so that these do not impact the desert yellowhead.

CR5. The Service recommends that the Bureau not authorize herbicide use in or adjacent to occupied desert yellowhead habitat without prior review by Service biologists.

CR6. The Service recommends that the Bureau maintain the road closure for the desert yellowhead site indefinitely.

RE-INITIATION NOTICE

This concludes formal consultation of the actions outlined in the request. As provided in 50 Section 402.16, re-initiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing take must cease pending re-initiation.

Thank you for your assistance in the conservation of this endangered species. In future communications regarding this Biological Opinion, please refer to consultation number ES-6-WY.04-F022. If we may be of further assistance, please contact Alex Schubert of my staff at (307) 772-2374, extension 38.

cc: BLM, Endangered Species Coordinator, State Office, Cheyenne, WY (J. Carroll)
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WGFD, Non-Game Coordinator, Lander, WY (B. Oakleaf)

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APPENDIX – CONSERVATION STRATEGIES FROM DESERT YELLOWHEAD BIOLOGICAL ASSESSMENT AND SUPPORTING DOCUMENTS

These conservation strategies are taken from the Desert Yellowhead Statewide Programmatic Biological Assessment (2004) and supporting documents. Implementation of the following conservation strategies is intended to minimize, or eliminate, adverse impacts to the desert yellowhead that are likely to result from implementation of the management actions provided in the Lander Resource Management Plan (RMP). In addition to the Existing Measures 1 through 6 in the Lander RMP, the Bureau has committed to implement Conservation Measures 1 through 9. The Bureau also will consider implementing Best Management Practices (BMPs) 1 through 7 to further protect the desert yellowhead and critical habitat. All conservation measures and BMPs apply to the known population of desert yellowhead and its critical habitat. In the event new populations are discovered, these measures would apply to the individual plants, including a 0.5-mile buffer around the new site until further investigation and consultation results in more appropriate management buffers.

Existing Protections in the Lander RMP

1. No activities will be permitted in habitat for Threatened and Endangered Species that will jeopardize the continued existence of such species (Lander RMP, p. 31).

2. No critical habitat will be exchanged or sold (Record of Decision, page 37, Map 19).

3. Off-Road Vehicle use in this area is restricted to existing roads and vehicle routes (Lander RMP, p. 162; Record of Decision, p. 36).

4. Under the most recent version of the Southern Zone Suppression Plan (February 9, 2005), the desert yellowhead and its critical habitat are protected under the assigned suppression category where wildland fire is desired to manage ecosystems. The special considerations for the site specifically prohibit the use of heavy equipment, slurry dumps, or off-road travel. Initial attack would consist of handcrews using conventional tools with no vehicle travel allowed within the critical habitat. Suppression will be done using Minimal Impact Suppression Tactics (MIST), with minimal spading or other surface disturbance. Should a fire occur in this area, the dispatcher is responsible for relaying this information to the firefighters (Record of Decision, page 38)

5. Institute a No Surface Occupancy (NSO) restriction on designated desert yellowhead critical habitat for any possible future leases (Lander RMP, p. 31; Record of Decision, p. 32).

6. An emergency road closure for the trail leading to the desert yellowhead site and roads within the designated critical habitat was signed March 16, 2005 due to a surge of locatable mineral activity surrounding a very large opal deposit a few miles north of the desert yellowhead site (Jeff Carroll, Personal Communication; e-mail dated March 17, 2005).

Conservation Measures Committed to by the Bureau

1. The Bureau agrees to withdraw the designated 360 acre critical habitat area from mineral location and entry under the General Mining Law of 1872.

2. The Bureau will not increase current permitted [livestock] stocking levels.

3. The Bureau will not approve placement of mineral supplements or additional water sources for livestock, wild horses, or wildlife on public lands within 2 miles of the site.

4. No supplemental feeding or straw placement can be done without proper authorization (43 Code of Federal Regulations 4140 (a)(3)). Livestock will not be intentionally herded within 0.5 mile of the desert yellowhead site, or in designated critical habitat.

5. The Bureau will work with all interested parties in the development and implementation of a monitoring plan for the desert yellowhead and its designated critical habitat. The plan will include regular patrol of the site for unlawful uses of the land, and the monitoring of invasive weed populations. This plan will also include, but is not limited to, the inventory and monitoring of all vehicle access to the area for the purpose of restricting access of vehicles that pose a threat to the desert yellowhead population.

6. Prohibit biological control of weeds in desert yellowhead habitat until the impact of the control agent has been fully evaluated and determined not to adversely affect the plant population. The Bureau will monitor biological control vectors.

7. Apply a Condition-of-Approval (COA) on all Applications-for-Permit-to-Drill (APDs) within the desert yellowhead site and designated critical habitat, prohibiting all surface-disturbing activities.

8. Prohibit the disposal of salable minerals in designated desert yellowhead critical habitat.

9. The Bureau will not conduct wild horse management actions (e.g., temporary gathering/holding facilities) within designated critical habitat.

Best Management Practices

The following BMPs are to be considered on a case-by-case basis at the project level, and implemented where appropriate, to further protect the desert yellowhead and its designated critical habitat.

1. Analyze vegetation resource management actions when appropriate.

2. Conduct inventories for desert yellowhead in areas with potential habitat in the Lander Field Office.

3. Use a Geographic Information System (GIS)-based model of potential habitat.

4. Maintain a database of all searched potential desert yellowhead sites.

5. Train enforcement personnel on protection of the desert yellowhead and its habitat, status, and current threats.

6. Educate the resource specialists, the ranger, and the fire crew about the desert yellowhead site and its designated critical habitat to assist in project development for the general area.

7. Do not feature the desert yellowhead site in public information or recreational brochures in any form that will draw attention to the site.