



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
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Cheyenne, Wyoming 82009

In Reply Refer To:
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September 1, 2006

Memorandum

To: Robert Bennett, State Director, Bureau of Land Management, 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: Correspondence for the Wyoming Bureau of Land Management's Resource
Management Plans and their effects to the Grizzly Bear

This correspondence is in response to the U.S. Bureau of Land Management's (BLM or Bureau) request for consultation for the impacts from the Bureau's Wyoming Resource Management Plans (RMPs) to the grizzly bear (*Ursus arctos horribilis*) in Wyoming. The U.S. Fish and Wildlife Service (Service) has reviewed the biological information submitted by your office describing the effects of the Bureau's programs described in six Wyoming RMPs and the proposed Bureau-committed conservation measures on the grizzly bear. Your August 22, 2005, request for consultation was received in our office on August 26. 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).

This correspondence addresses potential effects to the grizzly bear from the described Bureau activities of all planned programs according to six of the Wyoming Bureau RMPs as well as the Bureau's commitment to the Conservation Measures listed in the Bureau's Statewide Programmatic Grizzly Bear Biological Assessment (BA). These programs depending on the RMP include: (1) Access Management, (2) Air Quality, (3) Cultural/ Paleontological/Historical Resources Management, (4) Fire Management, (5) Forest Management, (6) Minerals and Geology Management, (7) Hazardous Materials Management, (8) Lands and Realty Management, (9) Livestock Grazing Management, (10) Off-Road Vehicle Management, (11) Paleontology/Natural History Management, (12) Recreation, (13) Soils, (14) Special Status Plant Species, (15) Vegetation, (16) Visual, (17) Wildlife and Fish Management, (18) Wild and Scenic Rivers, (19) Wild Horses, (20) Geothermal, (21) Special Areas/ACEC, (22) Watershed/Water, (23) Water/Soils, (24) Wilderness, (25) Riparian, and (26) Surface Disturbance Restriction Management. The RMPs covered in this correspondence are the Cody, Kemmerer,

Lander, Pinedale, Green River (Rock Springs Field Office), and Grass Creek (Worland Field Office) RMPs.

This correspondence has two parts--(1) informal consultation for "no effect" (NE) and "not likely to adversely effect" (NLAA) determinations for the effects of (a) all programs except grazing to the grizzly bear in the Cody, Lander, Pinedale, and Grass Creek RMP administrative areas and (b) all programs to the grizzly bear in the Kemmerer and Great Divide RMP administrative areas, and (2) a biological opinion (BO) for potential adverse effects from grazing in the Cody, Lander, Pinedale, and Grass Creek RMP administrative areas. The Snake River RMP will not be discussed further in this correspondence as programmatic consultation was recently completed (WY7304, December 19, 2003) on that RMP.

This consultation is based primarily on our review of your BA (BLM 2005) and the Bureau-committed Conservation Measures (Appendix) as described in your August 22, 2005 letter of initiation of formal consultation. A complete administrative record of all documents and correspondence concerning this consultation is on file in the Wyoming Ecological Services Field Office.

Consultation History

The Service and the Bureau began informal consultation on impacts of Wyoming Bureau activities to the grizzly bear on October 23, 2001. From October 2001 through August 2005, Service personnel met informally with Bureau personnel to assist in the completion of the Programmatic Grizzly Bear BA. We reviewed a draft of the BA received in November 2004 and provided comments on that draft in December 2004. The Service received the Bureau's Final Programmatic Grizzly Bear BA and request for consultation on August 26, 2005. We provided a draft BO to the Bureau on February 6, 2006. On July 14, 2006, the Service received the Bureau's comments on that draft BO. The Service then proceeded to finalize this consultation.

Informal Consultation

In its grizzly bear BA, the Bureau made "not likely to adversely affect (NLAA)" or "no effect (NE)" determinations for the effect of its management programs on the grizzly bear in the Wyoming Bureau RMPs shown in Table 1.

Table 1. Grizzly bear "not likely to adversely affect (NLAA)" and "no effect (NE)" determinations made by the Bureau.

Resource Management Plan Program Type	Cody RMP	Kemmerer RMP	Lander RMP	Pinedale RMP	Green River RMP (Rock Springs Field Office)	Grass Creek RMP (Worland Field Office)
Access	NLAA	NLAA	NLAA	NLAA	NLAA	NLAA
Air Quality	NE	NE	NE	NE	NE	NE
Cultural/paleo./historical	NLAA	NLAA	NLAA	NLAA	NLAA	NLAA
Fire	NLAA	NLAA	NLAA	NLAA	NLAA	NLAA
Forest Management	NLAA	NLAA	NLAA	NLAA	NLAA	NLAA
Minerals and Geology	NLAA	NLAA	NLAA	NLAA	NLAA	NLAA
Hazardous Materials	NLAA	-----	-----	-----	NLAA	NLAA
Lands and Realty	NLAA	NLAA	NLAA	NLAA	NLAA	NLAA
Livestock Grazing	-----	NLAA	-----	-----	NLAA	-----
ORV Use	NLAA	NLAA	NLAA	NLAA	NLAA	NLAA
Paleontology/Natural History	-----	-----	-----	NLAA	-----	-----
Recreation	NLAA	NLAA	NLAA	NLAA	NLAA	NLAA
Soils	-----	NLAA	NLAA	-----	-----	-----
Special Status Plant Species	-----	-----	-----	-----	NE	-----
Vegetation	-----	NLAA	-----	-----	NLAA	NLAA
Visual	NLAA	-----	-----	NLAA	NLAA	NLAA
Wildlife and Fish	NLAA	NLAA	NLAA	NLAA	NLAA	NLAA
Wild and Scenic Rivers	NE	NLAA	NLAA	NLAA	NLAA	NE
Wild Horses	NE	-----	NE	NE	NE	NE
Geothermal	NE	-----	-----	-----	-----	-----
Special Areas/ACEC	NLAA	-----	NLAA	NLAA	NE	NLAA
Watershed/water	NLAA	NLAA	NLAA	-----	-----	NLAA
Water/Soils	-----	-----	-----	NLAA	NLAA	-----
Wilderness	NE	NLAA	NLAA	NLAA	NE	NLAA
Riparian	-----	NLAA	-----	NLAA	NLAA	-----
Surf. Dist. Restriction	-----	-----	-----	NLAA	-----	-----

The Service concurs with your determination that activity programs described in the Wyoming Bureau's RMPs shown in Table 1 will not likely adversely affect or have no effect on the grizzly bear because (1) the activity will not occur in grizzly bear habitat, (2) the activity by its very nature will have no effect or will not be likely to adversely affect the grizzly bear, (3) lands within these Bureau-RMP administrative areas are not likely to contain occupied grizzly bear habitat as these areas lie outside of the Primary Conservation Area for the Yellowstone Grizzly Bear Population, (4) no grizzly bears have been recorded within these Bureau-RMP administrative areas in the recent past, or (5) the Bureau has committed to implementing conservation measures (see Appendix) that are based on the Interagency Grizzly Bear Guidelines (IGBC 1986) and the Grizzly Bear Conservation Strategy (ICST 2003) that will reduce the likelihood that any Bureau-authorized actions would adversely affect the grizzly bear if one were to disperse to these Bureau RMP administrative areas.

The following effects may influence grizzly bears in some portions of their range. However, these effects are considered unlikely to occur as a result of discretionary actions of the Bureau as authorized under the Cody, Kemmerer, Lander, Pinedale, Green River, and Grass Creek RMPs in Wyoming. These effects are: (1) a reduction in the potential future foods for grizzly bears, (2) displacement from high quality habitats preventing grizzly bear dispersal and causing social disruption, and (3) fragmentation or destruction of suitable grizzly bear habitat.

Additionally, the following effects are considered unlikely to occur as a result of discretionary actions of the Bureau as authorized under the Bureau's Kemmerer and Green River RMPs in Wyoming. These effects are: (1) mortality or harm from vehicle collisions or from illegal, accidental, or defensive taking of grizzly bears by grazing permittees/employees and other members of the public, (2) harassment and disturbance of denning, travel, and foraging areas from human activity, noise, and other hazards (such as chemical toxins), and (3) relocation or removal of grizzly bears by authorized officials.

A summary description of the programs and a summary of the rationale behind the above effects determinations follow. The following discussion is an overview of the Bureau's RMP activity programs and Bureau-committed conservation measures for the Cody, Kemmerer, Lander, Pinedale, Green River, and Grass Creek RMPs which are not likely to adversely affect or will not affect the grizzly bear.

The following discussion describes the Wyoming Bureau's RMP programs and the anticipated effects of those programs on the grizzly bear. Conservation Measures (see also Appendix) were identified in the Bureau's Programmatic Grizzly Bear 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 grizzly bear taking into account the Bureau's commitment to the implementation of the conservation measures. As per the Bureau's letter of August 22, 2005 initiating consultation, commitment of the Bureau to the conservation measures will be formalized through a maintenance action or amendment of the Cody, Kemmerer, Lander, Pinedale, Green River, and Grass Creek RMPs following completion of this consultation.

Access Management

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

Access across private lands will be pursued as needed through a variety of methods including, but not limited to, purchase of rights-of-way or easements, land exchange, reciprocal rights-of-way, and other statutory authorities. Specific routes and acquisition procedures for securing access are determined through route analyses and environmental analyses as part of specific project and activity planning. Where appropriate, land exchanges or cooperative agreements are considered to provide access needs.

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

Anticipated Effects to the Grizzly Bear. Access management activities are expected to not likely adversely affect the grizzly bear in all six Bureau RMP administrative areas because the Bureau shall implement the identified conservation measures and due to the limited use of lands within the six Bureau RMP administrative areas by grizzly bears. Conservation measures are designed to reduce the potential for human-bear encounters and related bear mortality, and provide secure habitat for females to raise their young. Conservation efforts include reduction in bear access to human food and garbage, evaluation of road densities, research on availability of grizzly foods, and other study of bears and their habitat.

Air Quality Management

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

Bureau-initiated actions or authorizations are planned in accordance with Wyoming and national air quality standards. This is accomplished through the coordination of activities with the Wyoming Department of Environmental Quality (WDEQ) and the U.S. Environmental Protection Agency. Laws controlling air pollutants in the United States are the Clean Air Act of 1970 and its amendments, and the 1999 Regional Haze Regulations. The concentrations of air

contaminants in the planning area need to be within limits of Wyoming ambient air quality standards (WAAQS) and national ambient air quality standards (NAAQS). Both WAAQS and NAAQS are legally enforceable standards for particulate matter (PM₁₀), nitrogen dioxide (NO₂), ozone, sulfur dioxide (SO₂), and carbon monoxide (CO).

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

Anticipated Effects to the Grizzly Bear. Air quality management activities within the RMP administrative areas are small in scope, of short duration, and are infrequent. These management activities are expected to have no impact on the grizzly bear's behavior, or its foraging or denning habitat.

Cultural Resources Management

Program Description. The objective of cultural resource management is to protect, preserve, interpret, and manage significant cultural resources for their informational, educational, recreational, and scientific values. Site-specific inventories for cultural resources would be required before the start of surface-disturbing activities, or if Bureau-administered lands are proposed to be transferred out of federal ownership.

The Bureau performs inventory activities as well as land management activities. 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 conservation plans before other resource program surface-disturbing activities. Inventory activities commonly entail the use of hand tools, power tools, or heavy machinery. Inventories are divided into Class I, Class II, and Class III inventories. The Bureau does cultural resource inventories normally in response to surface-disturbing projects. Intensity varies between inventories. Inventories may involve two to seven individuals and trucks, and may last from one day to several weeks.

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

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. Sites listed on, or eligible for, the National Register for Historic Places (NRHP) are protected and would be managed for their local and national significance and in compliance with the National Historic Preservation Act, the Archaeological Resources Protection Act, the American Indians Religious Freedom Act, and the Native American Graves Protection and Repatriation Act, as appropriate.

Anticipated Effects to the Grizzly Bear. Cultural resource activities are expected to not likely adversely affect the grizzly bear in all six Bureau RMP administrative areas because these activities are normally sparsely distributed across the landscape, are very small in physical extent, involve very little disturbance to the area, and are unlikely to occur in grizzly bear habitat. Furthermore, there is limited use of the six Bureau RMP administrative areas by grizzly bears. In addition, the Bureau has agreed to implement the identified conservation measures. Conservation measures are designed to reduce the potential for human-bear encounters and related bear mortality, and provide secure habitat for females to raise their young. Conservation efforts include reduction in bear access to human food and garbage, evaluation of road densities, research on availability of grizzly foods, and other study of bears and their habitat.

Fire Management

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

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

Wildfires threatening higher resource values, including commercial timber areas, developed recreation sites, and areas of wildland/urban interface, or fires with potential to spread to private, state, or other federal lands are suppressed. Fire suppression activities vary with the intensity of the wildfire and are conducted on an emergency basis. Fire lines are constructed to contain the wildfire. Water is withdrawn from nearby sources to suppress fires. Chemical fire suppression agents containing chemical dyes may be used, if needed. The use of aerial fire retardant is restricted near water resources. After a fire is extinguished, the Bureau may use rehabilitation techniques to restore a burned or suppression area to its previous vegetative cover.

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

The fire damage restoration program proposes the Bureau use a technique called Analysis of Burned Area Emergency Rehabilitation (BAER) on all areas damaged by fire. This technique is used to evaluate the impact of restoration efforts on the ecosystems involved.

Anticipated Effects to the Grizzly Bear. Fire resource activities are expected to not likely adversely affect the grizzly bear in all six Bureau RMP administrative areas because the Bureau has agreed to implement the identified conservation measures and due to the limited use of those administrative areas by grizzly bears. Conservation measures are designed to reduce the potential for human-bear encounters and related bear mortality, and provide secure habitat for females to raise their young. Conservation efforts include reduction in bear access to human food and garbage, evaluation of road densities, research on availability of grizzly foods, and other study of bears and their habitat.

Forest Resources Management

Program Description. The objective of forest management is to maintain and enhance the health, productivity, and biological diversity of forest and woodland ecosystems and to provide a balance of natural resource benefits and uses, including opportunities for commercial forest production. Multiple uses are found in forests and the Bureau manages forests for recreation, livestock grazing, wildlife habitat, and prescribed burning.

The program allows the cutting and removal of diseased trees, disease treatment by spraying, and herbicidal spraying of grasses and shrubs, and pre-commercial thinning, chaining, and shearing. Clearcuts, slash disposal, logging, helicopter logging, and skidder-type and cable yarding are allowed during timber harvest. Non-commercial timber harvest involves collection and cutting of firewood, Christmas trees, posts, poles, and wildlings. The Bureau ensures that site regeneration and stand replacement follow timber harvest. Forest management activities may include conducting surveys, obtaining easements, pursuing legal access, allowing road development, and installing drain culverts and water bars.

Timber harvesting occurs on commercial forestlands with slopes less than 45 percent. Forest products are sold by permit. Individual authorized clearcuts may not exceed 20 acres. Areas within 200 feet of surface water are prohibited from harvest. Slash is to be lopped and scattered, roller chopped, or burned. Regeneration areas are often enclosed by fence to prevent wildlife and livestock from damaging seedlings. Private and state land may be accessed for forest management purposes through acquisition of easement.

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

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.

Anticipated Effects to the Grizzly Bear. Forest resource activities are expected to not likely adversely affect the grizzly bear in the six Bureau RMP administrative areas with grizzly bear habitat because the Bureau has agreed to implement the identified conservation measures and due to the limited use of those administrative areas by grizzly bears. Conservation measures are designed to reduce the potential for human-bear encounters and related bear mortality, and provide secure habitat for females to raise their young. Conservation efforts include reduction in bear access to human food and garbage, evaluation of road densities, research on availability of grizzly foods, and other study of bears and their habitat.

Minerals and Geology Resource Management

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

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

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

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

scoria, flagstone, moss rock, and other minerals are available for free use or sale but are subject to conditions and stipulations developed on a case by case basis.

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

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

Leasable Minerals. Leasable minerals include fluid (oil, gas, geothermal) and solid minerals such as coal, trona, and phosphate. Bentonite and uranium are leasable on acquired lands. Current use of coal is primarily for electric generation. Coal in Wyoming is most generally extracted using surface mining methods although in the past some coal was mined underground. Underground mining method is proposed for some future operations. Surface mining requires a federal coal lease from the Bureau, mining permits from the State, mine plans approved by OSM. Surface mining involves the use of large equipment such as draglines, shovels, haul trucks, etc. Small drill rigs are used for exploration to determine the location, thickness, and obtain cores (for determining quality). Extracting coal using surface mining methods often results in large areas of surface disturbance from road construction, removal of topsoil and overburden, and stock piling of these materials. Once an area is mined out, reclamation begins and includes recontouring as closely to the original landscape as possible the reconstruction of drainages, and reseeding and monitoring to assure the habitat is useable. Coal is leased under the Mineral Leasing Act of 1920 and the Federal Coal Leasing Amendments Act of 1976.

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

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

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

Fluid leasable minerals include oil, gas, and geothermal steam. Leasing of oil and gas resources is under the authority of the Mineral Leasing Act of 1920 as amended. Leasing is administered by the Bureau through a competitive and non-competitive system. The Bureau receives

nominations of lands to be put up for sale at the bimonthly competitive oil and gas sales. These nominations are gathered together into a parcel list and sent to the respective Bureau field office for the attachment of stipulations. These stipulations are then derived from each RMP. The parcel list is returned to the state office and once verified are put together into the Notice of Competitive Oil and Gas Sale booklet. This Notice must be posted for the public 45 days before the lease sale is held. Once the parcel is sold, it is then issued into a lease.

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

Development of oil and gas fields includes construction of the same types of facilities used during exploration, but in addition it may be necessary to obtain federal rights of ways for product pipelines and power lines. Other surface uses associated with oil and gas development include construction of storage tank batteries and facilities to separate oil, gas and water. Compressor engines (can be gas powered or electric) may be required to move gas to a pipeline, and diesel, gas, or electric pumps and other related equipment may be needed to lift the oil, gas, or water from the well to the surface. Generally, there are an average of three acres for each drill site, 1 mile of road and 1 mile of pipeline for each drill site. This can vary widely with each project. Directional drilling requires a bigger pad than one well. Size is dependent on the number of wells drilled from each pad.

Water is often produced concurrently with oil and gas production and disposal methods can range from subsurface re-injection to direct surface discharge to discharge into a containment pond or pit. Some fields may have large volumes of water or very little water. Water that cannot be discharged to the surface because of its chemical makeup may be treated before surface discharge or may be reinjected. Roads may be two track unimproved roads to crown and ditched roads designed by an engineer. One day to over a month may be required to drill the well depending on the type of well (vertical or directional), depth and types of rocks encountered. Reclamation involves reseeding and the recontouring of unneeded roads and unneeded portions of the well pads.

Geothermal resources are available for exploration, development, and production and are subject to the same surface disturbing and other restrictions applied to oil and gas exploration, development and production. Similar to oil and gas leasing, the Bureau administers geothermal leases through a competitive and non-competitive system. The Geothermal Steam Act of 1970 authorizes leasing.

Locatable Minerals. Locatable minerals include gypsum, silver, gold, platinum, cobalt and other precious and base minerals. Bentonite and uranium are also locatable except on acquired lands. Minerals are locatable under the 1872 Mining Law. Most public lands are open to location with the exception of withdrawn lands. The Mining Law of 1872 sets the requirements for lode

claims, placer claims, and mill sites as well as discovery, location, annual filings, assessment work, and mineral examinations to establish validity.

Anticipated Effects to the Grizzly Bear. Energy and Mineral resource activities are expected to not likely adversely affect the grizzly bear in all six Bureau RMP administrative areas because the Bureau has agreed to implement the identified conservation measures and due to the limited use of the six Bureau RMP administrative areas by grizzly bears. Conservation measures are designed to reduce the potential for human-bear encounters and related bear mortality, and provide secure habitat for females to raise their young. Conservation efforts include reduction in bear access to human food and garbage, evaluation of road densities, research on availability of grizzly foods, and other study of bears and their habitat.

Hazardous Materials Management

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

Hazardous materials and waste management policies are integrated into all Bureau programs. Public lands contaminated with hazardous wastes are reported, secured, and cleaned according to federal and state laws, regulations, and contingency plans. Warnings are issued to potentially affected communities and individuals if hazardous material is released on public land.

Anticipated Effects to the Grizzly Bear. Hazardous materials management activities are expected to not likely adversely affect the grizzly bear in all six Bureau RMP administrative areas because the Bureau has agreed to implement the identified conservation measures and due to the limited use of those administrative areas by grizzly bears. Conservation measures are designed to reduce the potential for human-bear encounters and related bear mortality, and provide secure habitat for females to raise their young. Conservation efforts include reduction in bear access to human food and garbage, evaluation of road densities, research on availability of grizzly foods, and other study of bears and their habitat.

Lands and Realty Management

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

Public land tracts not critical to current management objectives will be disposed of through the realty management program. Non-federal lands may be acquired through exchange in areas with potential for recreation development or in areas containing important wildlife, cultural, scenic, natural, open space, or other resource values. Protective withdrawals may be established to protect and preserve important resource values, but require extensive mineral investigations.

Realty management authorizes occupancy of public lands for roads, power lines, pipelines, communication sites, and irrigation ditches authorized by granting a right-of-way.

Rights-of-way management actions respond to public requests for access, land authorizations, sales, and exchanges. These rights-of-way may be temporary or extend two years or longer. If restricted types of rights of way are required in avoidance areas or when such areas cannot reasonably be avoided, the adverse effects of construction will be intensively managed in these areas.

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

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

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

Anticipated Effects to the Grizzly Bear. Lands and realty management activities are expected to not likely adversely affect the grizzly bear in all six Bureau RMP administrative areas because the Bureau has agreed to implement the identified conservation measures and due to the limited use of those administrative areas by grizzly bears. Conservation measures are designed to reduce the potential for human-bear encounters and related bear mortality, and provide secure habitat for females to raise their young. Conservation efforts include reduction in bear access to human food and garbage, evaluation of road densities, research on availability of grizzly foods, and other study of bears and their habitat.

Livestock Grazing Management

Program Description. The management objective of livestock grazing management is to maintain or improve forage production and range condition as a sustainable resource base for livestock grazing on the public lands while improving wildlife habitat and watershed condition. Management actions on grazing allotments are prioritized by and classified into one of three management categories: maintain (M), improve (I), and custodial (C). Certain areas may be closed to livestock grazing because of conflicts with other resource uses including, but not limited to, timber sale areas being re-harvested, crucial wildlife or endangered species habitat, developed recreation sites, or education areas. Range management activities include using prescribed fire, vegetation manipulation projects, changing the composition of existing vegetation, using noxious weed control, using mechanical or biological vegetative treatments to improve forage production, using heavy equipment, and the herbicidal spraying of sagebrush.

Fencing activities authorized by the livestock grazing management program may include fence construction and repair, designing and implementing grazing systems, and building livestock enclosures for important riparian habitat. Water management activities associated with range management may include the development of reservoirs, springs, pipelines, and wells, and providing access to these developments. 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 adjusting livestock driveways.

Permanent increases in available forage are considered for wildlife and watershed protection before additional livestock use is authorized. Livestock management includes converting to new types of livestock, authorizing livestock grazing, and adjusting season of use, distribution, kind, class, and number of livestock. Salt or mineral supplements may be provided.

Anticipated Effects to the Grizzly Bear. Livestock grazing management activities are not expected to adversely affect the grizzly bear in the Kemmerer and Green River RMP administrative areas because (1) grizzly bears are not known to occur in these RMP administrative areas, and (2) the Bureau has agreed to implement a suite of conservation measures to restrict Bureau-authorized activity and educate personnel as to the proper precautions to take in occupied grizzly bear habitat (See Appendix) if grizzly bears did expand their range to occupy these two RMP administrative areas. Conservation measures are designed to reduce the potential for human-bear encounters and related bear mortality, and provide secure habitat for females to raise their young. Conservation efforts include reduction in bear access to human food and garbage, evaluation of road densities, research on availability of grizzly foods, and other study of bears and their habitat. The effects of the Bureau's livestock grazing management programs in the Cody, Lander, Pinedale, and Grass Creek RMP administrative areas are likely to adversely affect the grizzly bear and are the subject of the attached biological opinion.

Off-Highway Vehicle (OHV) Management

Program Description. The objective of OHV management is to offer outdoor recreational opportunities on Bureau-administered public land while providing for resource protection, visitor services, and the health and safety of public land visitors. Using motorized off-highway vehicles requires no fee and no permit, but their use is restricted depending on whether the area has been designated as closed, limited, or open.

Off-Highway Vehicle management designates closed, limited, or open areas for OHV use; posts signs, maps, or brochures; permits OHV rallies, cross-country races, and outings; monitors OHV use; and performs necessary tasks requiring OHV use. Off-Highway Vehicle use (including over-the-snow vehicles) on Bureau-administered lands is limited to existing roads and trails. Some areas are closed to OHV use.

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

Anticipated Effects to the Grizzly Bear. OHV management activities are expected to not likely adversely affect the grizzly bear in the six Bureau RMP administrative areas with grizzly bear habitat because the Bureau has agreed to implement the identified conservation measures and due to the limited use of the six Bureau RMP administrative areas by grizzly bears. Conservation measures are designed to reduce the potential for human-bear encounters and related bear mortality, and provide secure habitat for females to raise their young. Conservation efforts include reduction in bear access to human food and garbage, evaluation of road densities, research on availability of grizzly foods, and other study of bears and their habitat.

Paleontological Resources Management

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

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

Potential effects on paleontological resources on Bureau-administered public lands will be considered in site-specific environmental analyses before authorizing surface-disturbing activities. Site-specific inventories will be required where significant fossil resources are known or are anticipated to occur. Hobby collection of invertebrate fossils and petrified wood are allowed except in specified areas. The closing of Bureau-administered public lands or restricting uses to protect paleontological resources are evaluated case-by-case.

Anticipated Effects to the Grizzly Bear. Paleontological resource activities are expected to not likely adversely affect the grizzly bear in all six Bureau RMP administrative areas because the Bureau has agreed to implement the identified conservation measures and due to the limited use of the six Bureau RMP administrative areas by grizzly bears. Conservation measures are designed to reduce the potential for human-bear encounters and related bear mortality, and provide secure habitat for females to raise their young. Conservation efforts include reduction in bear access to human food and garbage, evaluation of road densities, research on availability of grizzly foods, and other study of bears and their habitat.

Recreation Resources Management

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

Categories of activities of the Bureau for recreation management include allowing recreational access and use by the public, developing recreational areas, imposing restrictions, acquiring recreational access, and assessing effects of recreational use to the environment. The Bureau

monitors recreational use, develops management plans, and evaluates and updates recreational potential.

Recreational activities allowed by the Bureau include hiking, hunting, mountain biking, boating, and fishing, off-highway vehicle (OHV) use (including snowmobiles), horseback riding, and camping. Casual use of Bureau-administered public land for hiking, bicycling, hunting, fishing, and similar uses are allowed without charge. Large recreational events may include organized group hikes, motocross competitions, or horse endurance rides. The Bureau develops recreational and camping sites. Recreational site development includes maintaining or developing recreational sites and facilities, developing campgrounds, providing fishing and floating opportunities, maintaining developed and undeveloped recreation sites, adding developments as opportunities arise, adding interpretive markers, and constructing roads and interpretive sites.

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

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

Anticipated Effects to the Grizzly Bear. Recreation management activities are expected to not likely adversely affect the grizzly bear in all six Bureau RMP administrative areas because the Bureau has agreed to implement the identified conservation measures and due to the limited use of those administrative areas by grizzly bears. Conservation measures are designed to reduce the potential for human-bear encounters and related bear mortality, and provide secure habitat for females to raise their young. Conservation efforts include reduction in bear access to human food and garbage, evaluation of road densities, research on availability of grizzly foods, and other study of bears and their habitat.

Soil Management

Program Description. The objective for soil resources management is to maintain soil cover and productivity and provide for improvement in areas where soil productivity may be below potential on surface lands administered by the Bureau.

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

Anticipated Effects to the Grizzly Bear. Soil Management activities are expected to not likely adversely affect the grizzly bear in all six Bureau RMP administrative areas because the Bureau

has agreed to implement the identified conservation measures and due to the limited use of those administrative areas by grizzly bears. Conservation measures are designed to reduce the potential for human-bear encounters and related bear mortality, and provide secure habitat for females to raise their young. Conservation efforts include reduction in bear access to human food and garbage, evaluation of road densities, research on availability of grizzly foods, and other study of bears and their habitat.

Special Status Plant Species Management

Program Description. Under the Special Status Plant Species Management Program, the Bureau maintains and enhances known populations of sensitive plant species (as designated by the respective Bureau State Director – see Bureau Manual 6840 – Special Status Species Management) within Bureau-administered public lands.

Known populations of sensitive plant species are protected from disturbance by maintaining or establishing fencing around the populations and/or by intensively managing surface-disturbing activities within sensitive plant habitat and in adjacent areas that could affect the populations. Sensitive plant species management may require short-term disturbances from construction activities such as fencing, inventory or monitoring of sensitive plants and their habitats. Case-by-case examinations of any proposed surface-disturbing activity are made to determine potential adverse effects and appropriate impact minimization measures to minimize those effects. Developments, uses, and facilities are managed temporally and spatially to avoid damage to the sensitive plant species.

While Federally-listed plant species do not fall under the Wyoming BLM sensitive plant species designation, protective measures are developed for their habitats or sites as well by the respective Bureau Field Office in consultation with the Service.

Anticipated Effects to the Grizzly Bear. Special status plant species management activities are expected to not likely adversely affect the grizzly bear in all six Bureau RMP administrative areas because the Bureau has agreed to implement the identified conservation measures and due to the limited use of those administrative areas by grizzly bears. Conservation measures are designed to reduce the potential for human-bear encounters and related bear mortality, and provide secure habitat for females to raise their young. Conservation efforts include reduction in bear access to human food and garbage, evaluation of road densities, research on availability of grizzly foods, and other study of bears and their habitat.

Vegetation Resource Management

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

Vegetation treatments, including timber harvesting, sagebrush spraying or burning, will be designed to meet overall resource management objectives. Cooperative integrated weed control

programs implement weed control work on adjoining deeded and state lands in cooperation with county weed and pest districts. The three types of control used by the Bureau on public lands are chemical, biological, and mechanical. Biological control can involve the use of weevils, beetles, or goats. This method may be used in cooperation with mechanical control (e.g., dozing, cutting, chopping). Sagebrush control measures are also implemented by the Bureau. These control methods may be chemical or mechanical. Fire is used as a management tool to improve range forage production, wildlife habitat, timber stand improvement, sale debris disposal, and to reduce hazardous fuel buildup. Noxious weed control is typically implemented along rights-of-way.

Trees will be planted on timber harvest areas that fail to regenerate naturally in order to achieve minimum stocking levels within five years after completing harvest and rehabilitation activities. Pre-commercial tree thinning will be initiated on overstocked seedling- and sapling-size stands. Temporary use of heavy equipment may be associated with these authorized activities. If herbicides are proposed for use, minimum-toxicity herbicides should be used with appropriate buffer zones along streams, rivers, lakes, and riparian areas, including those along ephemeral and intermittent streams. Only federally approved pesticides and biological controls are used. Local restrictions within each county are also followed. Projects that may affect threatened or endangered plants or animals will be postponed or modified to protect these species. Pesticide Use Proposals (PUPs) and Biological Use Proposals (BUPs) are developed conjunctively with the County Weed and Pest Districts and the Bureau. All PUPs and BUPs are reviewed by the state Noxious Weed Coordinator and approved by the Bureau Assistant State Director.

Anticipated Effects to the Grizzly Bear. Vegetation resource activities are expected to not likely adversely affect the grizzly bear in all six Bureau RMP administrative areas because the Bureau has agreed to implement the identified conservation measures and due to the limited use of those administrative areas by grizzly bears. Conservation measures are designed to reduce the potential for human-bear encounters and related bear mortality, and provide secure habitat for females to raise their young. Conservation efforts include reduction in bear access to human food and garbage, evaluation of road densities, research on availability of grizzly foods, and other study of bears and their habitat.

Visual Resources Management

Program Description. The objective of visual resources management is to maintain or improve scenic values and visual quality, and establish visual resources management priorities in conjunction with other resource values. Visual resources are managed in accordance with objectives for visual resources management (VRM) classes that have been assigned to each Bureau Field Office. Visual resource classification inventories have been developed for some, but not all, of the areas in Wyoming. To improve visual resources, the Bureau designs facilities to blend in with the surroundings, reclaims watershed projects and water wells, regulates discharge of produced water, and restricts activities that might degrade visual resources.

No activity or occupancy is allowed within 200 feet of the edge of state and federal highways. Facilities or structures such as power lines, oil wells, and storage tanks are required to be screened, painted, and designed to blend with the surrounding landscape, except where safety indicates otherwise. Any facilities or structures proposed in or near wilderness study areas will be designed so as not to impair wilderness suitability.

Anticipated Effects to the Grizzly Bear. Visual resource activities are expected to not likely adversely affect the grizzly bear in all six Bureau RMP administrative areas because the Bureau has agreed to implement the identified conservation measures and due to the limited use of those administrative areas by grizzly bears. Conservation measures are designed to reduce the potential for human-bear encounters and related bear mortality, and provide secure habitat for females to raise their young. Conservation efforts include reduction in bear access to human food and garbage, evaluation of road densities, research on availability of grizzly foods, and other study of bears and their habitat.

Wildlife and Fish Management

Program Description. The objectives of wildlife and fish management are to maintain the biological diversity of plant and animal species; support the strategic plan population objective levels of the Wyoming Game & Fish Department (WGFD) to the extent practical and to the extent consistent with Bureau multiple-use management requirements; maintain and, where possible, improve forage production and quality of rangelands, fisheries, and wildlife habitat; and, to the extent possible, provide habitat for threatened and endangered and special status plant and animal species on all public lands in compliance with the Endangered Species Act and 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. Specific management goals and actions are for several wildlife groups and habitats including big game ranges, wetland and riparian areas, elk habitat, raptor and grouse breeding areas, and animal and insect damage control. Wildlife management maintains and, where possible, improves forage productions and quality of rangelands, fisheries, and wildlife habitat, and provides habitat for threatened, endangered, and special status animal and plant species on Bureau-administered public land surface in compliance with the Endangered Species Act and approved recovery plans.

Big game and fisheries management levels identified in the WGFD 1990-1995 strategic plan are supported by the Bureau. The Bureau cooperates with the WGFD in introducing or reintroducing native and acceptable non-native wildlife and fish where potential habitat exists. Wildlife habitat is monitored and population adjustments and habitat improvements are recommended to the WGFD, as appropriate. The Bureau works with the U.S. Fish and Wildlife Service and the WGFD in evaluating and designating critical habitat for threatened and endangered species on Bureau-administered public lands.

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

The Bureau develops stipulations and protective measures to enhance wildlife and fisheries habitat. These include authorizing withdrawals of some areas from mineral entry; limiting access of four-wheel drives, snowmobiles, horseback, and pedestrians; prohibiting surface

development; and imposing road closures. The Bureau may acquire riverfront land or easements, and conducts inventories of potential habitat and occurrences of threatened, endangered, and sensitive species.

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

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 measures; 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 exotic fish removal.

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 to the Grizzly Bear. Wildlife habitat management resource activities are expected to not likely adversely affect the grizzly bear in all six Bureau RMP administrative areas because the Bureau has agreed to implement the identified conservation measures and due to the limited use of those administrative areas by grizzly bears. Conservation measures are designed to reduce the potential for human-bear encounters and related bear mortality, and provide secure habitat for females to raise their young. Conservation efforts include reduction in bear access to human food and garbage, evaluation of road densities, research on availability of grizzly foods, and other study of bears and their habitat.

Wild and Scenic Rivers Management

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

Anticipated Effects to the Grizzly Bear. Forest resource activities are expected to not likely adversely affect the grizzly bear in all six Bureau RMP administrative areas because the Bureau has agreed to implement the identified conservation measures and due to the limited use of those administrative areas by grizzly bears. Conservation measures are designed to reduce the potential for human-bear encounters and related bear mortality, and provide secure habitat for females to raise their young. Conservation efforts include reduction in bear access to human food and garbage, evaluation of road densities, research on availability of grizzly foods, and other study of bears and their habitat.

Wild Horse Management

Program Description. The management objective of wild horse management is to maintain a viable herd that will preserve the free-roaming nature of wild horses in a thriving ecological balance and to provide opportunity for the public to view them. The FLPMA amended the Wild and Free Roaming Horse and Burro Act to authorize the use of helicopters in horse and burro roundups. Wild horse and burro populations have more than tripled since passage of the Wild and Free Roaming Horse and Burro Act in 1971, and horse numbers on Bureau lands in the West were estimated at more than 60,000 as compared to 17,000 in the late 1960's.

The Wild Horse Program herds, corrals, transports, monitors, and rounds up horses for wild horse management. Herds are monitored by airplane census and counted each year. Helicopters may also be used to round up wild horses.

Land Use Plans are used to plan wild horse management. The Bureau decides how many horses to allow on a certain area. This is termed the Approximate Management Level and the Bureau can adjust horse numbers as needed. Issues taken into consideration include carrying capacity, trends in utilization, and public input. The Bureau's wild horse management specialists

coordinate with wildlife biologists and archaeologists to ensure that wild horse management will not cause adverse impacts to biological or cultural resources.

Anticipated Effects to the Grizzly Bear. Wild horse management activities are expected to have no effect to the grizzly bear in all Bureau RMP administrative areas in Wyoming because the Bureau's wild horse management actions are not expected to occur in or near occupied grizzly bear habitat.

Geothermal Management.

See Energy and Minerals program description above.

Areas of Critical Environmental Concern (ACEC) Management

Program Description. The objectives of special management areas, such as Areas of Critical Environmental Concern (ACECs) are to ensure continued public use and enjoyment of recreation activities, while protecting and enhancing natural and cultural values; improving opportunities for high quality outdoor recreation; and, improving visitor services related to safety, information, interpretation, and facility development and maintenance.

Under the Special Areas Management program, the Bureau closes areas where accelerated erosion is occurring; implements restrictions on logging and heavy equipment use; evaluates noxious weed and grasshopper control measures; applies restrictions on ground-disturbing activities; develops recreational trails; guides supervised tours; protects petroglyphs, artifacts, and cultural deposits from weathering and vandalism; and pursues land exchanges. Significant sites and segments along the Oregon/Mormon Pioneer Natural Historic Trails will be designated as ACECs.

Anticipated Effects to the Grizzly Bear. ACEC programs are expected to not likely adversely affect the grizzly bear in the Cody, Lander, Pinedale, and Grass Creek RMP administrative areas as ACEC management activities do not directly involve ground-disturbing activities or increased human presence in grizzly bear habitat. Beneficial effects to the grizzly bear could be realized under this program in these four field offices since many ACEC management actions involve limiting surface disturbing activities or the application of resource protective measures. The management of ACECs in the Green River administrative area is expected to have no effect to the grizzly bear because no suitable grizzly bear habitat occurs in or near ACECs there.

Watershed and Water Resources Management

Program Description. The objective of watershed and water resources management is to maintain or improve surface and groundwater quality consistent with existing and anticipated uses and applicable state and federal water quality standards, to provide for availability of water to facilitate authorized uses, and to minimize harmful consequences of erosion and surface runoff from Bureau-administered public land. Passing of the Water Resources Research Act, Water Resources Planning Act, and the Water Quality Act of 1965 allowed the Bureau to expand its water resources program and increased cooperation with soil conservation districts.

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

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

Anticipated Effects to the Grizzly Bear. Watershed and water resource management activities are expected to not likely adversely affect the grizzly bear in all six Bureau RMP administrative areas because the Bureau has agreed to implement the identified conservation measures and due to the limited use of those administrative areas by grizzly bears. Conservation measures are designed to reduce the potential for human-bear encounters and related bear mortality, and provide secure habitat for females to raise their young. Conservation efforts include reduction in bear access to human food and garbage, evaluation of road densities, research on availability of grizzly foods, and other study of bears and their habitat.

Water/Soils Management.

See Watershed/water and Soils program descriptions above.

Wilderness Resources Management

Program Description. Wilderness Study Areas (WSAs) on public lands are single-use resources managed in accordance with decisions issued by the U.S. Congress. The Bureau managers ensure that proposed actions are consistent with the land use plan in effect for the area. Absence of roads, total aerial extent, naturalness, solitude, or a primitive and unconfined type of recreation, and other ecological, geological, educational, scenic, or historical features may be considered wilderness values.

Activities associated with this program may include inventories to identify wilderness areas, public involvement with the wilderness study process, authorization of mining claims under unique circumstances, or evaluations of proposed actions to determine potential impacts to known or potential wilderness values.

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

A plan of operation is prepared by operators before any mining exploration begins. The plan identifies the mining strategy and attempts to minimize environmental impacts. Discovery work

for WSAs under Section 603 must be done to non-impairment standards. Only “unnecessary and undue degradation” requirements apply to Section 202 WSAs.

A mining claim may be staked at any time in an existing WSA. National Environmental Policy Act (NEPA) analysis is required, however, before any activity is authorized in a WSA. Environmental Assessments or Environmental Impact Statements are prepared to determine if a proposal meets non-impairment criteria. The use of categorical exclusion to eliminate this analytical process for uses and facilities on lands under wilderness review is not allowed.

Anticipated Effects to the Grizzly Bear. Wilderness management activities are expected to have no effect or to not likely adversely affect the grizzly bear in all six Bureau RMP administrative areas because the Bureau has agreed to implement the identified conservation measures and due to the limited use of those administrative areas by grizzly bears. Conservation measures are designed to reduce the potential for human-bear encounters and related bear mortality, and provide secure habitat for females to raise their young. Conservation efforts include reduction in bear access to human food and garbage, evaluation of road densities, research on availability of grizzly foods, and other study of bears and their habitat.

Riparian Areas Management

Program Description. The objectives for riparian areas management will be to maintain, improve, or restore riparian value to enhance forage, habitat, and stream quality. Priority for riparian areas management will be given to those areas identified as Colorado River cutthroat trout habitat.

Riparian areas management is an integral part of all resources and related management programs. Management actions may include reductions in livestock numbers, adjustments in grazing distribution patterns, fencing, herding, and livestock conversions. Those activities that affect or are affected by riparian values, will take into account the riparian areas management objectives and direction. Resource values and uses that affect or are affected by riparian values include wildlife and fisheries habitat, forest resources, livestock grazing, OHV use, visual resources, cultural and historical resources, minerals exploration and development activities, lands and realty activities, watershed and soils resources, recreation uses, fire management, and access.

Laws and guidelines abided by during riparian management include Executive Orders 11990 (wetland) and 11988 (floodplain), and section 404 of the Clean Water Act.

Anticipated Effects to the Grizzly Bear. Riparian areas management activities are expected to not likely adversely affect the grizzly bear in all six Bureau RMP administrative areas because the Bureau has agreed to implement the identified conservation measures and due to the limited use of those administrative areas by grizzly bears. Conservation measures are designed to reduce the potential for human-bear encounters and related bear mortality, and provide secure habitat for females to raise their young. Conservation efforts include reduction in bear access to human food and garbage, evaluation of road densities, research on availability of grizzly foods, and other study of bears and their habitat.

Surface Disturbance Restriction

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

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

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

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

The conservation measures prescribed for federal mineral development on split estate lands (federal minerals beneath a nonfederal surface) apply only to the development of the federal minerals. These conservation measures do not dictate the surface owner's management of their lands. The conservation measures present restrictions on only those surface activities conducted

for purposes of developing the federal minerals and that are permitted, licensed, or otherwise approved by the Bureau.

When the Bureau is considering issuing a mineral lease, the agency has a statutory responsibility under the National Environmental Policy Act to assess the potential environmental impacts of the federal undertaking. It also has the statutory authority under the Mineral Leasing Act (MLA) of 1920, the Mineral Leasing Act for Acquired Lands (MLAAL), and the Federal Land Policy and Management Act (FLPMA) of 1976 to take reasonable measures to avoid or minimize adverse environmental impacts that may result from federally authorized mineral lease activities. This authority exists regardless of whether or not the surface is federally owned. The MLA, the MLAAL, and the FLPMA are not the only statutes that establish such authority. Other statutes that may be applicable include the Clean Water Act, the Clean Air Act, the National Historic Preservation Act, the Endangered Species Act of 1973, the Federal Coal Leasing Amendments Act of 1976, and the Surface Mining Control and Reclamation Act of 1977. Moreover, the recently enacted Federal Onshore Oil and Gas Leasing Reform Act of 1987 specifically requires the Bureau to regulate surface disturbance and reclamation on all leases.

Anticipated Effects to the Grizzly Bear. Surface disturbance restriction activities are expected to not likely adversely affect the grizzly bear in all six Bureau RMP administrative areas because the Bureau has agreed to implement the identified conservation measures and due to the limited use of those administrative areas by grizzly bears. Conservation measures are designed to reduce the potential for human-bear encounters and related bear mortality, and provide secure habitat for females to raise their young. Conservation efforts include reduction in bear access to human food and garbage, evaluation of road densities, research on availability of grizzly foods, and other study of bears and their habitat.

PROGRAMMATIC BIOLOGICAL OPINION

FOR THE

WYOMING BUREAU OF LAND MANAGEMENT'S

RESOURCE MANAGEMENT PLANS

WITH BUREAU-COMMITTED

CONSERVATION MEASURES

AND THE EFFECTS TO THE

GRIZZLY BEAR (*Ursus arctos horribilis*)

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

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TABLE OF CONTENTS

PROGRAMMATIC BIOLOGICAL OPINION	1
DESCRIPTION OF THE PROPOSED ACTION.....	1
Livestock Grazing	2
STATUS OF THE SPECIES	2
Species Description	2
Life History	3
Population Dynamics	4
Status and Distribution	5
Conservation	5
Threats.....	8
ENVIRONMENTAL BASELINE	9
Status of the Grizzly Bear Within the Action Area.....	11
Factors Affecting the Grizzly Bear Within the Action Area	12
EFFECTS OF THE ACTION	13
Direct and Indirect Effects.....	13
Analysis for Effects of the Action.....	14
Summary.....	17
CUMULATIVE EFFECTS.....	17
CONCLUSION	18
INCIDENTAL TAKE STATEMENT	19
AMOUNT OR EXTENT OF TAKE	19
EFFECT OF THE TAKE	20
REASONABLE AND PRUDENT MEASURES.....	20
TERMS AND CONDITIONS	20
CONSERVATION RECOMMENDATIONS.....	21
RE-INITIATION NOTICE.....	22
REFERENCES.....	23

PROGRAMMATIC BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The proposed action examined in this consultation is the continuation of management according to the existing Wyoming Resource Management Plans (RMPs) as well as the U.S. Bureau of Land Management's (Bureau) commitment to conservation measures listed in the Biological Assessment (BLM 2004). These are identified in the Appendix and hereby incorporated into this Biological Opinion (BO). The RMPs are used by the Bureau to guide and control future actions and set standards upon which future decisions on site-specific activities are based. The 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. The RMPs also identify desired outcomes, also known as "desired future conditions". These outcomes are expressed in the 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 and Bureau-committed conservation measures that the effects determinations in this BO are based.

Until revised, the Wyoming RMPs have been and will continue to be used by the Bureau, in conjunction with the conservation measures and best management practices listed in the BA, to guide and control future actions and set standards upon which future decisions on site-specific activities will be based. This consultation only addresses the potential effects of the Wyoming RMPs as of the date of this BO. The Bureau will conduct site-specific consultation with the Service prior to authorization of any actions authorized under the Wyoming RMPs which "may affect" the grizzly bear (*Ursus arctos horribilis*). These future consultations will provide a means for site-specific analysis and documentation of impacts to the grizzly bear.

The RMPs incorporate current laws and regulations and public land resource management initiatives to guide long-range land management decisions for public lands and resources in all counties except Park County in Wyoming. The RMPs do not include land management decisions where land surfaces and minerals are both privately owned, or owned by the State of Wyoming, or local governments, or those lands that are managed by other federal agencies.

A description of activities of the Wyoming RMPs that may affect, and are likely to adversely affect, the grizzly bear is contained in the Statewide Programmatic Grizzly Bear BA (BLM 2004) and is described below.

Description of Activities Described under the Statewide Programmatic Grizzly bear BA that may affect and are likely to adversely affect the Grizzly bear

The following discussion describes the Wyoming Livestock Grazing Management Program which may have potential adverse effects to the grizzly bear. A conservation strategy was included in the Bureau's BA (BLM 2004) to address potential adverse effects. The Bureau has committed to implementing the conservation measures listed in that conservation strategy as part of their proposed action (RMP) (see Appendix), therefore, the Service has evaluated the implementation of these conservation measures as part of the proposed action.

Table 2. Grizzly bear "likely to adversely affect" determinations made by the Bureau.

Resource Management Plan				
Program Type	Cody RMP	Lander RMP	Pinedale RMP	Grass Creek RMP (Worland Field Office)
Livestock Grazing	LAA	LAA	LAA	LAA

Livestock Grazing Management. The management objective of livestock grazing management is to maintain or improve forage production and range condition as a sustainable resource base for livestock grazing on the public lands while improving wildlife habitat and watershed condition. Management actions on grazing allotments are prioritized by and classified into one of three management categories: maintain, improve, and custodial. Certain areas may be closed to livestock grazing because of conflicts with other resource uses including, but not limited to, timber sale areas being re-harvested, crucial wildlife or endangered species habitat, developed recreation sites, or education areas. Range management activities include using prescribed fire, vegetation manipulation projects, changing the composition of existing vegetation, using noxious weed control, using mechanical or biological vegetative treatments to improve forage production, using heavy equipment, and the herbicidal spraying of sagebrush.

Fencing activities authorized by the livestock grazing management program may include fence construction and repair, designing and implementing grazing systems, and building livestock exclosures for important riparian habitat. Water management activities associated with range management may include the development of reservoirs, springs, pipelines, and wells, and providing access to these developments. 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 adjusting livestock driveways.

Permanent increases in available forage are considered for wildlife and watershed protection before additional livestock use is authorized. Livestock management includes converting to new types of livestock, authorizing livestock grazing, and adjusting season of use, distribution, kind, class, and number of livestock. Salt or mineral supplements may be provided.

STATUS OF THE SPECIES

Species Description

The grizzly bear (*Ursus arctos horribilis*) is a subspecies of the brown bear (*Ursus arctos*). The grizzly is a large bear with long, curved claws, humped shoulders, and a face that appears to be concave. A wide range of color variation exists ranging from light brown to nearly black. Guard

hairs are often paled at the tips giving the pelage a grizzly appearance; hence the name "grizzly". Spring shedding, new growth, nutrition, and climate influence the bear's coloration (USFWS 1993).

In the lower 48 states, the average weight of grizzly bears is 400-600 pounds for males and females average 250-350 pounds. An occasional male may exceed 800 to 1,000 pounds. Adults stand 3.5 feet at the hump when on all fours. They may rear up on their hind legs reaching heights of over 8 feet (USFWS 1993).

The muscle structure of the grizzly bear is developed for massive strength and quickness. This bear can run at speeds of up to 45 miles per hour. Movement is achieved by a normal ambling position on all fours and an upright position on the hind legs that improves the opportunity to see and smell (USFWS 1993).

Life History

Home range and dispersal. Grizzly bears require large areas to fulfill all their basic biological needs, including food and shelter. Their home ranges average 130 to 1,300 square kilometers (50 to 500 square miles). Within these home ranges the grizzly bear uses a diverse mixture of forests, moist meadows, grasslands, and riparian habitats to complete its life cycle. Grizzly bears generally prefer large, remote areas of habitat for feeding, denning, and reproduction that are isolated from human development (USFWS 1993). Long distance travel habits of some grizzly bears increase the risk of contact with highway crossings, hunters, recreationists, and a variety of other human congregations.

Grizzly bears require dense forest cover for hiding and security. In the Yellowstone ecosystem, lodgepole pine (*Pinus contorta*) forests are a large and dynamic part of grizzly bear habitat. Removal of the total overstory of these habitats through logging may be an ineffective technique for managing these habitats for increased berry production for use by grizzly bears (Mattson 1997b).

Diet. The grizzly bear is an opportunistic omnivore that uses a wide variety of plant and animal food sources. Grizzly bears in the Yellowstone Grizzly Bear Ecosystem (YGBE)(an area consisting of Yellowstone National Park and suitable surrounding areas) have the highest percentage of meat consumption in their diet of any inland grizzly bear population (Hilderbrand *et al.* 1999). About 30 to 70 percent of the diet of the grizzly bears in the YGBE is from some form of animal matter. Meat in the grizzly bear's diet varies by season and available forage. Ungulates are an especially important food source for bears in the spring and fall (Knight *et al.* 1984), and use of these carcasses in Yellowstone National Park (YNP) is well documented (Podruzny and Gunther 2001). Grizzly bears also eat small mammals such as pika and marmots, however, these mammals form a relatively minor portion of the bear's diet. Spawning cutthroat trout in streams surrounding Yellowstone Lake in YNP have been documented as an important food source for grizzly bears there (Mattson and Reinhart 1995). Army cutworm moths are also an important food source for bears in the YGBE (Mattson *et al.* 1991). Army cutworm moths congregate in remote, high altitude alpine talus areas and feed on alpine flowers. These moths provide important dietary fat in the fall, when grizzly bears are preparing for hibernation, and are

also positively correlated with bear reproductive success (Bjornlie and Haroldson 2001). During times of great moth abundance, grizzly bears may eat up to 40,000 moths per day totaling 20,000 kcal/day (USGS 2005). The uneaten moths then migrate back to lower elevations to deposit their eggs, leaving the alpine areas between August and October. Army cutworm moth congregation sites are in remote areas, and therefore potentially reduce human-bear conflicts by isolating the bears. Grizzly bears will also eat ants (Mattson 2001) and earthworms (Mattson *et al.* 2002).

The grizzly bear also makes use of a variety of vegetative food sources. Whitebark pine seeds are an important fall source of food for grizzly bears in the YGBE (Mattson and Reinhard 1997). Bears consume whitebark pine seeds contained in red squirrel cone caches (Mattson and Reinhard 1997). Studies show that in years when the whitebark pine seed crop is low, there is an increase in human-bear conflicts (Haroldson *et al.* 2003). This is likely due to bears seeking alternative food sources, such as exotic clover species (Reinhard *et al.* 2001) and yampa (*Perideridiea gairdneri*), that occur at lower elevations and closer to humans. In addition to supplying a food source high in fat, whitebark pine seed crops also serve grizzly bears by keeping them occupied at high elevations far from intense human use. Other grizzly bear seasonal foliage use includes roots (Mattson 1997a), graminoids, horsetail, forbs, and fruits (whortleberry and huckleberry) (Knight *et al.* 1984, Mattson and Knight 1991). Bears also eat limited amounts of mushrooms.

Den site selection. Grizzly bears generally construct dens in areas far from human disturbance at an elevation of about 2,000 to 3,050 meters (6,500 to 10,000 feet). Grizzly bears den from the end of September to the last week in April or early May, with entrance and emergence dates being affected by the gender and reproductive status of the bears. Denning bears can be disturbed by winter sport activities such as snowmobiling, and current studies are focused on minimizing disturbance by controlling access to important denning areas (Haroldson *et al.* 2002, Podruzny *et al.* 2002). If pregnant female bears are disturbed in their dens and this disturbance causes them to relocate to a new den prior to parturition, negative consequences can occur in the form of reduced cub fitness and survival (Linnell *et al.* 2000, Swenson *et al.* 1997).

Population Dynamics

Grizzly bear numbers have greatly declined during the past two centuries. It is believed that the grizzly bear population numbered over 50,000 individuals prior to the 18th Century (USFWS 1993). More recently, the estimated total population of grizzly bears as of 1993, stood at 800 to 1,000 individuals (USFWS 1993). The exact size of the grizzly bear population in the area consisting of Yellowstone National Park and suitable surrounding areas (Yellowstone Grizzly Bear Ecosystem YGBE) is currently unknown, as the very nature of the grizzly bear and the rugged terrain it inhabits makes any census efforts extremely difficult. As an alternative monitoring index to population abundance, other more monitorable population parameters have been used to estimate population size (Knight and Eberhardt 1987). In 1996, Eberhardt and Knight (1996) used several different estimates of population parameters to determine a minimum total population size of 245 grizzly bears, an estimated population size of 390 grizzly bears using marked females, and an estimated population size of 344 grizzly bears using distinct family groups. In 2003, the Interagency Conservation Strategy team identified the minimum population estimate for the grizzly bear population in the YGBE as of 2001 as 365 grizzly bears with a total

population estimate of 531. Haroldson and Frey (2004) determined a minimum population estimate of 416 in both 2002 and 2003. The Interagency Grizzly Bear Study Team more recently estimated the population at 580 bears (USFWS 2005).

Status and Distribution

The grizzly bear was listed as a threatened species on July 28, 1975 (USFWS 1975). Historically, the grizzly bear ranged from the Great Plains to the Pacific Coast, and from the northern U.S. border with Canada to the southern border with Mexico. Currently in the contiguous United States, the grizzly population has been reduced to roughly two percent of its former range. It presently only occupies portions of Canadian British Columbia and Alberta, and portions of Montana, Idaho, Wyoming, Washington, and Alaska in the United States. The grizzly bear was recently proposed for removal from the list of endangered and threatened species (USFWS 2005).

Conservation

In an effort to facilitate consistency in the management of grizzly bear habitat within and across ecosystems, the Interagency Grizzly Bear Guidelines were developed by the Interagency Grizzly Bear Committee (IGBC)(51 FR 42863, November 26, 1986) for use by land managers. The IGBC developed specific land management guidelines for use in each of the five ecosystems including the YGBE. The YGBE includes 23,300 sq km (9,500 sq mi) primarily within Yellowstone and Grand Teton National Parks, John D. Rockefeller Memorial Parkway, significant portions of the Bridger-Teton, Shoshone, Targhee, Gallatin, Beaverhead, and Custer National Forests, adjacent private and State lands, and lands managed by the U.S. Bureau of Land Management.

Recovery zones also have been established for the grizzly bear and include areas large enough and of sufficient habitat quality to support a recovered bear population. According to the Grizzly Bear Recovery Plan (USFWS 1993), a recovery zone is defined as that area in each grizzly bear ecosystem within which the population and habitat criteria for achievement of recovery will be measured. Areas outside of recovery zones may provide habitat that grizzly bears will use, but are not considered necessary for the survival and recovery of this species. The area outside the recovery zone but within the 10-mile buffer area, is managed to consider and protect grizzlies and their habitat whenever possible, recognizing that population and mortality data within this zone are collected and pertinent to recovery criteria. Beyond the 10-mile buffer, grizzly bear mortalities or populations are not considered when determining whether recovery goals have been met, however protection is still accorded to the grizzly bear under the Act.

The Yellowstone Grizzly Bear Recovery Zone (Recovery Zone) covers approximately 5,438,000 acres of primarily National Park Service and Forest Service lands, roughly 89 percent of the currently known distribution of the grizzly bears in the YGBE. Yellowstone National Park contains nearly 40 percent of the Recovery Zone for the YGBE grizzly bear population. Grizzly bears also occur in and use areas outside the Recovery Zone.

Recovery zones are divided into smaller areas called Bear Management Units (BMUs) for the purpose of habitat evaluation and monitoring. All Bureau-administered grazing allotments are located outside of BMUs. BMUs were designed to:

- (1) assess the effects of existing and proposed activities on grizzly bear habitat without having the effects diluted by consideration of too large an area;
- (2) address unique habitat characteristics and bear activity and use patterns;
- (3) identify contiguous complexes of habitat which meet year-long needs of the grizzly bear; and,
- (4) establish priorities for areas where land use management needs would require cumulative effects assessments.

Areas within the recovery zone are stratified into Management Situation Zones 1, 2 or 3; each having a specific management direction.

"Management Situation 1" (MS1) lands contain population centers of grizzlies, are key to the survival of the species and are where management decisions will favor the needs of the bear even when other land use values compete.

"Management Situation 2" (MS2) lands are those areas that lack distinct population centers and the need for this habitat for survival of the grizzly bear is more uncertain. The status of such areas is subject to review. Here, management will at least maintain those habitat conditions that resulted in the area being classified as MS2.

"Management Situation 3" (MS3) designation is intended for lands where grizzly bears may occur infrequently. There is high probability that Federal activities here may affect the species survival and recovery. Management focus is on human-bear conflict minimization rather than habitat maintenance and protection.

"Management Situation 4" (MS4) lands are areas where grizzlies do not occur in the area but habitat and human conditions make the area potentially suitable for grizzly occupancy, and the area is needed for the survival and recovery of the species. Grizzly--human conflict minimization is not a management consideration on these lands.

"Management Situation 5" (MS5) lands are areas where grizzlies do not occur, or occur only rarely in the area. Habitat may be unsuitable, unavailable, or suitable and available but unoccupied. The area lacks survival and recovery values for the species or said values are unknown. In this area, maintenance of grizzly habitat is an option. Grizzlies involved in grizzly--human conflict are controlled.

The current Grizzly Bear Recovery Plan (USFWS 1993) outlines recovery strategies for the various grizzly bear ecosystems. That plan defines a recovered population as one that can sustain the existing level of known and unknown human-caused mortality that exists in the

ecosystem and is well-distributed throughout the recovery zone. Demographic recovery criteria outlined for the Yellowstone recovery zone include:

- (1) observation of 15 females with cubs of the year annually (unduplicated sightings) over a 6-year running average;
- (2) occupation of 16 of the 18 BMUs by females with young from a running 6-year sum of verified observations, and no 2 adjacent BMUs unoccupied with a study to be initiated in the Plateau and Henry's Lake BMUs to determine the capability of these units to support females with cubs;
- (3) known, human-caused mortality not to exceed 4 percent of the current population estimate (based on most recent 3-year sum of females with young); with no more than 30 percent of this total mortality limit of 4 percent by females; and,
- (4) these mortality limits cannot be exceeded during any 2 consecutive years.

In addition, the existence of adequate regulatory mechanisms for population and habitat management through the development of a conservation strategy must be demonstrated.

According to the Grizzly Bear Recovery Plan, in order to facilitate recovery of the population, a conservative approach is taken toward allowable mortality, accounting for error in both minimum population estimates and unknown, unreported mortality. Based on a conservative approach allowing for an estimated level of unknown, unreported bear mortality and to help achieve population recovery, the maximum allowable known, human-caused mortality for the Yellowstone population is set at 4 percent of the most recent 3-year sum of the population estimate, of which no more than 30 percent may be female (USFWS 1993). Applying this 4 percent figure to the 2003 minimum population estimate yields 412×0.04 or 16 bears (or 5 female bears) that could theoretically be taken each year without population decline. The recent (1998-2003) 6-year average annual, known, human-caused mortality in the Yellowstone Ecosystem is 11.2 bears per year, with an annual, known, human-caused female mortality of 4.8 bears per year (Haroldson and Frey 2004). Thus, human-caused grizzly bear average mortality appears to be below the thresholds established in the recovery plan for that period. During the years 2001-2003, female grizzly bear mortality rose to an average of 7 per year (Haroldson and Frey 2004), and in 2004, the female mortality count in the Yellowstone Ecosystem rose to 5. In the past 12 years, the mortality threshold has been exceeded 3 times, but the population has been continuing to grow at about 4 percent per year during that same period. Long-term survival of the Yellowstone grizzly bear population, over the next 100-200 years, is contingent upon minimizing average annual mortality within the total population and especially that of adult females (Knight and Eberhardt 1984, 1985). Preventing adult female mortality is the key factor in maintaining the grizzly bear population (Knight and Eberhardt 1984).

In 1994, all population recovery parameters were achieved for the first time. All population recovery parameters were achieved again from 1998 through 2001. Based on population monitoring, data show an average of over 27 females with cubs for the period of 1993 through 2000. At the end of 2002, the number of unduplicated females with cubs had risen to 38, double

the target identified in the Recovery Plan (USFWS 1993). Females with cubs occupied 16 of 18 BMUs during 1988-1991, 17 of 18 BMUs were occupied during 1994 through 1996, and 18 of 18 BMUs were occupied from 1998 through 2002. Sixteen of 18 BMUs had verified observations of female grizzly bears with young during 2003 (Podruzny 2004). Madison and Henry's Lake did not have verified occupation. Eighteen of 18 BMUs contained verified observations of females with young in at least 4 of the last 6 year period (Podruzny 2004). The study on the Plateau and Henry's Lake BMUs has been completed.

Finally, development of a conservation strategy to demonstrate the existence of adequate regulatory mechanisms for populations was completed in March of 2003, and incorporation of these habitat standards into Forest Plans and habitat management is currently underway (Yellowstone Interagency Conservation Team 2003).

Threats

Isolation from human activities is extremely important for bear survival, as grizzly bears habituate to human foods quickly and become pests. Pest bears often must be eliminated or removed from developed areas. Avoiding human-caused bear mortality is a goal of the Recovery Plan and is essential to maintaining a viable grizzly bear population (USFWS 1993).

Primary threats to grizzly bears are associated with motorized and dispersed recreational use and forest management activities, including timber harvest. Recreation use includes hunting, fishing, camping, horseback riding, hiking, biking, off-road vehicle (ORV) use, and snowmobiling. Direct human-caused mortality is the most obvious threat to the grizzly bear. This kind of mortality can occur in several ways: (1) mistaken identification by big game hunters, (2) malicious killing, (3) defense of human life or property, or (4) management removals. Bears are removed to defend human life or property, usually because bears have become dangerously bold as a result of food conditioning and habituation at campsites, lodges, resorts, and private residences or they become habituated predators of livestock (Knight and Judd 1983).

Human-grizzly bear interactions have been increasing in the ecosystem due, in part, to increasing human use and development, increasing bear numbers, and bears and people both expanding their range of occupancy, increasing the chances of adverse encounters. The frequency of grizzly bear-human conflicts is inversely associated with the abundance of natural bear foods (Gunther *et al.* 2004a). That is, most grizzly bear mortalities are directly related to grizzly bear-human conflicts. The Interagency Conservation Strategy Team (2000, pp. 1-2) reported known human caused mortalities from 1992-98. Of 58 human-caused mortalities, 43 percent were hunting-related, 10 percent were poaching, 28 percent were food conditioned bears, 7 percent were related to livestock and 12 percent were accidental deaths. The greatest increase in recent years is self-defense in fall by big game hunters. According to a study by Gunther *et al.* (2004b), three areas were identified as having 71 percent of the 136 conflicts in the GYE in 2003. These were (1) the headwaters region of the Green, Snake, and Wind Rivers, (2) the Crandall Creek/Sunlight Basin area, and (3) the north and south forks of the Shoshone River (Gunther *et al.* 2004b).

There are a number of naturally or semi-naturally occurring factors that also may influence Yellowstone grizzly bear population levels. Whitebark pine provides an important food source for grizzly bears. Blister rust, which has severe consequences on whitebark pine in the Northern Continental Divide has been observed in the Yellowstone area. The Yellowstone cutthroat trout, which is an important food source for grizzly bears in the area, has been negatively influenced by introduced lake trout, which are less available to bears due to their deeper water habits (Reinhart *et al.* 2001). Winter killed ungulates are an important food supply, but ungulate populations vary widely in numbers and are influenced by weather conditions. The reintroduction of wolves has increased competition for ungulate prey and winter-killed carrion. Army cutworm moths, which also provide important food for bears in some areas could be affected by pesticide use in agricultural areas. Recent fires may have impacts on available food and cover over the short term, particularly to individual bears with heavily burned home ranges. Fire, in general, over time stimulates many forage species and berries preferred by bears, provided alternate food supplies and cover is available to maintain bears through the immediate aftermath of the fire.

Grizzly bears have also experienced displacement from available habitat (loss of habitat effectiveness due to human disturbance) due to increased human uses from (1) increased amount of roading (Kasworm and Manley 1989), (2) ORV use and (3) recreation use. They have also experienced loss of existing available habitat due to (1) increased development on private land related primarily to residential housing, and (2) potential for increased development on public land related primarily to oil/gas and recreation development. The grizzly bear also faces a decrease in value of available habitat due to (1) a loss of biodiversity (especially early succession related vegetative types), and (2) sub-optimal composition, structure, and juxtaposition of vegetation as a result of fire suppression, management strategies, and advancing succession. Finally the bear faces isolation due to fragmentation of available habitat due to (1) major development of private land, (2) construction of major highways the produce blockage or restrict movement, (3) inadequate provision for linkage on minor roads and highways, and (4) large blocks of clearcuts.

ENVIRONMENTAL BASELINE

The environmental baseline is defined as the past and present impacts on the grizzly bear of all Federal, state or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early Section 7 consultation, and the impacts of State or private actions that are contemporaneous with the consultation in 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 the Bureau of Land Management grazing allotments in the Cody, Lander, Pinedale, and Grass Creek RMP administrative areas and the areas outside of these grazing allotments where grizzly bear home ranges may overlap between the Bureau's grazing allotments and surrounding areas. No formal consultations for adverse effects to the grizzly bear are known from the Bureau's grazing allotments. However,

some informal consultations have been completed for activities in the Bureau's grazing allotments. In addition, formal consultations have occurred for federal grazing activities adjacent to some of the Bureau's grazing allotments.

Authorized grazing by livestock over the grizzly bear's range has declined over the past half century. Sheep numbers have declined substantially since the 1930s due primarily to marginal financial status of the industry; many sheep allotments have been converted to cattle allotments. Cattle numbers have also declined over the past few decades.

Activities considered in the environmental baseline include livestock grazing allotment authorization for the Shoshone and Bridger-Teton National Forests in northwestern Wyoming and several highway reconstruction projects. Specifically, these project activities are the Federal Highway Administration's Beartooth Highway Reconstruction Project (WY7403, December 1, 2003), 287/26 Highway Reconstruction project aka Towgotee Pass Highway (WY5998, August 22, 2003); the Cody to Yellowstone Reconstruction Project aka North Fork Highway Project (August 8, 1995); the Forest Services' issuance of commercial grazing permits on the Teton Division of the Bridger-Teton National Forest (WY4715, December 3, 2002); the National Park Service's reconstruction project for East Entrance Road (WY6994, August 7, 2003); and the permitting of commercial livestock grazing on the North and South Zones of the Shoshone National Forest (WY7155 September 30, 2004).

Adjacent to Bureau-administered lands of the Cody, Lander, Pinedale, and Grass Creek RMP administrative areas is the Greater Yellowstone Area (GYA). The area contains the recovery zone of the Greater Yellowstone grizzly bear population. Home ranges of grizzly bears of the recovery area may overlap with Bureau-administered grazing allotments. Within the GYA, one of the most challenging and controversial aspects of grizzly bear conservation has been management of the grizzly bear-livestock interface. In the GYA, there are approximately 392 active grazing allotments encompassing 16,642 kilometer squared of public land (Mack *et al.* 1992). Approximately 105,000 sheep, 77,350 cattle, and 1,200 horses seasonally occupy these allotments (Mack *et al.* 1992). Grizzly bear conflicts with livestock throughout the ecosystem have generally been managed according to the Interagency Grizzly Bear Guidelines, which include a protocol for nuisance bear management. From 1992-2000, a total of 422 grizzly bear conflicts involving cattle were recorded in the ecosystem. In 2003 alone, 64 incidents as a result of livestock depredations occurred in the Greater Yellowstone Ecosystem (Gunter *et al.* 2004b).

The Shoshone National Forest occurs immediately adjacent to Bureau-administered allotments and occurs within overlapping grizzly bear home ranges. On the Shoshone National Forest from 1986 to 2002, a total of 72 livestock conflicts involving permitted livestock on 14 allotments were recorded. By far, the vast majority of these conflicts involved calves. In 2003, 37 total conflicts occurred, with 21 of those related to livestock depredations (Gunter *et al.* 2004b). These conflicts were concentrated on the Lake Creek, Dunoir, Ramshorn/Parque/Horse Creek and Rock Creek/Hardpan allotments (USFS 2003). Over this period, four grizzly bears were relocated/released and at five additional sites, trapping was attempted. Eight of the conflicts that occurred involved permitted sheep, but as of January 2003, sheep grazing in currently occupied grizzly bear habitat is no longer permitted there (USFS 2003). To reduce the potential for grizzly bear mortalities as a result of forest management actions, domestic sheep allotments

within the grizzly bear recovery area have been phased out and will remain vacant indefinitely to reduce conflicts with grizzly bears (USFS 2003). Additionally, food regulations and storage orders, imposed since 1990, promote human safety and reduce the potential for bear-human conflicts by removing grizzly bear access to human food (USFWS 2004).

Status of the Grizzly Bear within the Action Area

Grizzly bears are expanding their ranges and currently include, or may soon include, portions of some Bureau-administered grazing allotments in the Cody, Lander, Pinedale, and Grass Creek RMP administrative areas. With the species expanding its range, conflicts on the Bureau-administered grazing allotments can reasonably be expected to occur in the future.

All Bureau-administered grazing allotments are located outside of and make up no portion of the Grizzly Bear Recovery Zone of the Greater Yellowstone Ecosystem. The Grizzly Bear Recovery Zone for the Greater Yellowstone Ecosystem is composed of approximately 5,888,000 acres. In contrast, the Bureau-administered livestock grazing allotments contain an estimated total of 175,363 acres of occupied or potential grizzly bear habitat--an area approximately 3 percent as large as the Greater Yellowstone Grizzly Bear Recovery Zone.

Cody Field Office. The Cody RMP administrative area has the largest acreage of grizzly bear use and coincidentally the largest numbers of bear/human conflicts (BLM 2005). It has been estimated that there are 126,521 acres of potential grizzly bear use on Bureau-authorized land within this RMP administrative area. The following areas in the Cody RMP administrative area are used by grizzly bears: (1) Clark's Fork Canyon area, including Bald Ridge, (2) Rattlesnake Mountain, (3) Sheep Mountain, (4) Hardpan and Houlihan Creek drainages (southwest of Sheep Mountain), (5) east end of Carter Mountain, (6) Meeteetse, Rose, and Rawhide creeks, and (7) the upper Greybull River. Additionally, there are unconfirmed reports of grizzly bears inhabiting Heart Mountain (BLM 2005).

Lander Field Office. There are 29,000 acres of mapped potential grizzly bear use in the Lander RMP administrative area (BLM 2005, Schwartz *et al.* 2002). Grizzly bears are known from the following areas in the Lander RMP administrative area: (1) Pole/Bear Creek, (2) drainages of the East Fork of the Wind River, including lands on the East Fork Big Game Winter Range, (3) Horse Creek and Tappan Creek drainages north of Dubois, and (4) Dunoir Creek and Warm Springs Creek drainages. Additionally, there is the potential for grizzlies to use Bureau-administered land in the Jakeys Fork of the Wind River, as there is known use in areas to the north and west of this area. Grizzly bears are also known to use Forest Service lands on the north end of the Lander Slope of the Wind River Range. Parts of the Lander Slope on the Wind River Range contain grizzly bear habitat and will likely be occupied in the future as bears expand their current range. Specific areas include the Lander Slope, Red Canyon, and South Pass areas (BLM 2005).

Pinedale Field Office. There are 3,000 acres of mapped potential grizzly bear use in the Pinedale RMP administrative area (BLM 2005, Schwartz *et al.* 2002). Grizzly bears have been known to use areas near New Fork Lake east of Bureau-administered lands in the McDowell Flat area.

There is occasional known grizzly bear use on private, National Park Service (NPS), and U.S. Forest Service (USFS) land between Moose and South Park bridge (BLM 2005).

Worland Field Office. The distribution of potential grizzly bear use extends into the Grass Creek RMP administrative area for 16,842 acres (BLM 2005, Schwartz *et al.* 2002). There is periodic use, primarily in the spring and fall, along the Absaroka Front foothills east of the Shoshone National Forest. This area includes the upper reaches of Owl, Cottonwood, Grass, and Gooseberry drainages. The Bureau has approximately 20-50 percent of the ownership in this region (BLM 2005).

Factors Affecting the Grizzly Bear within the Action Area

Factors that could affect the grizzly bear in the action area include livestock management practices; timber harvest activities; recreational activities (hunting, fishing, camping, horseback riding, hiking, biking, off-road vehicle (ORV) use, and snowmobiling); management control actions; residential development; oil, gas, mineral development; educational programs; food storage orders and garbage disposal practices; wildlife and fisheries management practices; realty actions; insect control programs; fire management practices; drought; disease; or insect outbreaks. Factors specifically potentially affecting the grizzly bear from the Proposed Action include increased mortality, change in the quality of habitat, displacement from habitat, and change in the frequency of human/grizzly bear encounters and conflicts.

The potential effects to grizzly bears from these factors are (1) harassment, harm, or death, (2) change in the quality of habitat and availability of food, (3) displacement from habitat, and (4) change in the frequency of human/grizzly bear encounters.

Increased mortality. Big game hunters may mistakenly mis-identify grizzly bears as black bears and kill them. Others may maliciously kill grizzly bears. Some grizzly bears may be killed in defense of human life or property usually because bears have become dangerously bold as a result of food conditioning and habituation at campsites, lodges, resorts, and private residences or they become habituated predators of livestock. Some grizzly bears may be killed as a result of management removals. Bears are removed to defend human life or property,

Change in the quality of habitat. Food and cover are important aspects of grizzly bear habitat. The abundance of important food items can change over time depending on a number of factors. Whitebark pine provides an important food source for grizzly bears. Blister rust, which has severe consequences on Whitebark pine in the Northern Continental Divide has been observed in the Yellowstone area. Winter killed ungulates are an important food supply, but ungulate populations vary widely in numbers and are influenced by weather conditions. Army cutworm moths, which also provide important food for bears in some areas could be affected by pesticide use in agricultural areas. Recent fires may have impacts on available food and cover over the short term, particularly to individual bears with heavily burned home ranges. Widespread use of insecticides could potentially reduce this important grizzly bear food source. Fire stimulates many plant forage species and berries preferred by bears, provided alternate food supplies.

The grizzly bear also faces a decrease in value of available habitat due to (1) a loss of biodiversity (especially early succession related vegetative types), and (2) sub-optimal vegetation quality as a result of fire suppression, management strategies, and advancing succession. Grizzly bears also face isolation due to fragmentation of available habitat due to (1) major development of private land, (2) construction of major highways that block or restrict movement, (3) inadequate provision for linkage on minor roads and highways, and (4) large clearcuts.

Displacement from habitat. Grizzly bears have experienced displacement from available habitat due to increased human uses from (1) roading, (2) ORV use, and (3) recreation use. They have also experienced displacement due to (1) development on private land related primarily to residential housing and (2) development on public land related primarily to oil/gas and recreation development. Realty actions such as conversion of grazing lands to residential or mineral development can result in displacement of the bears from previously suitable habitat.

Change in the frequency of human/grizzly bear encounters and conflicts. With increased education and improved management of grizzly bear habitat, there is expected to be a decrease in the frequency of human/grizzly bear encounters and conflicts. Food storage requirements and proper disposal of garbage, pet food, and livestock carcasses and removal of domestic sheep from grazing allotments is expected to reduce the number of instances of conflict situations as has been witnessed in the grizzly bear recovery zone (Schwartz *et al.* 2002).

EFFECTS OF THE ACTION

The Bureau's Statewide Programmatic BA for the grizzly bear describes activities in the livestock management program that may affect and are likely to adversely affect the grizzly bear. The potential effects of these activities on the grizzly bear 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.

The proposed action is the management of the RMP areas in Wyoming for up to 15 years. Since (1) there is such a lengthy time period for the life of the proposed action and direct effects could occur under the proposed action for up to 15 years, and (2) 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

Livestock Management. Bureau-authorized grazing allotments do not overlap with Grizzly Bear Recover Areas but instead overlap only with grizzly bear transition habitat. However, livestock grazing on Bureau-authorized grazing allotments, and the associated human presence and livestock carrion associated with livestock management, could still have detrimental effects to the grizzly bear (Knight and Judd 1983). As grizzly bear habitat overlaps with Bureau-authorized grazing allotments, grizzly bears could begin to prey on the permittee's livestock. Unacceptably high levels of livestock depredation by grizzly bears may lead to control of grizzly bears, depending upon the specific circumstances. The Plan for Determining Grizzly Bear Nuisance Status and for Controlling Nuisance Grizzly Bears (pages 51-70 in the Interagency Grizzly Bear Guidelines) (ICBC 1986) outlines management direction agreed upon by participating agencies with respect to determination of grizzly bear nuisance status, and the capture, translocation, release and/or disposal of nuisance grizzly bears. These guidelines indicate a grizzly bear in Management Situation Areas 1 or 2 may be determined to be a nuisance if "the bear causes significant depredation to lawfully present livestock or uses unnatural food materials (human and livestock foods, garbage, home gardens, livestock carrion, and game meat in possession of man) which have been reasonably secured from the bear resulting in conditioning of the bear or significant loss of property." Additionally, these guidelines include examples of reasonably secure conditions, such as "livestock use did not occur in habitat components critically important to grizzlies in time or space" and "livestock and wildlife carcasses were removed, destroyed, or treated so that the material would not reasonably be expected to attract grizzlies." Therefore, depredating grizzly bears on the Bureau-administered allotments may be determined a nuisance if the cattle are not grazing in an area considered critically important to the bear and if livestock carcasses have been made unavailable to the bear. Once determined a nuisance, control may consist of either relocating or removing the bear from the population, depending upon the age and sex of the bear, as well as the number of previous offenses the bear may have. For example, a depredating young female grizzly bear will be removed from the population only in response to her third offense. A depredating old adult male grizzly bear may be removed from the population on his first offense.

Although the Bureau is not responsible for trapping and relocating depredating grizzly bears, Bureau actions such as the authorization of livestock grazing permits could lead to the development of problem behavior patterns in grizzly bears. Thus, Bureau actions could lead to trapping and relocating of grizzlies. Trapping and relocation of a bear has the potential to result in accidental injury or death of a bear through physical injury during trapping or accidental overdose of immobilizing drugs. Additionally, depending on the age, sex, and condition of the bear, its lack of knowledge of the habitat and its food resources may result in starvation or conflict with resident bears.

In most cases, relocation provides only a short-term solution to an immediate crisis with a high return rate due to the homing ability of bears. However, often relocation provides time to resolve the problem creating the conflict. Knight *et al.* (1988) state that while translocation of bears from population sinks may remove them temporarily from situations of high risk of death, the best management strategy remains elimination of those food sources that attract bears to sinks, thus supporting efforts to minimize food availability through carcass removal. Blanchard and

Knight (1995) believe that transporting grizzly bears should be considered a final action to eliminate a conflict situation, because of low survival and high return rates. However, Blanchard and Knight (1995) also found subadult females returned the least of all groups and indicated transporting females must be considered a viable management technique because transports of some individuals have resulted in contributions to the population through successful reproduction.

Habituation to humans and human activities can also lead to conflicts with grizzly bears which may ultimately lead to their translocation, harm, or death (McClellan 1989). Human presence and activities in grizzly bear occupied habitats may lead to bear-human encounters, often with negative consequences for the bear. In their study of the effects of access on human-caused mortality of Yellowstone grizzly bears, Mattson and Knight (1991) revealed that mortality rates associated with all levels of access (roads, developments, back-country) have decreased over time. They point out that most of this observed improvement is due to better management/removal of attractants such as garbage and other edibles that have been a major cause of bear deaths in the past; and that these may have been the easiest reductions to achieve.

Habituation, the loss of a bear's natural wariness of humans, results from continued exposure to human presence, activity, noise, etc., without negative consequences. A bear habituates to other bears, humans, or situations when such interaction gives it a return in resources, such as food, that outweighs the cost of the stress that precedes habituation. Similarly, bears may habituate to people when such interactions result in access to a source of natural food in the vicinity of human use areas (McArthur-Jope 1980). Increases in human access and subsequent increased human use in grizzly bear habitat can lead to bear habituation to humans, which in turn increases the potential for bear-human conflicts. Habituated bears often end up obtaining human food or garbage and learn to associate people with food. As a result, they can be removed from the population. Such habituated or food-conditioned bears are also more vulnerable to illegal killing because of their tolerance to people.

These conflicts could result in the relocation, harm, or death of any given grizzly bear. Relocation of grizzly bears to new habitats may cause a reduction in the relocated bear's fitness if that bear is placed in direct competition with other more dominant bears at that new location or if the relocated bear can not otherwise find enough resources at the new location to sustain its existence.

Bureau-authorized grazing allotments do not overlap with Grizzly Bear Recover Areas but instead overlap only with grizzly bear transition habitat. Therefore, livestock grazing activities on Bureau-authorized grazing allotments are not expected to affect the core population of grizzly bears in the Greater Yellowstone Ecosystem. It is expected that some young grizzly bears which have been driven out of their natal habitats by older grizzlies may move on to the Bureau's grazing allotments to seek new territories simultaneously expanding the range of the species. It is these grizzly bears, seeking new territories or forced to occupy sub-optimal habitat through competition with more dominant bears, which could be adversely affected by the Bureau's authorization of livestock grazing.

The Greater Yellowstone grizzly population has expanded since the bear was first listed in 1975 (USFWS 1975) and recovery goals were first achieved in 1994. The grizzly bear in the Greater Yellowstone Ecosystem was recently proposed for removal from the list of endangered and threatened species (USFWS 2005). It is not expected that the removal or relocation of grizzly bears in the transition habitat of the Bureau-authorized grazing allotments will have a significant impact on the grizzly bear population as a whole in the Greater Yellowstone Ecosystem.

In order to minimize the chances that grizzly bear/livestock/human conflicts will result from grizzly bears expanding their range onto Bureau-authorized lands, the Bureau has committed to implementing a number of conservation measures. Conservation measures are designed to reduce the potential for human-bear encounters and related bear mortality, and provide secure habitat for females to raise their young. Conservation efforts include reduction in bear access to human food and garbage, evaluation of road densities, research on availability of grizzly foods, and other study of bears and their habitat. In order to minimize the effects of its actions on the grizzly bear, the Bureau has committed to ensuring that; (1) authorized activities planned to occur in currently occupied grizzly bear habitat shall be analyzed and planned with active grizzly bear protection measures, (2) restrictions on timing of activity and spatial considerations for grizzly bears, or other parameters, will be implemented to avoid or prevent significant disruptions of normal or expected bear behavior and activity in the area, (3) a packet of educational materials will be provided to authorized permittees in grizzly habitat, including, but not limited to, special recreation permittees, livestock permittees, and timber operators, (4) bear-resistant refuse containers will be installed in occupied grizzly bear habitat in those developed campgrounds and picnic areas where refuse containers are provided and maintained, (5) the public will be informed of proper storage techniques for food and refuse in areas receiving dispersed recreational use, (6) operation plans and special use permits in occupied grizzly bear habitat will specify food storage and handling and garbage disposal standards, (7) all temporary living facilities under temporary use permits in occupied grizzly bear habitat will be required to practice proper food storage and keep all potential attractants stored so they are unavailable to bears, (8) edibles and/or garbage will be secured from access by grizzly bears, (9) bear proof refuse containers, and timely refuse collection to prevent overflow, will be required, (10) important grizzly bear food resources that may occur on Bureau-administered land, particularly whitebark pine, army cutworm moths, ungulates (primarily elk calving grounds), and spawning cutthroat trout, shall be noted and monitored and other important foods may be added to those listed above as our understanding of grizzly bear food resources on Bureau-administered land grows, (11) commercial cutting or other removal of whitebark pine in the six Bureau RMP administrative areas with grizzly bear habitat will be analyzed when it occurs in occupied or potential grizzly bear habitat, (12) implementation of strategies to reduce human-bear and domestic livestock-bear conflicts by conducting an evaluation of the causes of such conflicts when they do occur and determining what can be done to avoid or reduce such conflicts in the future, (13) existing roads, drilling pads, and other areas with vegetation removed due to authorized activities in occupied grizzly bear habitat will be revegetated and reclaimed by lessee/permittee/grantee in a fashion that considers all grizzly bear needs or requirements.

Summary

It is anticipated that grazing actions potentially authorized under the Cody, Lander, Pinedale, and Grass Creek RMPs, if undertaken, could result in negative impacts to grizzly bears due to harm, death from control actions, or a reduction in fitness (individual fitness and reproductive fitness) of individual grizzly bears. Livestock grazing management according to the Cody, Lander, Pinedale, and Grass Creek RMPs could lead to the relocation or shooting (both authorized and unauthorized) of individual grizzly bears. In order to minimize effects from its actions, the Bureau has committed to implementing a suite of conservation measures to plan and conduct its activities and educate its personnel, permittees, and the public so that the grizzly bear's welfare will be a top priority in the bear's habitat on Bureau-administered lands. Conservation measures are designed to reduce the potential for human-bear encounters and related bear mortality, and provide secure habitat for females to raise their young. Conservation efforts include reduction in bear access to human food and garbage, evaluation of road densities, research on availability of grizzly foods, and other study of bears and their habitat.

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. Activities identified in the Bureau's Statewide Grizzly Bear Programmatic Biological Assessment (BLM 2005) which could have cumulative effects to the grizzly bear in the Grass Creek, Green River, Pinedale, Lander, Kemmerer, and Cody RMP administrative areas are presented here. Potential activities which could cumulatively affect the grizzly bear include oil and gas development on private land in grizzly bear habitat in the Grass Creek RMP administrative area. Existing and proposed activities on non-federal land in the Green River RMP administrative area include (1) coal mine operations, (2) coalbed methane development, (3) transmission lines, (4) seismic exploration, (5) trona (soda ash) mining, (6) power plant development, construction, and operation, (7) wind farms, (8) livestock grazing, (9) municipal dump expansions, and (10) housing developments. Potential activities which may cumulatively affect grizzly bears in the Pinedale RMP administrative area include: (1) subdivision development along rivers (especially along the New Fork and Green Rivers), (2) natural gas development south of Pinedale, and (3) sand and gravel operations along river corridors. Non-federal activities which may have cumulative effects in the Lander RMP administrative area include: (1) subdivision development along rivers (especially along the Wind River near Dubois) that would result in habitat fragmentation, (2) sand and gravel operations along river corridors, (3) livestock grazing on private lands, and (4) timber harvesting. For the Kemmerer RMP administrative area, non-federal activities which may cumulatively affect the grizzly bear or its habitat include (1) existing and proposed wind farms, (2) hard rock mining (including trona, and phosphates), (3) livestock grazing on private lands, (4) non-federal oil and gas fields and related energy development, (4) vehicle use which may cause vehicle/bear collisions, and (5) logging on private lands within grizzly bear habitat. Non-federal activities in the Cody RMP administrative area which may have cumulative effects

to the grizzly bear include (1) oil field exploration proposed for the western side of the Bighorn Mountains, (2) bentonite and gypsum mining on the western side of the Bighorn Mountains, (3) seismic exploration outside of the town of Clark, near the Clark's Fork River, and (4) coal exploration in coal seams throughout the Cody RMP administrative area.

Certain components of these non-federal projects, if completed, could displace or modify the behavior of grizzly bears. Grizzly bear habitats could also be modified or degraded by the above-listed non-federal activities which are reasonably certain to occur within the Bureau RMP administrative areas. Some of these activities are situated near important grizzly bear habitats or linkages on Bureau-administered lands.

CONCLUSION

After reviewing the current status of the grizzly bears; the environmental baseline for the action area; the effects of the Resource Management Plans 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 Cody, Lander, Pinedale, and Grass Creek RMPs with commitment to conservation measures, as proposed, are not likely to jeopardize the continued existence of the grizzly bear. Critical habitat has not been designated, therefore none will be affected.

The Service has reached this conclusion by considering the following.

1. An accurate estimate of grizzly bear population size in the Greater Yellowstone Ecosystem has always been elusive given the bear's normally isolated existence in remote inaccessible terrain. However, this species has increased in numbers since the year of its listing. The range of the grizzly bear in the Greater Yellowstone Ecosystem has also increased dramatically, as evidenced by the 48 percent increase in occupied habitat since the 1970s (Pyare *et al.* 2004, Schwartz *et al.* 2002, USFWS 2005). Furthermore, as a result in this increase in population size, range expansion, and other factors, a proposal for delisting of the grizzly bear was recently published by the U.S. Fish and Wildlife Service (USFWS 2005).
2. The Bureau is committed to implementing protective measures (see Appendix) to minimize potential impacts to grizzly bears.
3. Finally, although individual grizzly bears may be adversely impacted by conflicts arising over livestock grazing activities, these activities will occur in transition, sub-optimal habitat outside of the core population area for the Greater Yellowstone grizzly bear population. These conflicts are expected to consist primarily of sub-adult individuals that have been pushed out of optimal habitat through competition with more dominant bears. The core population of grizzly bears of the Greater Yellowstone Ecosystem is expected to remain relatively unaffected by livestock grazing activities of the Bureau in Wyoming.

INCIDENTAL TAKE STATEMENT

Section 4(d) and 9 of the Act, as amended, prohibit taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or the applicant. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the Bureau so that they become binding conditions of any grant or permit issued, as appropriate, for the exemption in section 7(o)(2) to apply. The Bureau has a continuing duty to regulate the activity covered by this Incidental Take Statement. If the Bureau (1) fails to assume and implement the terms and conditions or (2) fails to require the applicant to adhere to the terms and conditions of the Incidental Take Statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of the incidental take, the Bureau must report the progress of the action and its impact on the species to the Service as specified in the Incidental Take Statement. [50 CFR 402.14(i)(3)].

AMOUNT OR EXTENT OF TAKE

The Service anticipates that grizzly bears could be taken as a result of the continuation of management according to the existing Bureau Resource Management Plans. The incidental take is expected to be in the form of harm or harassment. Incidental take has been determined based on the BA and an analysis of the environmental baseline, effects of the action, and the cumulative effects. At the broad scale of this consultation, the Service is unable to anticipate all possible circumstances that may involve the take of grizzly bears due to the actions implemented under the proposed plan. Therefore, the Service conservatively anticipates that some level of incidental take, both lethal and non-lethal, may occur due to specific actions implemented under these four RMPs. However, the amount or extent of take is unquantifiable at this time. The Service believes that the take, resulting from this plan, is tied to habitat modification of grizzly bears that will result in harm or death to grizzly bears. Any actions implemented under the RMP that may adversely affect the grizzly bear would require separate formal Section 7 consultation at the project level. Therefore, incidental take will appropriately be assessed, and coverage under the terms of Section 7(b)(4) and Section 7(o)(2) of the Act will be granted as appropriate, at the project level during formal consultation.

EFFECT OF THE TAKE

In this Biological Opinion, the Service has determined that this level of anticipated take is not likely to result in jeopardy to the grizzly bear. This is based in part, on the fact that measured population parameters in past years have met established recovery plan levels, while bear mortality has generally been below the threshold levels established in the recovery plan. However, the Service anticipates that the direct and indirect effects of implementing livestock grazing activities under the Cody, Lander, Pinedale, and Grass Creek RMPs (resulting in continued livestock grazing along with implementation of the Interagency Grizzly Bear Guidelines and Bureau-committed conservation measures) could maintain or add to the existing level of incidental take. This "take" may be in the form of lethal take, as a result of management actions/nuisance bear control associated with grizzly bear/livestock conflicts, or in the form of non-lethal take, such as harm resulting from harassment or displacement of grizzly bears from occupied habitats. No critical habitat for the grizzly bear has been designated; therefore none will be destroyed or adversely modified.

REASONABLE AND PRUDENT MEASURES

The Service believes that the following reasonable and prudent measures (RPM) are necessary and appropriate to minimize impacts of incidental take:

- RPM1. The Bureau shall implement measures at the individual project level to minimize grizzly bear/livestock conflicts, grizzly bear/human conflicts, and grizzly bear habituation to human activities in the Cody, Lander, Pinedale, and Grass Creek Bureau RMP administrative areas.
- RPM2. The Bureau shall implement measures across the Wyoming Bureau managed lands to improve habitat conditions for grizzly bears.

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of Section 9 of the Act, the Bureau must comply with the following terms and conditions (T&C), which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are nondiscretionary. Many of these terms and conditions are reiterated here or modified from the Bureau Statewide Programmatic Grizzly bear Biological Assessment (BLM 2005).

- T&C1. The Bureau shall implement all conservation measures as described as part of the proposed action in the Biological Assessment.
- T&C2. As per section 7 of the Act, the Bureau will consult individually over the impacts of site-specific projects authorized by the Wyoming RMPs which "may affect" grizzly bears. These future consultations will provide a means for site-specific

analysis and documentation of levels of any potential incidental take of grizzly bears.

- T&C3. To monitor the impacts of site-specific projects authorized under the Bureau's Wyoming RMPs, that are likely to adversely affect grizzly bears, the Bureau shall prepare a report describing the progress of each such site-specific project, including implementation of the associated reasonable and prudent measures, and impacts to the grizzly bear (50 C.F.R. § 402.14[i][3]).

The reasonable and prudent measures, with their implementing terms and conditions and the reporting criteria, are designed to minimize the impact of incidental take that might otherwise result from the authorized activities under the RMPs. If, during the course of the authorized activities, any level of incidental take has exceeded that as permitted by site-specific formal consultations for grizzly bears, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. The Bureau must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

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 (1) phase out sheep allotments in occupied grizzly bear habitat as the opportunity arises, (2) monitor and evaluate for conflicts between grizzly bears and sheep in existing sheep allotments in occupied grizzly bear habitat, and (3) offer no new permitted sheep Animal Unit Months (AUMs) in grizzly bear habitat where conflicts have occurred in the past, or are likely to occur in the future.
- CR2. The Service recommends that the Bureau adjust management of domestic livestock on public land allotments or leases to minimize grizzly bear-livestock conflicts (such as season of use, class of livestock, etc.).
- CR3. The Service recommends that the Bureau include a clause on all use authorizations that allows for temporary cessation of activities, temporary cancellation, or as a last resort permanent cancellation if needed to resolve a grizzly-human conflict situation.
- CR4. The Service recommends that the Bureau (1) initiate a habitat mapping and monitoring effort for the grizzly bear using Geographic Information System (GIS) technology and (2) secure grizzly bear habitat with the appropriate route densities.

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 threatened species. In future communications regarding this Biological Opinion, please refer to consultation number ES-6-WY-05-F030. If we may be of further assistance, please contact Alex Schubert of my staff at (307) 772-2374, ext. 38.

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APPENDIX - CONSERVATION MEASURES AND BEST MANAGEMENT PRACTICES TAKEN FROM THE PROGRAMMATIC GRIZZLY BEAR BIOLOGICAL ASSESSMENT

These conservation measures and best management practices were taken from the Programmatic Grizzly Bear Biological Assessment (2005) and are based on the Interagency Grizzly Bear Guidelines [Interagency Grizzly Bear Committee (IGBC) 1986] and the Grizzly Bear Conservation Strategy [Interagency Conservation Strategy Team (ICST) 2003]. Implementation of the following is intended to minimize potential adverse impacts that are likely to result from implementation of the management actions provided in the RMPs. The Bureau has committed to implement conservation measures 1 through 12. The Bureau will also consider implementing best management practices 1 through 8, at every opportunity to further protect the grizzly bear.

The following Bureau-committed conservation measures are to be implemented in grizzly bear habitat, and are intended to minimize or eliminate adverse impacts likely to result from implementation of the management actions provided in the RMPs. The six Wyoming Bureau RMP administrative areas are located outside of the grizzly bear Primary Conservation Area as described by the ICST (2003). The Bureau is committed to the implementation of Conservation Measures (1 through 12), and the Bureau will also consider implementing any appropriate best management practices (BMPs), items 13 through 20, at every opportunity to further protect the grizzly bear. In the future, it is expected that grizzly bears will reoccupy historic ranges, and move into new areas. The Bureau will ensure the implementation of these conservation strategies for the protection and management of newly-established populations.

The most important factors affecting grizzly bears on the landscape are the levels of human activities including food storage, livestock allotments, motorized access, and site development (ICST 2003). One of the key habitat factors in the maintenance of grizzly bear populations is the protection of secure habitat, defined as all areas more than 500 m from an open or gated motorized access route or high use non-motorized trail, and larger than 10 acres, and providing all the key elements needed for the survival and life functions of these animals (such as food sources, cover, denning areas, and security from human disturbance and disruptive activities). Human behavior and habitat are both addressed in the following Conservation Measures and Best Management Practices.

Conservation Measures

1. The Bureau shall ensure that authorized activities planned to occur in currently occupied grizzly bear habitat shall be analyzed and planned with active grizzly bear protection measures. Restrictions on timing of activity and spatial considerations for grizzly bears, or other parameters, will be implemented to avoid or prevent significant disruptions of normal or expected bear behavior and activity in the area.
2. The Bureau shall provide a packet of educational materials to authorized permittees in grizzly habitat, including, but not limited to, special recreation permittees, livestock permittees, and timber operators.

3. In occupied grizzly bear habitat, and in areas of bear conflicts, the Bureau shall install bear-resistant refuse containers in those developed campgrounds and picnic areas where refuse containers are provided and maintained. In areas receiving dispersed recreational use, the Bureau shall inform the public of proper storage techniques for food and refuse.
4. The Bureau shall ensure that operation plans and special use permits in occupied grizzly bear habitat will specify food storage and handling and garbage disposal standards. All temporary living facilities under temporary use permits in occupied grizzly bear habitat will be required to practice proper food storage and keep all potential attractants stored so they are unavailable to bears. Edibles and/or garbage will be secured from access by grizzly bears. Bear proof refuse containers, and timely refuse collection to prevent overflow, shall be required.
5. Important grizzly bear food resources that may occur on Bureau-administered land, particularly whitebark pine, army cutworm moths, ungulates (primarily elk calving grounds), and spawning cutthroat trout, shall be noted and monitored. Other important foods may be added to those listed above as our understanding of grizzly bear food resources on Bureau-administered land grows. Monitoring protocols for these food resources can be adapted from Appendix E of the Conservation Strategy (ICST 2003) (<http://www.fs.fed.us/r1/wildlife/igbc/ConservationStrategy/CSappendices.pdf>).
6. The Bureau shall continue to attend, and be a member of, the Yellowstone Ecosystem Subcommittee of the IGBC. After delisting, the Bureau shall continue to attend the appropriate coordination group(s) including the Yellowstone Grizzly Coordinating Committee.
7. The Bureau shall not approve commercial cutting or other removal of whitebark pine in the six Bureau administrative areas analyzed in this document in occupied or potential grizzly bear habitat.
8. The Bureau shall implement strategies to reduce human-bear and domestic livestock-bear conflicts by conducting an evaluation of the causes of such conflicts when they do occur and determining what can be done to avoid or reduce such conflicts in the future. Currently these conflicts are discussed at the NW Wyoming Level One Streamlining Team meetings held approximately every 45-60 days.
9. All permit holders that conduct activities on public lands in occupied grizzly bear habitat that could result in livestock carcasses being left in locations where bears might be attracted to them shall be informed that all livestock carcasses or parts of carcasses shall be either packed, dragged, or otherwise transported to a location a minimum of 1/2 mile from any inhabited dwelling, sleeping area, tent road, trail, or recreation site in as timely a manner as possible, unless otherwise directed by a Bureau range/wildlife specialist or ranger. Carcasses shall be moved at least 100 yards from live water. Other options for carcass disposal may include using explosives or burning the carcass at the discretion of a Bureau range/wildlife specialist or ranger. In cases of uncertainty on carcass disposition the permit holder (or lessee) shall contact the appropriate Bureau Field Office.

10. The Bureau shall require that the Proper Functioning Condition (PFC) of existing aquatic systems and riparian zones in occupied grizzly bear habitat will be maintained for all Bureau-administered Public Lands. If these areas are polluted and/or damaged from activities, lessee/permittee/grantee or the Bureau will be required to assume full responsibility for rehabilitation and restoration of such areas (from IGBC 1986).
11. The Bureau shall require that existing roads, drilling pads, and other areas with vegetation removed due to authorized activities in occupied grizzly bear habitat will be revegetated and reclaimed by lessee/permittee/grantee in a fashion that considers all grizzly bear needs or requirements.
12. Wild horse roundups and other intensive wild horse management activities will avoid areas in or immediately adjacent to occupied grizzly bear habitat.

Best Management Practices - The Bureau considers the following Best Management Practices (BMPs) to be non-binding conservation practices that will, if implemented, aid in the conservation of the Grizzly Bear. These BMPs for the Grizzly Bear may be implemented on a case-by-case basis as appropriate.

1. With the intent of reducing potential conflicts between grizzly bears and livestock and the Bureau should phase out sheep allotments in occupied grizzly bear habitat as the opportunity arises. Existing sheep allotments in occupied grizzly bear habitat should be monitored and evaluated for conflicts between grizzly bears and sheep. The Bureau should offer no new permitted sheep Animal Unit Months (AUMs) in grizzly bear habitat where conflicts have occurred in the past, or are likely to occur in the future.
2. The Bureau should adjust management of domestic livestock on public land allotments or leases to minimize grizzly bear-livestock conflicts (such as season of use, class of livestock, etc.).
3. The Bureau should include a clause on all use authorizations that allows for permanent cancellation, temporary cancellation, or temporary cessation of activities if such are needed to resolve a grizzly-human conflict situation.
4. Wherever possible, the Bureau should reduce motorized access routes in occupied grizzly bear habitat and will try to avoid authorizing any new motorized access in occupied grizzly bear areas (i.e., big game ranges).
5. Wherever possible, the Bureau will implement appropriate closures or seasonal restriction areas to cross-country motorized travel to provide more security in occupied grizzly bear habitat.
6. Where possible, maintain road densities of less than one mile per square mile in occupied grizzly bear habitat. Where existing road densities are currently below 1 mile per square mile, avoid increases in road density to maintain management options and secure habitat.

- Consider all big game winter range areas as areas where road density objectives are less than 1 mile of road per square mile.
7. The Bureau should initiate a habitat mapping and monitoring effort for the grizzly bear. Habitat mapped on Bureau lands will be done using Geographic Information System (GIS) technology. Secure habitat, open motorized access route density (OMARD, refers to roads that are actively used) greater than one mile/square mile, and total motorized access route density (TMARD, includes all roads, even gated roads) greater than two miles/square mile will be monitored utilizing the Yellowstone Grizzly Bear Cumulative Effects Model (CEM) GIS databases and will be reported annually, as is described in ICST (2003) and conducted in the PCA.
 8. In areas of vital importance to grizzly bears (known denning areas, army cutworm moth aggregations, cutthroat trout spawning sites, spring ungulate concentration sites, etc.) activities which adversely affect grizzly bear populations and/or their habitat should be avoided. Adverse habitat effects could result from land surface disturbances; water table alterations; reservoirs, rights-of-way, roads, pipelines, canals, transmission lines, or other structures; increased human foods; and reduced availability of natural foods. Areas of vital importance to grizzlies are identified through the evaluation process described in the Grizzly Bear Management Guidelines (IGBC 1986).

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