

LANDER FIELD OFFICE

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

Environmental Baseline

This section presents a summary of the known LAUs in the Lander FO and an analysis of the effects of past and ongoing human activities (including Federal, State, tribal, local and private) that may influence lynx and their habitats. Five LAUs from the adjacent Shoshone National Forest at the west end of the FO in the Dubois area extend onto BLM land. These LAUs take up 115,611 acres on BLM land in this FO (**Table 3, Map 5**).

Habitat has been delineated for the Lander FO, all within an LAU. There are 10,893 acres of BLM LAU habitat, comprising 9% of the total BLM LAU acreage (**Table 3**).

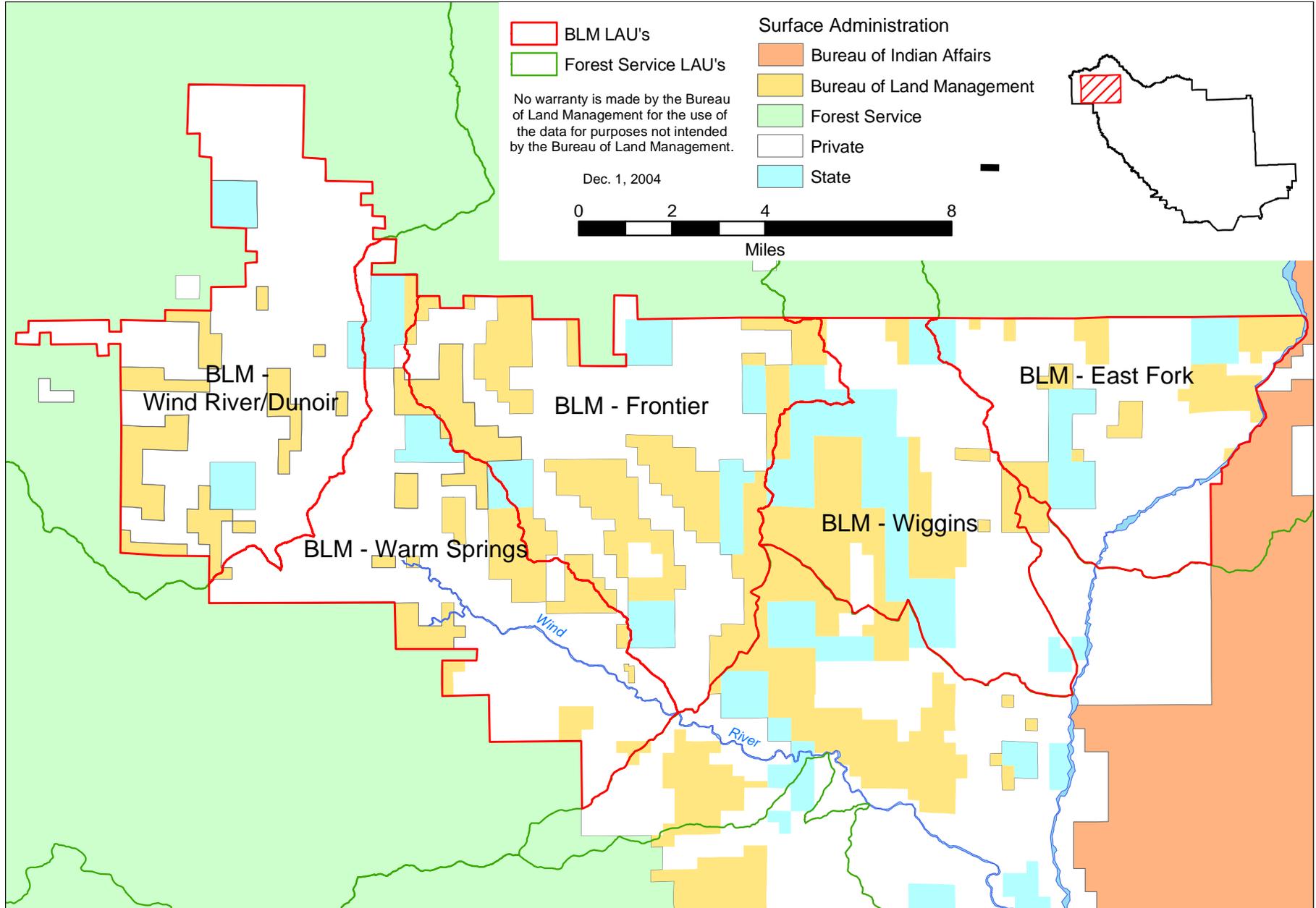
In earlier Forest Service (FS) mapping efforts, Shoshone FS LAUs were defined for the Wind Rivers in the Fitzpatrick Wilderness (LAUs 14 and 15), and by Lander (LAUs 16, 17, and 18). In a reevaluation of these, the FS determined that they did not contain lynx habitat (Hinschberger 2004), and they were subsequently dropped by the FS. BLM followed suit and dropped these LAUs as well. Although this will be reevaluated by staff at Shoshone NF, it is doubtful that they will be reinstated (Hinschberger 2003).

The RMP was divided into 13 management units that were delineated through a process involving intensive public input and professional judgment by BLM personnel. The breakout by management units focused the management actions to the specific areas in the field office. The 5 LAUs are in the East Fork and Dubois Area Management Units.

In addition to the LAUs discussed above, the Lander FO also has potential lynx travel corridors in the Crooks and Green mountains. In combination with the Seminoe and Ferris mountains in the Rawlins FO, these mountains provide a continuous mountainous linkage between the Medicine Bow Mountains and the Wind River Range.

There are 31 lynx records from the Lander FO in the WYNDD database, although none are on BLM land (**Table 2 and Appendix A**) (WYNDD 2003). Staff with the Wyoming Game and Fish Department observed lynx tracks near Dubois in the Horse Creek/Burroughs Creek area, and near Lander in the Limestone Mountain area. Private individuals reported lynx observations from Brooks Lake Creek and Kitten Creek near Dubois, and on Horse Creek near Dubois (Wyoming Game and Fish Department 1998).

Map 5: Lander Field Office Lynx Analysis Units



Existing Conservation Measures

The following section presents measures included in the Lander RMP that may directly or indirectly minimize impacts to the lynx.

(a) “BLM will continue to work closely with the Wyoming Game and Fish Department in all matters affecting fish and wildlife resources” (BLM 1987, p. 4).

(b) “ORV management will focus more intensive management on those management units having crucial wildlife values” (BLM 1987, p. 9).

(c) “New oil and gas leases issued in areas rated as having moderate, low or no potential for the occurrence of oil and gas reserves will include a no-surface-occupancy restriction to protect water quality, fisheries, riparian areas, sage grouse leks, steep slopes, threatened and endangered species, significant cultural sites, sensitive visual resources, and elk and moose crucial winter range. In addition, seasonal restrictions will be applied to the leases to protect important wildlife habitat areas” (BLM 1987, p.27, 40, 43, 45, 50, 60, and 69).

(d) “Crucial wildlife areas will be critically examined before placement of any range improvement projects that can result in increased livestock use in these areas. Some crucial wildlife areas will require special intensive management actions” (BLM 1987, p. 80).

(e) No activities will be permitted in habitat for threatened or endangered species that would jeopardize the continued existence of such species. Whenever possible, management actions in habitats for threatened or endangered species will be designated to benefit those species through habitat improvement. The U.S. Fish and Wildlife Service will be consulted before implementing projects that may affect threatened and endangered species habitat. If a “may effect” situation is determined to exist by BLM biologists, then consultation with the U.S. Fish and Wildlife Service will be initiated according to Section 7 of the Endangered Species Act of 1973, as amended (BLM 1986b, p.31).

Analysis of Proposed Management Actions and Effects

The Lander RMP (BLM 1987a) describes each management prescription applied within the FO. These activities are summarized in the Introduction, above. Refer to the Lander RMP for a complete description of each management prescription (BLM 1987a).

Energy and Minerals

Management Action

Less than 1% of the slightly more than 2.7 million acres of federal mineral estate within the FO will be closed to leasing. All but 12,000 acres of the open acreage will be managed under a management prescription that will allow for enhanced management of the oil and gas resources by being less restrictive of oil and gas development related to other surface resource values in known geological structures and areas rated as having a high potential for the occurrence of oil and gas. This would be accomplished over the life of this plan as analyses are done to determine where the restrictions can be modified and still avoid significant impacts to other resources. In addition, as new information on the potential occurrence of oil and gas in any given area is obtained or new discoveries of oil and gas reserves are made, the potential rating for the area will be revised to reflect new data. New leases issued in these areas will be issued under the management prescription for that new rating.

Oil and gas leases issued within the FO will be conditioned with stipulations to protect other important resource values. If a particular method of geophysical exploration could be conducted within the constraints necessary to protect other resources, it will be allowed.

Specifically, the East Fork Management Unit will be designated a no-leasing area for oil and gas. Should drainage occur, BLM will recommend leasing under such stipulations as agreed upon by the Wyoming Game and Fish Department, the U.S. Fish and Wildlife Service and the BLM.

The entire Dubois Area Management Unit will be open for oil and gas leasing, where some old oil and gas leases with producing wells are located. New oil and gas leases issued in areas rated as having moderate, low or no potential for the occurrence of oil and gas resources will include a no-surface-occupancy restriction to protect water quality, fisheries, riparian areas, sage grouse leks, steep slopes, threatened and endangered species, Warm Springs Canyon, the area around Torrey Lake and significant cultural sites. In addition, seasonal restrictions will be applied to the leases to protect important wildlife habitat areas. In areas with moderate, low or no potential for occurrence of oil or gas, restrictions will be applied automatically before lease issuance. These restrictions could be waived later if appropriate. In areas of high potential for the occurrence of oil or gas, including Known Geological Structures (KGS), restrictions will not be automatically applied before lease issuance. Instead, new oil and gas leases issued in these areas will be conditioned with no-surface-occupancy and seasonal restrictions on a case-by-case basis and only when necessary to avoid a significant adverse impact on another resource. This plan will further provide for the enhancement of oil and gas development in KGSs and high-potential areas through the waiver of lease restrictions, upon demonstration by the lessee that adverse impacts to other resources could be minimized.

Waiver of the NSO requirement would be subject to the same test used to initially justify its imposition. The record must show that because conditions or uses have changed, less restrictive requirements would protect the public interest.

All federal lands within the FO will be open to locatable mineral exploration and development unless specifically withdrawn or segregated from appropriation under the mining laws. At the present time, approximately 1% of the federal mineral estate within the FO is closed to locatable mineral exploration and development. The portion of the FO that will be closed to locatable mineral exploration and development will increase by 30,000 acres to approximately 2% of the total federal mineral estate within the FO. The additional acreage proposed for withdrawal will be withdrawn to protect crucial wildlife habitat in the East Fork Elk Winter Range (LAUs 9 and 10) and Whiskey Mountain Bighorn Sheep Winter Range, and the remaining acreage will be scattered throughout the FO in small tracts primarily for the protection of significant cultural and historical resources. One hundred ninety acres in the Warm Springs Canyon area (LAU 13) of the Dubois Area Management Unit is also withdrawn.

In addition, in an attempt to minimize the acreage withdrawn to protect significant surface resource values, the plan will require that plans of operation be approved for all exploration and mining operations in certain areas designated as ACECs. Notices of intent usually allowed for operations disturbing five acres or less will not be allowed.

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

Canyon and Lander Slope Management Units, these restrictions will adversely affect the economic recovery of the phosphate resource. No significant phosphate resources are located in the Dubois area of the field office.

Exploration and development of other minerals, such as sand and gravel, building stone, and other common minerals, will be allowed on a demand basis and consistent with the limitations and restrictions imposed on oil and gas, locatable minerals, and phosphate exploration and development within the FO.

In the 1990s, before lynx were listed, the Forest Service received APDs on lands under their administration. At that time Lander FO leased some parcels but no NOS/APDs have been received on those leases (Carroll 2003).

Effects Analysis

Human activity associated with oil and gas and mineral development may negatively impact lynx behavior by causing them to avoid or abandon these areas. Construction of roads, pads, or access by OHVs, and other facilities associated with development of mineral resources may alter or destroy existing terrestrial habitats that may be suitable lynx foraging habitats or linkages between suitable habitats, such as in forested or shrub-steppe habitats. Increased vehicle traffic associated with mineral and geology exploration, development, and operation may lead to increases in vehicle collisions with lynx. However, large portions of two LAUs (BLM-East Fork and BLM-Wiggins) have been designated no-leasing for oil and gas. Because of T&E species resource values, a no surface occupancy restriction would apply to the remainder of those two LAUs. And the protective measures provided by the Conservation Measures ensure clear limitations on lynx habitat loss, stipulations that limit timing of activities, and minimization of snow compaction.

The Lander RMP has language that protects T&E species and their habitats in general. All surface and human presence disturbances/activities, including leaseables, geophysical exploration, and salables, are subject to the BLM Mitigation Guidelines for Surface Disturbing and Disruptive Activities. Whenever possible, management actions in habitats for threatened or endangered species will be designated to benefit those species through habitat improvement. No-surface-occupancy restrictions are applied to threatened or endangered species habitat.

Conservation Measures in place (Section 4) include the assessment of habitat in suitable and unsuitable condition and the ensuing limitations on percentage of disturbance allowable to habitat as specified in the LCAS (Ruediger et al. 2000), as well as stipulations and conditions of approval for minerals development that place limits on timing and surface use and occupancy that are developed at the leasing and NOS/APD stages, and the minimization of snow compaction when authorizing and monitoring developments.

Determination

Implementation of geology and mineral management actions, as presented in the Lander RMP (1987a), **is not likely to adversely affect**, due to **insignificant effects**. This determination is based on the minimal amount of suitable lynx habitat on BLM-administered lands; the implementation of Conservation Measures (1-6 under “All Programs”, and 1-2 under “Energy Development”); the protections in place for threatened and endangered species; and the low potential for existing and current mineral and energy development to cause harassment, displacement, injury, and mortality of lynx due to mineral activities.

Fish and Wildlife

Management Actions

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

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

The East Fork Management Unit allows cooperative habitat improvement projects developed with the Wyoming Game and Fish Department to continue. These will include a variety of actions such as prescribed burning or other cultural practices, seeding, pitting, herbicide treatment, water development, etc. Any projects initiated will be designed to improve habitat for wintering elk, the priority species on the unit, or to benefit other species if the project will not cause significant negative effects on the elk population. Projects that will benefit elk, but that will also have significant negative effects on other important species, probably will not be undertaken.

Development of small-scale, simple, or routine habitat improvement projects and maintenance of useful existing projects will be continued throughout the FO. Such action will be subject to normal interdisciplinary environmental review, and budgetary and management constraints.

Effects Analysis

Management actions associated with wildlife habitat management may influence lynx behavior by causing lynx to avoid or abandon habitats experiencing active management projects. Potential impacts are dependent upon several factors including the number of people involved with each field effort, the time of year, duration of field activities, use of heavy machinery versus hand tools, and type of habitat affected. The implementation of wildlife management actions in the Dubois area will likely have positive effects by maintaining or improving existing habitat conditions that will benefit lynx and their prey.

Determination

Implementation of wildlife habitat management actions, as presented in the Lander RMP (1987a), is **not likely to adversely affect** the lynx due to **insignificant effects**. Although there is the possibility of some occasional and small degree of disturbance, this determination is based on the potential for these actions to benefit the lynx by maintaining or enhancing habitats used by snowshoe hares, sage grouse, and jackrabbits in shrub steplands, mountain shrublands, Douglas fir, Engelmann spruce-subalpine fir, and aspen-conifer forestlands.

Forest Management

Management Actions

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

Minor forest products will continue to be sold from timbered areas on a demand basis, depending on resource management objectives. Most fuel wood cutting will occur in the Green Mountain Management Unit.

Sawtimber volumes offered in the Green Mountain Management Unit will be approximately two million board feet (MMBF) per year and minor forest product volumes will be 1.5 to 2 MMBF per year. This will be undertaken for 10 years, or until the majority of the larger timber has been salvaged.

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

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

In the Dubois Area Management Unit small timber sales will be offered if there is a demand. The objective will be to improve the condition of the timber on small areas by regenerating harvested areas. This will be mainly to benefit wildlife habitat in these areas.

Timber resources in the Dubois Area Management Unit are quite limited; therefore, opportunity for timber harvest is also quite limited. There are only 2,000 acres of timber stands scattered over this area, with the majority in the Sand Butte and Hat Butte Areas.

Physical access to the timber stands is difficult because of the rough terrain, but could be accomplished from at least two different directions. Legal access through private lands is lacking; however, this should not be a problem if negotiated sales were utilized.

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

Most of the timber acquisition activities are initiated by small companies seeking timber for fencing projects or log cabins. There are currently no large-scale timber sales or large clear-cuts planned (Oberlie 2003).

Effects Analysis

Forest management actions in the Lander FO will primarily occur in upland coniferous forests in the Green Mountain Unit. In the Lander FO, LAUs are only indicated at the interface with the Shoshone National Forest in the Dubois Unit. However, some timber management activities may occur in the Dubois area.

Timber management creates different patterns of forest stand types than the patchwork of early and late succession conditions resulting from fire and other finer-scale disturbance agents (Ruediger et al. 2000). Timber harvest may cause reduction of large woody debris, which may eliminate potential denning sites, reduce kitten survival, and reduce availability of snowshoe hares and red squirrels. Pre-commercial thinning has direct negative effect on hare habitat, at least in the short term. Clear cutting (including stand replacement), logging operations, road and landing construction, shearing, helicopter logging, and disease treatment sprayings all have the potential to disturb lynx by eliminating lynx and hare habitat and cover, or causing heavy disturbance in habitat used by lynx and their prey. However, protective measures are in place with the Conservation Measures and Best Management Practices: the former limit habitat loss, disallow salvage harvest in potential denning habitat, only allow pre-commercial thinning when stands no longer provide hare habitat, ensure that aspen stand harvest prescriptions favor aspen regeneration, and that commercial thinning is designed to retain and improve small diameter conifers and shrubs favored by hares; the latter include a diverse array of practices that will protect and improve lynx habitat.

Determination

Implementation of forest management actions, as presented in the Lander RMP (1987a), is **not likely to adversely affect** the lynx, due to **insignificant effects**. This determination is based on the limited forest resources on BLM-administered lands in the Dubois area, the fact that many of these stands are not suitable lynx habitat, the existing protections for threatened and endangered species provided for in the RMP, and the Conservation Measures in place, which will protect lynx and their habitat from adverse impacts. Conservation Measures in place (Section 4) include the assessment of habitat in suitable and unsuitable condition and the ensuing limitations on percentage of disturbance allowable to habitat as specified in the LCAS (Ruediger et al. 2000), as well as restrictions on pre-commercial thinning, salvage, harvest prescriptions in aspen stands, and improvement harvests, and the protection of linkages and connectivity. These measures will provide protection for lynx and their habitat.

Land Ownership Adjustments and Utility Systems

Management Actions

The majority of the 2.5 million areas of public lands in federal ownership will be retained. Based upon the analysis in the Lander RMP/EIS, 108 tracts, encompassing 12,500 acres, could be considered for future disposal through either sale or exchange. Of these, 3,286 acres have already been exchanged.

Major utility and transportation systems will be located to make use existing corridors whenever possible, to provide for cost-efficient routes and to provide for protection of other resource values such as scenery and wildlife. Most of the area will be open for location of major utility systems. However, areas with the most potential conflicts have already been identified as areas to avoid. The avoidance areas will be areas where rights of way may be granted only when no feasible alternative route or designated rights of way corridor is available. These areas include Whiskey Mountain Bighorn Sheep Winter Range, the East Fork Crucial Elk Winter Range, the Dubois Badlands, the Lander Slope, Red Canyon, South Pass, Sweetwater

Canyon, the Sweetwater Rocks, and ¼ mile or the visible horizon, whichever is less, on each side of the Oregon/Mormon Pioneer National Historic Trails.

Effects Analysis

Lands and realty management actions are not expected to negatively impact lynx behavior or habitats. Disposal or transfer of public lands with potential lynx habitat through Desert Land Entry, public sale, exchange, Wyoming indemnity selection, or Recreation and Public Purposes (R&PP) leases or patents may affect the lynx's ability to utilize suitable habitat and travel corridors linking desirable habitats. However, current BLM land holdings would be evaluated for unique characteristics prior to disposal, including suitability and use by lynx. BLM lands identified as lynx habitat or important travel corridors would not be available for disposal. Lands not under BLM jurisdiction that are suitable or occupied lynx habitats may be targeted for acquisition and subsequent management by BLM. Such acquisitions would provide benefits to lynx habitats that may not be afforded under non-federal ownership.

Corridors are designated and managed to accommodate power lines, communication towers, pipelines, and roads. The grouping of utility lines minimizes disturbance and helps to protect larger blocks of land from fragmentation.

The acquisition of access easements as well as Rights-of-way/leases include powerlines, communication sites, pipelines, ditches and canals, roads (includes stream crossings), well pads, reservoirs, buried telephone and fiber optic lines, wind power generation farms and facilities, compressor stations and other facilities, temporary use permits, and fence re-vegetation sites and designate, cancel, or change stock trail driveways activities may cause short-term behavioral avoidance of these areas during construction/maintenance operations and would have an insignificant effect on the lynx. The establishment of withdrawals, acquisition of conservation easements, and road closures/rehabilitation would close areas from certain activities creating undisturbed habitat for lynx and would have positive affects on lynx.

Determination

Implementation of land resource management actions, as provided in the Lander RMP (1987a) is **not likely to adversely affect** the lynx, due to **insignificant effects**. This determination is based on the low potential for issuance of right-of-way and leases for utility transportation corridors, ditches and canals, and roads; temporary use permits; and fencing of revegetation sites to disturb lynx behavior and affect their ability to use suitable habitat and travel corridors between habitats. And because Conservation Measures (1-6 under "All Programs", and 1 under "Lands Management") are in place to limit potential habitat loss, and to ensure that key linkage areas are evaluated prior to land resource management actions.

Recreation Management

Management Action

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

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

BLM will continue to monitor recreational use throughout the FO. Area personnel will supervise recreational use and provide enforcement of recreation-oriented regulations and special designations. Monitoring and use supervision will be accomplished by patrolling high-use areas and contacting users in the field. Special efforts will be made to ensure compliance with the terms of special recreation-use permits, authorizing commercial guide/outfitter services, permits for tours of the Oregon/Mormon Pioneer National Historic Trails, and special designations dealing with recreation such as 14-day camping limit on public lands and off-road vehicle designations. Quotas will be established for commercial hunting camps in the Green Mountain, Lander Slope, Red Canyon, and Whiskey Mountain Management Units.

The East Fork Management Unit requires minimal management for recreation. Emphasis will be on resolving user conflicts and providing resource protection. The Dubois Area Management Unit will best be managed consistently with other extensive recreation management area objectives where dispersed recreation will be encouraged and where visitors will have freedom of recreation choice with minimal regulation.

Effects Analysis

Recreation in the Dubois area is managed for dispersed activity. Winter activities, such as snowmobiling and cross-country skiing, may cause short-term behavioral avoidance by lynx where they occur. Snowmobiling is allowed on BLM-administered lands in the Dubois area, but ownership patterns and closures prevent the use of some of the BLM-administered lands to snowmobiles and motorized vehicles either seasonally or year-long. Lynx use of BLM-administered lands in the winter is probably limited due to competition with other predators for winter-killed big game.

Determination

Implementation of recreation resource management actions, as presented in the Lander RMP (1987a), is **not likely to adversely affect** the lynx, due to **insignificant effects**. This determination is based on the fact that recreation use is dispersed and is limited in the winter by land ownership patterns and seasonal closures, creating short-term and insignificant impacts because, although they are in LAUs, the lynx habitats on BLM-administered lands are extremely limited and fragmented. This determination is also based on the Conservation Measures in place that will preclude adverse effects to lynx or their habitat.

The Conservation Measures in place for recreation management include the assessment of habitat in suitable and unsuitable condition and the ensuing limitations on percentage of disturbance allowable to habitat as specified in the LCAS (Ruediger et al. 2000); the no net increase in over-the-snow routes and play areas in LAUs; restriction on actions that degrade or compromise landscape connectivity or linkage areas; the requirement that trails, roads, and ski-lift termini be designed to direct use away from diurnal security habitat; and the evaluation of permits that promote snow compacting activities.

Off-Road Vehicles (ORVs)

Management Actions

Existing ORV designations completed in 1981 on one-half of the FO will be continued. Designations will

be completed on the remaining areas of public lands. ORV management will focus more intensive management on those management units having crucial wildlife values, significant visual resources, high watershed sensitivity, and outstanding natural character. Intensive management will limit ORV use to designated roads and vehicle routes and impose seasonal closures (from approximately December through June) on areas or roads where vehicle use is totally incompatible with other resource values. ORV use in the remainder of the FO will be limited to existing roads and vehicle routes, except for the performance of necessary tasks. Examples include hunters retrieving big game harvests, repairing range improvements, managing livestock, and mineral activities where surface disturbance does not total more than five acres.

Off-road vehicle use in both the Dubois Area and East Fork Management Units will be limited to existing roads and vehicle routes.

Effects Analysis

ORV use is limited to existing roads, and thus is not authorized in the FO area. The Conservation Measures in place for all activities include the assessment of habitat in suitable and unsuitable condition and the ensuing limitations on percentage of disturbance allowable to habitat as specified in the LCAS (Ruediger et al. 2000).

Determination

Implementation of ORV management actions, as presented in the Lander RMP (1987a), is **not likely to adversely affect** the lynx due to **insignificant effect**. This determination is based on the fact that ORV use is only allowed on existing roads and trails in this FO. Very minimal impacts might occur if an ORV traveled into lynx habitat to perform necessary tasks, and the existing Conservation Measures in place will prevent adverse effects from occurring to lynx or their habitat.

Cultural and Natural History Management

Management Action

In the Dubois area, the only listed cultural and natural history activity is the Warm Springs Canyon flume, natural bridge, and geyser. These will receive enhanced protection. A management plan will be completed for the Warm Springs Canyon flume in the Dubois Area Management Unit, following a study of stabilization needs of the flume.

Effects Analysis

Actions associated with cultural and natural history resource management may occur in the Dubois areas. Like all other surface disturbing activities, cultural resource management actions would have to analyze impacts to threatened and endangered species and their habitat, and would be subject to the BLM Mitigation Guidelines for Surface Disturbing and Disruptive Activities. The BLM performs inventory activities as well as land management activities. During inventory activities, the BLM inventories, categorizes, and preserves cultural resources; conducts field activities; performs excavations; maps and collects surface materials; researches records; and photographs sites and cultural resources. Inventory data collection activities are used for documentation and development of impact minimization plans before other resource program surface-disturbing activities may take place. Inventory activities commonly entail the use of hand tools, power tools, heavy machinery, vehicle use and localized human activity. Inventories are divided into Class I, Class II, and Class III inventories. The BLM does cultural resource inventories normally in response to surface-disturbing projects. Intensity varies between

inventories. Inventories may involve 2-7 individuals and trucks, and may last from one day to several weeks.

Cultural resource land management activities involve managing sites for scientific, public, and sociocultural use; developing interpretive sites; restricting certain land uses; closing certain areas to exploration; prohibiting some surface-disturbing activities; preparing interpretive materials; and allowing the collection of certain invertebrate fossils. The cultural resource program may propose installation of protective fencing of trail segments, stabilize deteriorating buildings, acquire access to sites when necessary, perform certain surface-disturbing activities, pursue land withdrawals, pursue cooperative agreements, protect sites with avoidance stipulations or conditions of approval, and identify and interpret historic trails. Cultural resource interpretive sites, such as historic trails or rock art sites, may be developed to provide public benefits such as scenic overlooks, signs, and walking trails.

Determination

Implementation of cultural resource management actions, as presented in the Lander RMP (1987a), is **not likely to adversely affect** the lynx, due to **discountable effects**. This determination is based on the relatively small amount of suitable lynx habitat on BLM-administered lands, the protections in place for threatened and endangered species and lynx conservation measures, and the low potential for cultural resource management actions to take place within lynx habitat or LAUs that could cause harassment, displacement, injury, and mortality of lynx.

Fire Management

Management Action

Approximately 2% of the lands administered by the BLM in the Lander FO will be under full fire suppression, with no equipment restrictions. Full fire suppression management has the objective of suppressing all wildfires as quickly as possible with all available resources. This prescription applies to the East Fork and Dubois Area Management Units. Approximately 60% of the lands administered by the BLM will have full suppression of wildfires with limited or restricted use of heavy equipment. This does not preclude the use of heavy equipment, such as bulldozers, but does limit their use on initial attack and requires fire authorities to analyze a fire situation critically before committing heavy equipment to a fire. Approximately 38% of the public lands in the FO will be under limited suppression of wildfires. There will be no initial attack on the fire and an observer will monitor a wildfire to determine if management objectives are met. Suppression of wildfire will occur when the fire (a) exceeds or has the potential to exceed the size specified in a predetermined plan, (b) threatens private property, (c) threatens man-made structures, or (d) threatens human life. Prescribed burns will be allowed in all management units.

Effects Analysis

Fire management actions, particularly actions associated with wildfire suppression and prescribed fire, whether planned or unplanned, have the potential to occur in habitats occupied by lynx. Fire exclusion alters the natural mosaic of successional stages that promote the mixture of denning and foraging habitats on the landscape level. This limits the function of fire in perpetuating the vegetation conditions that are optimal for hares and lynx. Road construction associated with fire suppression can lead to increased access into higher altitude sites by generalist predators such as coyotes, wolves, and bobcats. These species can be predators and competitors with lynx. However, the lynx habitat on the BLM-administered lands occurs at the lower elevations within the LAUs. Those BLM portions of the LAUs are considered urban-interface because of the proximity to the town of Dubois and the large proportion of private lands

intermixed with the BLM which have year-long or seasonal residences. BLM lands in the Dubois area have very little, if any, denning habitat.

Prescribed burning, construction of firelines, use of off-road vehicles, and use of hand tools and heavy equipment all have the potential for disturbing lynx and may negatively affect lynx behavior by causing them to abandon or avoid habitats. In addition, terrestrial habitats, including lynx foraging, denning, and linkage habitats, may be disturbed and altered through these activities. However, unlike wild fire, prescribed fire is considered a surface disturbing activity subject to NEPA and may receive mitigation measures as outlined in the BLM Mitigation Guidelines for Surface Disturbing and Disruptive Activities. The restriction that no activities that negatively impact threatened or endangered species would be allowed applies to prescribed fire and other kinds of mechanical and chemical vegetative controls. Prescribed fires could be used to increase foraging habitat by improving snowshoe hare habitat. Restrictions on the type of tools and heavy equipment that are used, the time of year, the use of off-road vehicles, the number of people on the project, etc., could be implemented to ensure that prescribed fires have as few negative impacts as possible, and possibly have positive impacts on lynx or hares.

Conservation Measures in place (Section 4) include the assessment of habitat in suitable and unsuitable condition and the ensuing limitations on percentage of disturbance allowable to habitat, as specified in the LCAS (Ruediger et al. 2000). In addition, post-disturbance assessments are required prior to salvage to evaluate potential for lynx denning and foraging habitat, and the minimization of roads and fire lines as well as the requirement of revegetation after fire suppression activities. These measures will provide protection for lynx and their habitat.

Determination

Implementation of fire management actions, as presented in Lander RMP (1987a), is **not likely to adversely affect** the lynx, due to **insignificant effects**. This determination is based on the protection provided by the Conservation Measures listed in Section 4, which follow the LCAS (Ruediger et al. 2000), the minimal amount of suitable lynx habitat on BLM-administered lands, the protections in place for threatened and endangered species, and the low potential for fire management actions to cause harassment, displacement, injury, and mortality of lynx. In the event of a wildfire and immediate suppression is required in an LAU, as many conservation measures as possible will be applied that do not hinder safety or property protection. The USFWS will be contacted and emergency consultation will take place at the earliest possible time if LAUs or lynx habitat are affected/impacted.

Access Management

Management Action

Access roads no longer needed would be rehabilitated, as outlined in the RMP. Negotiations with private landowners concerning BLM access easements will be proposed for areas where public or administrative access is or will be needed.

The public lands in the East Fork Management Unit have adequate public access. The existing transportation system will be maintained.

The Tappan Creek Road in the Dubois Area Management Unit is not available for public access. The public lands in the management unit are largely land-locked. Easements on this road will provide public access to several hundred acres of public land and will tie into the national forest land. Legal access will provide important access for hunting and sightseeing. This road will be seasonally closed (November 20

through April 15) because the area is an important elk migration corridor. Tappan Creek Road was the only easement need identified in the RMP for the entire Dubois area.

Effects Analysis

Development of new and expansion of existing access to lands administered by BLM may detrimentally influence lynx behavior or alter suitable denning, travel, or foraging habitats. Negotiations of new easements are considered surface disturbing activities subject to NEPA and may receive protective measures as outlined in the BLM Mitigation Guidelines for Surface Disturbing and Disruptive Activities. The restriction that no activities that negatively impact threatened or endangered species would be allowed applies to easements also. There are more skilled map readers or users of GPS since the RMP was signed which has enabled recreation users to legally access portions of these lands by foot or horseback. Adjacent U.S. Forest Service and some private landowners provide limited access.

Determination

Implementation of access management actions, as presented in the Lander RMP (1987a), is **not likely to adversely affect** the lynx, due to **discountable effects**. This determination is based on the minimal amount of suitable lynx habitat on BLM-administered lands, the protections in place for threatened and endangered species, and the low potential for easement acquisitions to cause harassment, displacement, injury, and mortality of lynx.

Soils, Water, and Air Management

Management Action

The public lands within the Lander FO will be managed in a manner that will protect and improve the quality of the soil, water and air resources associated with the public lands. This will include project and plan review to ensure proper consideration of these resources and that enhancement opportunities are not overlooked. Also, monitoring of soil erosion, water quality and air quality will be conducted as necessary to track the effectiveness of specific projects and management schemes.

Effects Analysis

Air Quality Management: Currently there are no air quality monitoring stations within any lynx habitat or LAUs in the Cody FO area.

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

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

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

The above types of actions associated with watershed management would take place very rarely, if at all within any lynx habitats or LAUs and would likely have minimal or no negative impacts on lynx behavior or their denning or foraging habitats. The activities associated with this management action are infrequent, small in scale, and not likely to occur in lynx habitat. Actions associated with watershed management are likely to improve riparian vegetation and habitat for lynx and their prey.

Soil Resources Management:

The implementation of soils management involves planning for disallowing actions that will cause soil erosion and modifying others to avoid soil erosion. There are no impacts from this management action on lynx. However, activities associated with soil mapping/sampling may include surveying, core drilling, use of pick-up truck mounted soil augers and core samplers (1 ½" to 2" in diameter) and back-hoes (usually around 12-24" in width and pits may be up to 6' deep) for digging soil characterization pits and trenches, using hand held shovels to dig holes or pits, and associated human and vehicle disturbances. These trenches are backfilled and revegetated/reseeded when surveys are complete. Disturbances are usually very small of short duration in nature and will reclaim to the native terrain/vegetation quickly. Surface soil erosion studies may also be conducted. These soil resource related activities in the planning area are mainly in support of other programs. Soil mapping and identification may require the digging of trenches to identify and measure soil horizons below the surface. Other surface disturbing activities associated with soil resources may include reclamation of abandoned mine lands (AML) and open shafts, removal of waste rock in floodplains or streams, or cleanup of tailings. These reclamation programs are covered under the hazardous materials section of this document.

Determination

Air Quality Management: No monitoring stations are currently in any lynx LAUs on BLM lands in the Cody FO. Implementation of air quality management actions, as presented in the Lander RMP (1987a), will have **no effect** on the lynx, due to a lack of overlap of management activities and lynx habitat.

Soils and Water Resources Management: Implementation of soil and water resource management actions, as presented in the Lander RMP (1987a), is **not likely to adversely affect** the lynx, due to **discountable effects**. This determination is based on the Conservation Measures in place that will preclude adverse effects to the lynx or its habitat and will minimize or remove impacts to lynx, lynx habitat, or LAUs. Management of soil and water resources is not expected to detrimentally impact lynx behavior or suitable denning or foraging areas. The activities associated with this management action are infrequent, localized or small in scale, and generally not likely to occur in lynx habitat. Implementation

of soil and water resource management actions may maintain or improve the condition of some habitats and therefore may result in secondary beneficial effects to foraging or linkage habitats.

Livestock Grazing Management

Management Action

The Lander FO has two grazing study areas: Green Mountain and Gas Hills. Rangeland program summaries (RPSs) for these study areas are included in the RMP. There are 291 allotments in the Lander FO. Category M allotments comprise 29% of the allotments and 27% of the acreage in the FO. Category C allotments comprise 28% of the allotments and 4% of the acreage in the FO. Category I allotments comprise 43% of the allotments and 69% of the acreage in the FO.

Management decisions affecting grazing use will be made when monitoring data are sufficient to support those decisions. They may include changing livestock numbers, periods of use, or a combination of both. Monitoring will be a continuing process to assure that any changes in grazing use accomplish the objectives. If monitoring studies indicate a need to further modify periods of use, livestock numbers, class of livestock, or grazing systems, these adjustments will be made after consultation with the affected livestock operators and any other affected parties.

Effects Analysis

Domestic livestock grazing in riparian areas in suitable lynx habitat can alter the structure and composition of aspen and riparian shrubs that hares depend upon. Cattle and sheep grazing in excess of the designated amount of forage may create competition for forage and reduction in escape cover for hares and other small mammals. Light to moderate grazing will not be likely to substantively reduce forage for snowshoe hares.

Grazing in shrub-steppe communities within the elevational range of lynx also may have impacts on lynx. This occurs when cattle graze on the intermixed grassland understory, which, especially with spring grazing, encourages growth of the sage. Mid- to late seral stages and a lack of heavy grazing have been suggested as the goal in managing shrub steplands for lynx (Ruediger et al. 2000), but the availability of a well-developed understory of grasses is also important. Sage grouse and jackrabbits, both alternate prey species for lynx, prefer the edges created by interspersed grassland patches within the shrub steppe rather than solid sagebrush.

Predator control activities conducted by permittees on the range they graze, such as shooting, trapping, and poisoning to control coyotes, cougar, bear, and bobcat, may lead to incidental lynx mortality especially in the higher elevation allotments. This event has a low likelihood of occurring and causing lynx deaths.

Grazing also may lead to other adverse environmental effects, including increased soil erosion, degradation of stream bank conditions, introduction of noxious weeds, and the reduction of viable aspen and riparian shrub recruitment (Chaney et al. 1990; Kaufman and Krueger 1984; Menke et al. 1996). Modifications in grazing to improve riparian habitats, including a reduction in grazing, fencing of riparian areas, weed control, and other improvements in riparian ecological function may benefit the lynx.

Determination

Implementation of livestock grazing management actions, as presented in the Lander RMP (1987a), is **not likely to adversely affect** the lynx, due to **insignificant effects**. This determination is based on the small surface area that would be likely to have higher grazing pressure within the small area covered by allotments in suitable lynx habitat in this FO and the Conservation Measures in place that will preclude adverse effects to the lynx or its habitat.

Conservation Measures in place (Section 4) for livestock grazing management include the assessment of habitat in suitable and unsuitable condition and the ensuing limitations on percentage of disturbance allowable to habitat as specified in the LCAS (Ruediger et al. 2000), as well as: restrictions on livestock in openings created by fire or timber harvest; evaluation and careful management of grazing in aspen stands, shrub-steppe communities, and riparian areas; restrictions on over-snow access; requirement that predator control activities be conducted by Wildlife Services through a formal Section 7 consultation; and that weed assessments and control be conducted so as to optimize snowshoe hare habitat in high-elevation riparian areas.

Wild Horse Management

Management Action

Seven wild horse herd management areas have been designated in the Lander FO; no wild horse management areas occur in the Dubois area. Wild horse herd management plans will be developed in Category I Allotments that will specify necessary measures to maintain a healthy, viable herd that is consistent with multiple-use objectives for the allotment. The 1979 population level of wild horses will be set as the maximum level for an interim population level. Wild horses will be monitored, along with the habitat, to allow further adjustments as necessary to maintain viable herds and satisfactory range condition. As funding allows, horse numbers will be reduced with roundup expected every 5 years. All horses will be removed from the East Beaver Allotment number 1801. Appropriate Management Levels were established in the RMP for the Environmental Assessments for the Evaluation of Wild Horse Herd Areas completed in 1993 and 1994. The upper and lower AMLs are 50-100 for Dishpan Butte Herd; 60-100 for Conant Creek Herd; 50-86 for Rock Creek Mountain Herd; 160-250 for Muskrat Basin Herd; 60-82 for Antelope Hills/Cyclone Rim Herd; 65-100 for Crooks Mountain Herd; and 170-300 for Green Mountain Herd.

Effects Analysis

No herds of wild and free-roaming horses occur in the Dubois area of the Lander FO. Actions associated with wild horse management are expected to be limited to occasional herding, corralling, and transporting of horses. Management activities of wild horses in these seven areas would not affect lynx as all seven areas are outside of LAUs. It is unlikely that lynx would travel through the open country where the wild horse areas occur. So, wild horse activities are not expected to detrimentally impact Canada lynx behavior or foraging or denning habitats.

Determination

As no herds of wild and free-roaming horses occur in the Dubois area of the Lander FO, wild horse management will have **no effect** on the lynx. This determination is based on the fact that no lynx habitat or LAUs occur within wild horse areas. Lynx would be extremely unlikely to travel through the lower-

elevation habitat that encompasses these wild horse areas, as they are outside of normal habitat or LAUs and therefore be adversely affected by actions associated with management of wild horses.

Wild and Scenic River Management

Management Action

The objectives of wild and scenic rivers management for public lands administered by the BLM that meet the wild and scenic rivers suitability factors are to maintain or enhance their outstandingly remarkable values and wild and scenic rivers (WSR) classifications until Congress considers them for possible designation.

Effects Analysis

Wild and Scenic Rivers Management activities of the BLM include studying segments of the river for potential classification by Congress. The suitable determination is based on the uniqueness of the diverse land resources and their regional and national significance, making them worthy of any future consideration for addition to the WSR system. The designation of WSR status is simply a designation, and tempers or stipulates from a WSR resource viewpoint, specific protections or management of other BLM authorized actions. WSR classifications, in and of themselves, do not place on-the-ground projects or ground disturbing activities. Generally, WSR status is a beneficial impact on wildlife and plant species.

Determination

Implementation of WSR management activities, as presented in the Lander RMP (1987a), will have **no effect** on the lynx. This determination is based on the fact that no lynx habitat or LAUs occur within any BLM wild and scenic river segment within the planning area.

Wilderness Management

Management Action

Five management units in the Lander FO contain wilderness study areas (WSAs). These units encompass 8 WSAs totaling 52,987 acres and include Sweetwater Canyon, Sweetwater Rocks (four WSAs), Whiskey Mountain, Dubois Badlands, and Cooper Mountain.

Effects Analysis

Management actions associated with wilderness management will not result in detrimental impacts to lynx behavior or their habitats. None of the LAUs contain land within a WSA, although the northwest boundary of the Dubois Badlands WSA and a portion of the southeastern boundary of the BLM-Frontier LAU are the same for about a 5/8 mile overlap. These actions could result in positive effects to lynx by limiting harassment and disturbance to suitable denning, travel, and foraging areas.

Determination

Implementation of the wilderness management actions, as presented in the Lander RMP (1987a), is **not likely to adversely affect** the lynx, due to **beneficial effects**. This determination is based on the potential

that these actions will limit the harassment and displacement of lynx and maintain or protect suitable lynx habitats.

Areas of Critical Environmental Concern

Management Action

Approximately 117,000 acres, representing 4.7% of the Lander FO will be designated as areas of critical environmental concern (ACECs) and will require intensive management of all activities. The following areas will be designated ACEC in the Lander FO:

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

Significant sites and segments along the Oregon/Mormon Pioneer Natural Historic Trails will be designated an ACEC and are located within the Beaver Creek and Gas Hills Management Units. These sites and segments include approximately 22,600 acres of protective corridor on surface lands administered by BLM; approximately 3,100 acres of current withdrawal or proposed withdrawals; and approximately 7,000 acres of trail corridor on split estate lands. There are approximately 780 acres of partially impacted sites and segments on surface lands administered by BLM that are included in the ACEC but will be considered on a case-by-case basis and approximately 450 acres on split estate.

Effects Analysis

This program analysis is for the creation and management of ACECs. Management actions authorized within these ACECs, but not associated with ACEC management, will be analyzed under that specific activity. There are no impacts to lynx in the establishment of an ACEC and ACEC management is generally more restrictive in nature, protecting lynx and their habitats. Both BLM – East Fork and BLM – Wiggins LAUs contain public lands within the East Fork ACEC, BLM – Wiggins LAU contains lands within the Dubois Badlands ACEC, and BLM – Frontier LAU shares about 5/8 of a mile off public lands along its southeast border with the Dubois Badlands ACEC. Management actions authorized within these ACECs, but not associated with ACEC management, will be analyzed under that specific activity. There are no specific impacts to lynx in the establishment of an ACEC and ACEC management is generally more restrictive in nature, protecting lynx and their habitats.

Determination

Implementation of ACEC management actions, as presented in the Lander RMP (1987a), is **not likely to adversely affect** the lynx, due to **beneficial effects**, because the act of designation of an ACEC has no disadvantageous impacts on lynx and ACEC management is more restrictive in nature, protecting lynx and their habitats.

Summary of Determinations

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

Resource	Determination
Energy and Minerals	Not likely to adversely affect, due to insignificant effects
Fish and Wildlife	Not likely to adversely affect, due to insignificant effects
Forest	Not likely to adversely affect, due to insignificant effects
Land Ownership and Utilities	Not likely to adversely affect, due to insignificant effects
Recreation	Not likely to adversely affect, due to insignificant effects
Off-Road Vehicles	Not likely to adversely affect, due to insignificant effects
Cultural and Natural History	Not likely to adversely affect, due to discountable effects
Fire	Not likely to adversely affect, due to insignificant effects
Access	Not likely to adversely affect, due to discountable effects
Soils and Water	Not likely to adversely affect, due to discountable effects
Air	No effect
Livestock Grazing	Not likely to adversely affect, due to insignificant effects
Wild Horses	No effect
Wild & Scenic Rivers	No effect
Wilderness	Not likely to adversely affect, due to beneficial effects
ACECs	Not likely to adversely affect, due to beneficial effects

Cumulative Effects

Cumulative effects include future State, tribal, local, or private actions that are reasonably certain to occur in the Lander FO. Potential effects that could affect lynx or their habitats in the Lander FO include the following:

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

Some of these activities are situated near important lynx habitats or linkages on BLM-administered lands. Certain components of these projects, if completed, could directly or indirectly affect lynx or their habitats. In addition to the cumulative impacts resulting from the BLM activities described previously, implementation of the Lander RMP could add further impacts to the lynx that may result from current non-federal actions.