United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
764 Horizon Drive, Building B
Grand Junction, Colorado 81506-3946

IN REPLY REFER TO:
ES/GJ-6-CO-03-F-021
MS 65412 GJ

February 24, 2004

Richard C. Stem, Deputy Regional Forester
U.S. Forest Service, Rocky Mountain Region
P.O. Box 25127
Lakewood, Colorado 80225-0127

Dear Mr. Stem:

This document transmits the Fish and Wildlife Service's (Service) biological opinion based on our review of the 24 proposed Forest Service (USFS) actions located throughout Colorado, and their effects on the threatened Canada lynx (*Lynx canadensis*). Your November 7, 2003, letter requesting our concurrence on the effects of the proposed 24 batched projects on the Canada lynx was received in our office on November 10, 2003. This biological opinion was prepared in accordance with section 7 of the Endangered Species Act (16 U.S.C. 1531 *et seq*.).

As you may already know, the District Court for the District of Columbia issued an order on December 26, 2002, that enjoins the Service from issuing any written concurrence[s] that actions proposed by any Federal agencies "may affect, but are not likely to adversely affect" the threatened Canada lynx. Until further notice, all consultations concerning effects to the Canada lynx must be conducted in accordance with the direction of the Court. Specifically, any actions subject to consultation that may affect the Canada lynx require formal consultation as described in 50 CFR 402.14 and preparation of a biological opinion that addresses how the proposed action is expected to affect the Canada lynx in order to complete the procedural requirements of section 7 of the Endangered Species Act (ESA).

This biological opinion (BO) is based primarily on our review of the November 7, 2003, twenty-four batched biological assessments (BA) regarding the effects of the proposed actions on Canada lynx. We have received BAs from the Arapahoe-Roosevelt National Forest (ARNF), Routt National Forest (RNF), Pike-San Isabel National Forest (PSNF), White River National Forest (WRNF) Rio Grande National Forest (RGNF), San Juan National Forest (SJNF), Grand Mesa, Uncompahgre, and Gunnison National Forests (GMUG). A complete administrative record of this consultation is on file at the Grand Junction Field Office.

Consultation History

Sun Down Bowl Chair 5 Upgrade

On December 5, 2003, the USFS withdrew the new lift component of this project to be in compliance with the Vail Category III decision (ES/GJ-6-CO-98-F-023). This BO will only analyze the effects of the Chair 5 upgrade aspect of the BA.

On May 31, 2000, the Vail Ski Area's (VSA) existing winter and summer operations plan, including those in Sun Down and Sun Up Bowls, received a "not likely to adversely affect" concurrence determination from the Service. There have been no substantive proposed changes to resort operations since that determination, although minor summer construction projects have completed informal consultation (e.g., Doerr 2001, Phinney 2002, Thompson 2002). There has been no prior informal or formal consultation with the Service on the proposed project. An updated list of federally threatened, endangered, proposed, and candidate species that occur on the Holy Cross Ranger District of the WRNF was received from the Service on June 9, 2003.

Tiny Beaver Commercial Firewood Sale

The RGNF completed a BA (referred to as the Small Sales BA) that covered a variety of small projects that the RGNF routinely conducts. This BA was screened for blanket concurrence on June 25, 2001, and reported to the Service on December 7, 2001, as part of the quarterly lynx audit reports. The BA recommended that site-specific analyses be conducted for commercial firewood sales.

Pogue and Crystal Lakes Commercial Firewood Sale

The RGNF completed a BA (referred to as the Small Sales BA) that covered a variety of small projects that the RGNF routinely conducts. This BA was screened for blanket concurrence on June 25, 2001, and reported to the Service on December 7, 2001, as part of the quarterly lynx audit reports. The BA recommended that site-specific analyses be conducted for commercial firewood sales.

Rito Hondo and Cold Springs Fuels Treatment

No previous section 7 consultations have been conducted for the Rito Hondo or Cold Springs Fuels Treatment Projects or any non-related projects within the same general planning areas. The original consultation for the 1997 San Juan-Rio Grande Programmatic Fire EA was submitted to the Service August 26, 1996. A BO (ES-6-RO-95-F-001-GJ141) and revised BO (ES/GJ-6-CO-96-F-020) concerning aquatic species were received by the USFS on October 28, 1996 and December 23, 1996, respectively. An additional informal consultation concurrence letter concerning the Mexican spotted owl and the southwestern willow flycatcher was received on January 22, 1997. The Service concurred with the "no effect" determination for the southwestern willow flycatcher based on established riparian buffer zones of 0.5 miles for occupied and suitable but unoccupied habitat, respectively. The Service also concurred with the "may affect, not likely to adversely affect" determination for the Mexican spotted owl.

Consultation was not conducted for the Canada lynx since it was not listed under the ESA until March 2000.

The BA for the 1997 San Juan-Rio Grande Programmatic Fire EA was revised on August 9, 2002, primarily due to the listing of the Canada lynx and the need to update information concerning the Uncompahgre fritillary butterfly and the southwestern willow flycatcher (USDA Forest Service 2002). The purpose of the BA was to analyze and disclose the potential effects of the 1997 Fire EA and provide a tool by which fire projects could be evaluated for consistency with the Lynx Conservation Assessment and Strategy (LCAS, Ruediger et al. 2000) and incorporate those standards and guidelines into the overall fire program. A concurrence letter was received from the Service on September 19, 2002, that agreed with the "no effect" determination for the Uncompahgre fritillary butterfly and the "may affect, but not likely to adversely affect" determination for the Canada lynx. The programmatic checklist developed with the 2002 Revised Fire BA also incorporated information from Sogge et al. (1997) into the determination of effects for the southwestern willow flycatcher and (per agreement with the Service) adjusted the linear distance that a prescribed fire should be maintained from occupied and suitable but unoccupied nesting habitat from 1.5 mile to 200 meters (656 feet).

The Rito Hondo and Cold Springs Fuels Treatment Projects both occur within the Rito-Archuleta Lynx Analysis Unit (LAU). One previous consultation occurred in this LAU for the Grouse Salvage Timber Sale under the Programmatic Section 7 Concurrence Agreement (May 30, 2001) through the use of the Southern Rocky Mountains Lynx Project Decision Tree. The Service concurred with the "may affect, not likely to adversely affect" determination for this project on March 25, 2002.

Consultation for the La Manga Beetle Salvage Sale and Spruce Hole Blowdown Small Sale, also within the Rito-Archuleta LAU, was included in the batched consultation package submitted to the Service on April 2, 2003. A final BO was received by the USFS on July 2, 2003, which concurred with the "may affect, not likely to adversely affect" determination for this project (ES/GJ-6-CO-03-F-006). The post-project condition derived from this latter consultation package will be used as the environmental baseline from which to calculate changes to the Rito-Archuleta LAU.

An additional BA concerning livestock grazing annual operating plans for grazing allotments that contain suitable habitat for the southwestern willow flycatcher on National Forest Systems land in southwestern Colorado was received by the Service on July 18, 1995. A letter of concurrence was received by the USFS on September 15, 1995, that concurred with the "may affect, not likely to adversely affect" determination due to the inclusion of several conservation measures applicable to livestock grazing. An amendment to the 1995 grazing permit BA was received by the Service in June 1997. The purpose of the 1997 amendment was to update and change some aspects of the 1995 BA as related to survey requirements, cowbird trapping, timing of grazing, and habitat mapping. A letter dated July 17, 1997, was sent by the Service concurring with the "may affect, not likely to adversely affect" determination.

An update to the 1996 RGNF Land and Resource Management Plan (Forest Plan) BA was completed in April 2003 in support of the proposed Environmental Assessment to add Management Indicator Species (MIS) into the 1996 Forest Plan. The BA was received by the

Service in April 2003. A final BO (ES/GJ-6-CO-03-F-012) was sent to the USFS on September 16, 2003. Although the mountain plover was included in the BA, it was not addressed further due to the recent finding that it is not warranted for listing under the ESA.

Shilling Springs Fuels Treatment

There has been no previous section 7 consultations regarding the Shilling Springs Fuels Treatment Projects or for any non-related projects within the same general planning areas (e.g., La Jara Lynx Analysis Unit (LAU)). The original consultation for the 1997 San Juan-Rio Grande Programmatic Fire Environmental Assessment (EA) was submitted to the Service on August 26, 1996. A BO (ES-6-RO-95-F-001-GJ141) and revised BO (ES/GJ-6-CO-96-F-020) concerning aquatic species were received on October 28, 1996, and December 23, 1996, respectively. An additional informal consultation concurrence letter concerning the Mexican spotted owl and the southwestern willow flycatcher was received on January 22, 1997. The Service concurred with the "no effect" determination for the southwestern willow flycatcher based on established riparian buffer zones of 1.5 miles for occupied and suitable but unoccupied habitat, respectively. The Service also concurred with the "may affect, not likely to adversely affect" determination for the Mexican spotted owl. There was no consultation for the Canada lynx since it was not listed under the ESA until March 2000.

The BA for the 1997 San Juan-Rio Grande Programmatic Fire EA was revised on August 9, 2002, primarily due to the listing of the Canada lynx and the need to update information concerning the Uncompahgre fritillary butterfly and the southwestern willow flycatcher. The purpose of this BA was to analyze and disclose the potential effects of the 1997 Fire EA and provide a tool by which fire projects could be evaluated for consistency with the Lynx Conservation Assessment and Strategy (LCAS, Ruediger et al. 2000) and incorporate those standards and guidelines into the overall fire program. A concurrence letter was received from the Service on September 19, 2002, that agreed with the "no effect" determination for the Uncompahgre fritillary butterfly and the "may affect, but not likely to adversely affect" determination for the Canada lynx. The programmatic checklist developed with the 2002 Revised Fire BA also incorporated information from Sogge et al. (1997) into the determination of effects for the southwestern willow flycatcher and, per agreement with the Service, adjusted the linear distance that a prescribed fire should be maintained from occupied and suitable but unoccupied nesting habitat from 1.5 miles to 200 meters (656 feet).

Horse Creek Timber Sale

There is no consultation history on this project.

Langlas Draw Salvage

On June 6, 2003, a district-by-district list of federally listed species for the WRNF was received by Keith Giezentanner as part of a "Level 1" consultation process among Federal agencies. This current list for the Blanco Ranger District is used for this BA. There has been no prior section 7 consultation regarding this project.

Stampy Timber Sale

A list of federally threatened, endangered, proposed, and candidate species that occur in the Holy Cross Ranger District on the WRNF was received on June 9, 2003, as an updated list through the streamlined consultation process. There is no consultation history specific to this project.

Roaring Fork Prescribed Fire

On June 6, 2003, the Service provided the Rifle Ranger District verbal concurrence for a species list to address under section 7 of the ESA, which included the Canada lynx.

Grand Lake Trail Groomers (GLTG) and Bombardier

On January 8, 2002, the Sulphur Ranger District prepared a map of snow compaction routes, including those areas currently used by GLTG, Bombardier, and by the public. These maps were submitted to the Regional Office for inclusion in the formal consultation packet for the Region-wide Forest Plan Amendment process for lynx.

The project area is within the Upper Colorado LAU. Other project consultations within the Upper Colorado LAU include the:

- Kawubunga timber sale: the July 6, 2001, screens were used as the basis for a BA with a determination of Not Likely to Adversely Affect (NLAA) for lynx.
- Mountain Parks Electric operations: the July 6, 2001, screens were used as the basis for a BA with a determination of Not Likely to Adversely Affect (NLAA) for lynx.

Within the Upper Colorado LAU, the following project consultation is in progress:

- Arapaho National Recreation Area (ANRA) Forest Health and Fuels Reduction Project.

American Avalanche Special Use Permit (SUP)

In the vicinity of the proposed project there has been previous consultation between the Service, USFS and the Colorado Department of Transportation on improvements to U.S. Highway 40 over Berthoud pass (ES/GJ-6-CO-02-F-036). There is no consultation history specific to this project.

Timberline Trail Relocation

There is no consultation history specific to this project.

Lottis Campground Expansion

There is no consultation history specific to this project.

Northwest Colorado Snowmobile Club Special Use Permit (SUP)

On March 7, 2002, the RNF received a letter from the Service providing a list of threatened, endangered, candidate and proposed species that may be affected by the proposed action**.**

Snowmobile Trail Grooming

On June 6, 2003, the Service provided the Rifle Ranger District verbal concurrence on a list of federally protected species under the ESA. Species were identified as federally proposed, threatened, or endangered; and having the potential to occur within the Rifle and Eagle Ranger Districts of the WRNF.

Cross-country Ski Trail Grooming

On June 6 2003, the Service provided the Rifle Ranger District of the WRNF a verbal concurrence on a list of federally protected species to address under section 7 of the ESA.

Poole Right-Of-Way (ROW)

This project, also known as the Robert Poole New Road, was listed with all ongoing and pending projects in the 2000 batch consultation that was done on a regional, forest by forest, basis. This project was determined to be outside the blanket concurrence criteria.

Roach Grazing Allotments

There have been no previous consultations, or conferences with the Service specifically related to livestock grazing operations involving the Gabrielson, Grace Creek, and Forrester allotments.

In 1999, the Canyon Lakes Ranger District evaluated the environmental consequences from a proposed action in the same project area (the Roach Geographic Area) involving timber harvest, prescribed fire application, and watershed improvements (see section VIII of the BA). A threatened and endangered species biological assessment was prepared by USFS district biologists to address the potential effects from these actions on listed species and candidate species.

On March 25, 1999, the Canyon Lakes District Ranger sent a letter to the Service requesting written concurrence with the USFS biological assessment determinations for the Roach Geographic Area timber sale and prescribed fire proposed actions. All projects in the Roach area at that time were then combined and included in a batch consultation request for the Canada lynx. Written concurrence was received from the Service on May 30, 2000, on the following USFS determinations for projects in the Roach Geographic Area:

Proposed Action/Project	Determination for Canada Lynx
Timber Management	"not likely to adversely affect"
Trail Construction	OBCC – outside blanket concurrence
Prescribed Fire	"not likely to adversely affect"
Travel Management	"not likely to adversely

affect”	
Trail Head Improvements	“not likely to adversely affect”

Troublesome, Pete Gulch, Monument and Grass Grazing Allotments

A review of existing information was conducted for the project area, which included: Colorado Natural Heritage Program Data Center Records (1999-2002), USFS records for wildlife, fish and sensitive plant lists, Service species lists (December 22, 1998, and February 6, 2003), the RNF Land and Resource Management Plan, (LRMP), Colorado Division of Wildlife (CDOW) reports, aerial photograph interpretation, and review of previous management activities (recreation, timber harvest).

York Gulch Small Tracts Act (STA)

There is no consultation history specific to this project.

Faraway Land Exchange

There is no consultation history specific to this project.

Round Hill Land Exchange

In September 2001, a BA was sent to the Service initiating informal consultation.

Hahns Peak Water Coalition

The RNF received a letter from the Service providing a list of federally threatened, endangered, candidate and proposed species that might occur within the vicinity of influence of the RNF. Louanne McMartin (Service) updated this letter on February 12, 2003, as being current and accurate for federally listed species.

BIOLOGICAL OPINION

DESCRIPTION OF PROPOSED ACTION

Sun Down Bowl Chair 5 Upgrade

Chair 5 upgrade

The Vail Ski Area (VSA) proposes to replace the existing fixed grip triple chair with a detachable quad lift. The Chair 5 upgrade will affect 0.2 acres of lynx habitat (Vernon Phinney, USFS, 2003, pers. comm.). The VSA would like to begin and complete this project between May 6, and June 30, 2004.

The existing lift was installed in 1979 and has a capacity of 1,500 people per hour (pph). The replacement lift would be installed in the same lift line, although preliminary design indicates

that a minor shift of 10 feet to the west may be necessary at the bottom terminal. The upgraded lift would require minor tree removal of individual trees along wooded upper and lower portions of the existing lift line to accommodate the wider cable gauge (the width between cables) and chairs.

The upper lift corridor extends through a spruce-fir stand where the corridor has a scalloped edge ranging from 33 to 56 feet wide. To meet minimum Colorado Tram Board requirements and to avoid needing to come back every year to trim branches and remove single trees, a minimum corridor width of 42 feet is proposed. This would require the removal of less than 50 individual trees from the "tips" of the scalloped forest edge along the existing lift corridor. Two snags, both 5 inches dbh and without nest cavities, would be removed. No raptor nests are present in the affected stands.

The lower lift corridor extends through a young to mature aspen stand where approximately 100 trees would be removed. The larger number is required because many trees in this stand are in the 4 to 5 inch dbh range and because of the slight realignment of the base terminal. There are no snags large enough to support nest cavities in the clearance area. No raptor nests are present in the affected stands.

Tiny Beaver Commercial Firewood Sale

To assist in the maintenance of existing closed timber roads, the Tiny Beaver Commercial Firewood project proposes to harvest dead and blowdown trees as firewood. Estimated volume is approximately 100 to 300 cords of firewood across the road system. Dates of operation will be between June 15 and October 15 over a 3 to 5 year period, as not all areas will be open at the same time. Firewood gathering will be done with a chainsaw and pickup truck and vehicles will not be allowed more than 300 feet off system roads. Roads will be evaluated for potential adjustments to project work prior to opening for firewood cutting.

Project location and description

This proposed project is located in T. 37 N., R. 4 E., in all or parts of sections, 4, 5, 6, 7 & 8, T. 38 N., R. 4 E., in all or parts of sections 31, 32, & 33, T. 37 N., R. 3 E. in all or parts of sections 1, 2, & 12, and T. 38 N., R. 3 E. in all or parts of sections 25, 26, 35 & 36 on the Divide Ranger District of the RGNF.

Pogue and Crystal Lakes Commercial Firewood Sale

To assist in the maintence of existing closed timber roads, the Pogue and Crystal Lakes Commercial Firewood project proposes to harvest dead and blowdown trees as firewood. Estimated volume is approximately 100 to 300 cords of firewood across the road system. Dates of operation will be between June 15 and October 15 over a 3 to 5 year period. Not all areas will be open at the same time. Firewood gathering will be done with a chainsaw and pickup truck and vehicles will not be allowed more than 300 feet off system roads. Roads will be evaluated for potential adjustments to project work prior to opening for firewood cutting.

Project location and description

This proposed firewood area is located in T. 37 N., R. 4 E., in all or parts of sections, 4, 5, 6, 7 & 8, T. 38 N., R. 4 E., in all or parts of sections 31, 32, & 33, T. 37 N., R. 3 E. in all or parts of sections 1, 2, & 12, and T. 38 N., R. 3 E. in all or parts of sections 25, 26, 35 & 36 on the Divide Ranger District of the RGNF.

Rito Hondo and Cold Springs Fuels Treatment

Rito Hondo

The Rito Hondo Planning Area consists of approximately 1,427 acres on the Conejos Peak Ranger District of the RGNF. The planning area is separated into the North Rito Unit (793 acres) and the South Rito Unit (634 acres). The Rito Hondo Fuels Treatment Plan identifies four potential methods of fuels treatment that may be implemented, either singularly or combined, on different portions of the planning area. However, fuelwood harvesting has recently been dropped from the treatment proposals in the Fuels Plan. A brief description of the three methods that remain is as follows:

1) Mechanical Manipulation. Mechanical fuels reduction equipment, such as the hydroaxe, may be utilized in the northeast, east, and southeast portions of the project area where slopes do not exceed 30 percent. In general, these areas overlap the chainsaw manipulation areas and encompass approximately 228 acres. This treatment involves the reduction of pinyon pine and juniper species and, where desired, potential treatment of decadent mountain mahogany. The time period for this activity is not specifically mentioned in the Fuels Treatment Plan, but is commonly restricted to late spring through the fall periods.

2) Chainsaw Manipulation. Approximately 142 acres of the project area has been specifically delineated for juniper felling with the use of chainsaws. The primary objective of this project is to reduce the amount of standing juniper species that has encroached into ponderosa pine and grassland habitats. Junipers of all size classes will be thinned using chainsaws with stump heights no greater than six inches and slash disposal consisting of lop and scatter techniques. No vehicles will access the treatment areas. Work may be accomplished year-round if the area remains accessible.

   It should be noted that the Chainsaw Manipulation Activity was evaluated singularly in July 2003 so that some work could begin while other restrictions (i.e. prescribed burning) were in place. This activity was designed to occur outside of any threatened, endangered, or proposed species habitats and was determined to have “no effect” on any federally listed species evaluated (Randy Ghormley, USFS, pers. comm., 2003). This activity is re-evaluated in this document as an associated activity in the overall Fuels Treatment Plan due to proposed boundary changes that now border potential habitat for the southwestern willow flycatcher.

3) Prescribed Burning. Prescribed burning may occur within the total area of the South Rito and North Rito Fuels Treatment Units (1,427 acres). The primary objectives of this activity include using low-intensity prescribed fire in a mosaic burn pattern to reduce 25 to 50 percent of the ground fuels and 10 to 30 percent of the understory fuels. Fire behavior will be managed in a manner that limits flame lengths to a maximum of three feet and a spread of approximately one to three chains (66 to 198 feet) per hour. Other objectives include limiting canopy and tree bole

scorch to less than 5 percent, limiting mature tree mortality to no more than 1 per 5 acres, maintaining crown closures of 40 to 60 percent, and alleviating potential effects on riparian zones.

Forest system roads, jeep trails and natural vegetation breaks/barriers will primarily be used for the fireline perimeter; however, it is expected that some minor amount of handline will also need to be constructed to "tie-in" the perimeter. Mechanical methods (i.e., chainsaw, bull-dozer) will not be used to construct firelines. Firing methods will consist of hand-lighting dead and down fuel concentrations with drip torches. Access along fire perimeter roads both during lighting and holding/ mop-up procedures may involve ATV's, standard pick-ups and Type IV fire engines.

Cold Springs

The Cold Springs Planning Area consists of approximately 1,442 acres on the Conejos Peak Ranger District of the RGNF. This planning area shares a common boundary with the North Rito Unit and is thus being analyzed in conjunction with the Rito Hondo Fuels Treatment Project. The Cold Springs Fuels Treatment Plan identifies the same four potential methods of fuels treatment that may be implemented, either singularly or combined, as those discussed for the Rito Hondo Planning Area. However, both the fuelwood harvesting and prescribed fire treatments are dropped from this proposal. A brief description of the two treatment methods that remain is as follows:

1) Mechanical Manipulation. Mechanical fuels reduction equipment, such as the hydroaxe, may be utilized on isolated pockets of trees where slopes do not exceed 30 percent. In general, these areas overlap the chainsaw manipulation area and encompass approximately 600 acres. This treatment involves the reduction of pinyon pine, white fir, and juniper species and, where desired, potential treatment of decadent mountain mahogany. The time period for this activity is not specifically mentioned in the Fuels Treatment Plan, but is commonly restricted to late spring through the fall periods.

2) Chainsaw Manipulation. Approximately 600 acres of the project area has been specifically delineated for juniper felling with the use of chainsaws. The primary objective of this project is to reduce the amount of standing juniper species that has encroached into ponderosa pine habitats. Junipers of all size classes will be thinned using chainsaws with stump heights and slash disposal similar to that described for Rito Hondo. No vehicles will access the treatment areas. Work may be accomplished year-round if the area remains accessible.

As in Rito Hondo, the Chainsaw Manipulation Activity was evaluated singularly in July 2003 so that some work could begin while other restrictions were in place. This activity was designed to occur outside of any threatened, endangered, or proposed species habitats and was determined to have "no effect" on any federally listed species evaluated (Randy Ghormley, USFS, pers. comm. 2003). This activity is re-evaluated in this document as an associated activity in the overall Fuels Treatment Plan.

Project locations

Both the Rito Hondo and Cold Springs Fuels Treatment Planning Areas are located on the Conejos Peak Ranger District of the Rio Grande National Forest in Conejos County, Colorado. The legal for the Rito Hondo area is T. 32 N., R. 7 E., sections 5, 8, 9, and 10. The legal for the

Cold Springs area is T. 32 N., R. 7 E., sections 4 and 5 and T. 33 N., R. 7 E., sections 32 and 33. The Cold Springs Planning Area occurs immediately to the north of Rito Hondo along a common boundary between the two planning areas. Both planning areas occur approximately one to two miles south of the Conejos River and can be accessed via State Highway 17 to Forest Road 103.

Shilling Springs Fuels Treatment

The Shilling Springs Planning Area consists of four units that total approximately 1,518 acres on the Conejos Peak Ranger District of the RGNF. The Shilling Springs Fuels Treatment Plan identifies four potential methods of fuels treatment that may be implemented, either singularly or combined, on different portions of the planning area. However, fuelwood harvesting has recently been dropped from the treatment proposals in the Fuels Plan. A brief description of the three methods that remain is as follows:

1) Mechanical Manipulation. Mechanical fuels reduction equipment, such as the hydroaxe, may be utilized in the northeast, east, and southeast portions of the project area where slopes do not exceed 30 percent. In general, these areas overlap the chainsaw manipulation areas and encompass approximately 228 acres. This treatment involves the reduction of pinyon pine and juniper species and, where desired, potential treatment of decadent mountain mahogany. The time period for this activity is not specifically mentioned in the Fuels Treatment Plan, but is commonly restricted to late spring through the fall periods.

2) Chainsaw Manipulation. Approximately 600 acres of the project area has been specifically delineated for juniper felling with the use of chainsaws. The primary objective of this project is to reduce the amount of standing juniper species that has encroached into ponderosa pine and grassland habitats. Junipers of all size classes will be thinned using chainsaws with stump heights no greater than six inches and slash disposal consisting of lop and scatter techniques. No vehicles will access the treatment areas. Work may be accomplished year-round if the area remains accessible.

   It should be noted that the Chainsaw Manipulation Activity was evaluated singularly in July 2003 so that some work could begin while other restrictions (i.e. prescribed burning) were in place. This activity was designed to occur outside of any threatened, endangered, or proposed species habitats and was determined to have “no effect” on any federally listed species evaluated (Randy Ghormley, USFS, pers. comm., 2003). This activity is re-evaluated in this document as an associated activity in the overall Fuels Treatment Plan.

3) Prescribed Burning. The Shilling Springs Fuels Treatment Plan (June 10, 2003) indicates that specific locations will be identified where prescribed burning will occur. However, these areas are not identified in the Fuels Treatment Plan. Therefore, for the purposes of this analysis it will be assumed that prescribed fire may be used within all four treatment units in the Shilling Springs Planning Area (1,518 ac.). The primary objectives of the prescribed burning activity includes using low-intensity prescribed fire in a mosaic burn pattern to reduce 25 to 50 percent of the ground fuels and 10 to 30 percent of the understory fuels. Fire behavior will be managed in a manner that limits flame lengths to a maximum of three feet and a spread of approximately one to three chains (66-198 feet) per hour. Other objectives include limiting canopy and tree bole

scorch to less than 5 percent, limiting mature tree mortality to no more than 1 per 5 acres, maintaining crown closures of 40 to 60 percent, and leaving riparian zones unaffected.

Forest system roads surround the primary treatment areas and will be used as the fireline perimeter. Mechanical methods (chainsaw, dozer, etc.) will not be used to construct firelines. Firing methods will consist of hand-lighting dead and down fuel concentrations with drip torches. Access along fire perimeter roads both during lighting and holding/ mop-up procedures may involve ATV's, standard pick-ups and Type VI fire engines.

Project location

The Shilling Springs Fuels Treatment Planning Area is located on the Conejos Peak Ranger District of the Rio Grande National Forest in Conejos County, Colorado. The planning area is located between the Alamosa River, Willow Creek, Cat Creek and Canyon Creek at elevations that range between approximately 8,400 feet to 9,470 feet. The legal for this area is all or portions of T. 36 N., R. 6 E., sections 10-15.

Horse Creek Timber Sale

Project location

The Mancos-Dolores Ranger District has recently completed an environmental assessment on a proposal to harvest timber and decommission roads in the Horse Creek drainage about 7 miles northeast of the town of Mancos. The area containing the proposed activities lies mostly within the aspen and spruce-fir forest zones at T. 36 N., R. 12 W., in Montezuma County, Colorado. The project area for the Horse Creek timber sale is approximately 3,300 acres.

The purpose of the project is to progress toward meeting San Juan Forest goals and objectives, manage for healthy forest ecosystems, provide wood fiber to local industries, and deal with a lengthy road system not designed for public travel.

Four alternatives were developed to assess the variety of issues and opportunities identified. Actions connected with this proposal include: harvesting trees; regenerating cut over areas; and decommissioning, rehabilitating, and reconstructing roads. The assessment examined in detail such subjects as aspen management, forest health, effects on the local economy, impacts to wildlife, and an extensive road system.

The transportation system is in place from previous forest management activities and no additional new long-term roads will be built. Neither the analysis area nor any of the proposed actions are located within designated roadless areas.

The primary goals of this project are: 1) convert mature stands of aspen to a younger age class and set back conifer natural succession; 2) create larger contiguous stands of young aspen to better replicate natural disturbance in the aspen type; 3) make raw wood fiber available to the local timber industry; 4) reduce resource damage and improve road management by decommissioning, rehabilitating, or reconstructing forest roads; and 5) provide funding from timber sale receipts for miscellaneous resource management activities.

This alternative employs clearcutting as the exclusive harvest method. All cutting would occur in stands composed primarily of aspen with a minor component of Engelmann spruce and subalpine fir, mostly as scattered understory. Cutting prescriptions will require all trees greater than 2" diameter-at-breast-height (dbh) to be felled. All merchantable aspen 5 inch dbh and greater and all merchantable conifer 8 inch dbh and greater will be removed. Aspen regeneration is expected to sprout prolifically within 6 to 8 months of the coppice harvest. Areas of planned harvest would be placed between cutting units from the Silver Creek Timber Sale (late-1980s) so as to create larger contiguous areas of young aspen.

Approximately 165 acres of mature aspen ranging in size from 6 to 40 acres would be clearcut. Clearcutting is the optimal silvicultural treatment to achieve the desired future condition in this area. This action would yield about 2,300 million-board-feet (mbh). The project is expected to last no longer than two to three years.

Access to cutting units will be via existing road clearings to nearly all units. Most road use will be on currently open roads. There will be a need for temporarily opening of about one-quarter to one-half mile of closed roads and the construction of less than 0.25 miles of new temporary road through some spruce-fir forest type. All unclassified roads (those not maintained for long term use) and any new temporary roads will be closed and made non-drivable following the logging activity. The area is generally closed by snow from early-November to late-May. No increase in the use of the open or closed road system is expected following sale activities.

A road management objective in this alternative is to obliterate all existing "unclassified" non-system roads in the analysis area. In addition, all the local intermittent and a portion of the local constant roads would be planned for permanent closure in order to move toward Forest Plan open road density guidelines.

In accordance with the SJNF Plan, all logging activities would be prohibited during the elk calving period of May 15 through July 31 in Unit 1 and in Units 8 and 9 from May 15 through June 15 (see BA for mapped locations). In addition, all logging activities during the period of November 15 to May 1 in Unit 9 will be prohibited. This restriction is designed to prevent disturbance of potential wolverine habitat and reduce disturbance in adjacent lynx denning habitat. The appropriate timber sale contract provision for control of operations to meet these requirements will be used.

Timber harvest slash will be scattered throughout the cutting areas. It will consist of limbs, tops, and various size non-merchantable logs. To maintain habitat for small mammals, their predators, and other species of wildlife that depend on large woody debris, contract provisions speaking to slash treatment shall require that large woody material be left on site well-distributed across the cutting units. Specifically, the minimum per acre shall be 33 linear feet and at least 10 inches in diameter.

Langlas Draw Salvage

This project proposes to salvage approximately 130 to150 acres of burned timber from the Langlas Draw Fire Area. There would be approximately 0.5 miles of temporary road construction to remove the timber. Roads would be closed and obliterated upon completion of

the sale. Conventional, ground based logging equipment would be used for this project. Because burned timber deteriorates at such a rapid rate, this project would be completed as soon as possible. The majority of the timber removal would occur in the summer and fall of 2004, and in the summer and fall of 2005. There may be some additional work occurring in 2006. This work would involve obliterating and rehabbing temporary roads and landing areas. The result would be a total of three years of heavy equipment and human activity associated with this project occurring during the months of July through November.

Stampy Timber Sale

The project area is located on the Upper Eagle River of the Holy Cross Ranger District, in Eagle County, Colorado. The project area lies adjacent to US Highway 24 at an elevation of 9,200 feet in T. 7 S., R. 80 W., section 4, S.W. and section 5, N.E. S.E., S.E. N.E.

This project was initiated in response to an outbreak of mountain pine beetle in the lodgepole pine (*Pinus contorta*) trees. The need to remove the infected trees and control future outbreaks is primarily driven by three considerations: 1) safety concerns connected with dead trees next to roads, 2) aesthetic and economic concerns connected to the visual quality that would be diminished by large numbers of dead and dying trees on the mountainside along a scenic by-way, and 3) to test harvest techniques as a control for pine beetles.

1) Unit A: This unit consists of about 65 acres of lodgepole pine forest with some aspen (*Populus tremuloides*) and lies south and west of US Highway 24 and north and east of the No Name Road. The vegetation within this area is lodgepole pine mixed with aspen and small pockets of young spruce/fir understory. Beetles are infecting trees larger lodgepole pine trees about 8 inches diameter at breast height (dbh) and larger. There is little to no dead and down material in this unit.
2) Unit B: This unit consists 30 acres of mature even aged lodgepole pine trees between 7 and 13 inch dbh. There is no shrub or tree understory in this unit. There is no dead and down material in this unit. In the southwest corner of this unit there is an old borrow pit that has not been reclaimed and is used as a dump and shooting range.

Both units have a light to moderate beetle infestation and the proposed management is to treat this outbreak by cutting and removing all beetle-infected trees, removing most of the dead standing timber, and thinning the remaining live uninfected standing timber to reduce the risk of wide-scale tree mortality from potential future insect outbreaks in the area. The proposed marking guidelines would thin the lodgepole pine 7 inches and greater in diameter to a basal area of 80 to 120 square feet per acre. Patches of lodgepole pine 9 inches and greater in dbh would be thinned to a basal area of 80 to 100 square feet. The amount of removal would vary depending on the size of the trees and the current beetle infestation. The expected tree spacing after harvest will be 15 to 30 feet between trees. This will allow full sunlight to reach the forest floor and thus should encourage lodgepole pine regeneration. Clumps of uninfected larger trees will be left scattered throughout the units. The spruce trees in the understory will also be protected and retained. Lodgepole pines around remnant aspen clones will be clearcut to about 2 tree lengths out from the aspen to encourage aspen sprouting. No new roads will be required for either unit as there is more than adequate access to the units.

If there are snags available wildlife recommendations are to leave at least 6 snags per acre that are greater than 7 to 9 inches dbh. The snags may be left in clumped distributions, subject to safety requirements that will protect the loggers. The wildlife recommendations to retain snags and downed woody debris in the units above will be incorporated into the proposed action.

Roaring Fork Prescribed Fire

The Sopris Ranger District of the WRNF, and the Glenwood Springs Field Office, Bureau of Land Management (BLM), in cooperation with Colorado State Forest Service and the Colorado Division of Wildlife are proposing to conduct prescribed burning on Federal and state land to improve controllability of future wildland fires, while at the same time improving big game habitat in critical winter range.

This binary project consists of a primary ignition area and a maximum allowable area, collectively referred to as the project area. The primary ignition areas are those areas where fire crews will ignite the fuels with drip torches or drop "ping-pong" ignition fuels from a helicopter. The primary ignition area consists of 1,676 acres of National Forest System lands as well as 720 acres of BLM lands. Also included are 389 acres of adjacent State land belonging to the Christine Lakes State Wildlife Area. The maximum allowable area is the area where fire would be allowed to move on its own without requiring an immediate control response. The total maximum allowable area is 5,335 acres in size, but it is not likely that the entire area would be affected because of fuel moisture, weather, and snow conditions expected during prescription periods.

Implementation would likely begin in the spring of 2004 when snow is still present at higher elevations; however some units with adequate physical barriers may be ignited in the fall. Actual acres burned per day would be limited by state air quality regulations. It is conceivable to expect daily burning limits in the range of 500 to 2,000 acres per day. When considering the daily smoke production limitations, difficulty of ground travel through portions of the project area, and the unpredictable nature of the weather, it is likely that this project will take between 2 to 5 years to complete.

The purpose of this project is to: a) reduce fuel quantities and effective stand height in Gamble oak to reduce fire intensities and improve effectiveness of control measures, in particular aerial retardant application, b) to disrupt fuel continuity between the surrounding private land and federal lands to reduce the chance of fire moving off of or onto private land, and c) facilitate regeneration and rejuvenation of oakbrush, other shrubs, forbs and grasses, which are important food and cover species for elk and deer.

The project area is located north of the Roaring Fork River on the northwest flank of Basalt Mountain, approximately 2 miles northwest of the town of Basalt, Colorado. The legal description is T. 7 S., R. 87 W., sections 11-14, 23-26, 35, 36 and T. 7 S., R. 86 W., sections 7, 18, 19, 30, and 31. Elevation within the project area ranges from 7,000 to 9,500 feet.

Grand Lake Trail Groomers and Bombardier (GLTG)

The proposed action has two parts:

1) Renew the Challenge Cost Share Agreement (CCSA) between the USFS and GLTG for another 10 years. This agreement authorizes Trailgroomers to continue to groom 71.6 miles of snowmobile trail (14 feet wide) within the Upper Colorado LAU. The groomed system provides access to 18 openings that the public uses as "play areas." These openings range from 13 to 923 acres (of which only certain parts are within the LAU). The total area affected from play areas within the LAU is 3,961 acres (see table below).

Play Area Information

Area	Description	Acres in LAU
1	Super Chicken Hill (Gravel and Little Gravel Mountains)	1248
2	Blue Ridge and Hotdog Park	682
3	Chicken Hill (Porphyry Peaks)	923
4	Bill Creek	157
5	Lost Lake	14
6	Upper Willow Creek	32
7	Upper Gold Run	84
8	Lower Gold Run	1
9	Pony Park	203
10	Pony Park South	87
11	Pony Park East	88
12	Trail Creek	13
13	Upper Trail Creek	26
14	Stillwater	11
15	Whiskey Park	200
16	Whiskey Park West	28
17	Hatchet Park	65
18	Kawuneeche	99

GLTG does not provide a guided service, but groom the trails for public use. They also hold a Special Use Permit (SUP) for a garage facility for the groomers, just below the LAU boundary within the project area. The following operational details are included in the CCSA:

- Trailgroomers operating season runs from November 15 through April 1 annually.
- Trailgroomers will not operate off of summer roads and trails without an 18 inch snowpack.

2) Re-authorize a 5-year special use permit to Bombardier Snowmobiles to continue product testing consistent with use of the last five years under temporary permit, and using the GLTG snowmobile system and 3 of the 18 play areas (Super Chicken Hill, Chicken Hill and Blue Ridge). Product testing is designed to test new snowmobile models at high elevations and in deep powder snow. In addition, the Shadow Mountain Lake surface is used for speed testing. The following operational details are excerpted from their application:

- 90 percent of the time there will be only 2 people riding and conducting tests, with occasional 8 to 10 other representatives of Bombardier. Additional testers may also be at the test track on Shadow Mountain Lake.
- The testing does not begin until there is 2 to 3 feet of snow on the ground. They stay out of regenerating timber areas and they do not allow tracks to dig up dirt or vegetation.
- The test track on Shadow Mountain Lake is 2 miles long and 20 feet wide (4.85 acres). The track is marked with reflective stakes every 100 feet.

American Avalanche Inc. Special Use Permit (SUP)

AAI wants to continue an outfitting and guiding service and is asking for the re-issuance of a 5-year priority special use permit on the ARNF. This permit would allow AAI to continue having guided classes. Classes include two to three half-day avalanche awareness courses in the Berthoud Pass Area. Level I of the course includes skiing up Jones Pass Road to observe terrain where high avalanche danger may occur. If avalanche danger is low, the classes will ski up Pumphouse Draw to observe terrain. Level II course work would be conducted 100 yards north of Berthoud Pass parking area or along Current Creek. Classes occur from December 14 through March 31 and each class size is limited to 25 people (70 user days). The class travels no farther than 1.5 miles from parking areas.

Timberline Trail Relocation

The proposed Timberline Trail Realignment Project consists of approximately 6,684 feet of construction to relocate motorcycle, mountain bike, horse, and foot traffic to avoid resource damage resulting from the current location of the trail where it crosses Texas Creek. The new trail section will connect with the existing Texas Lakes Trail and cross Texas Creek via an existing trail bridge. The project area is located within R. 81 W., T. 14 S., sections 4 and 5.

Lottis Campground Expansion

The Lottis Campground Expansion Construction area encompasses approximately 2.8 acres located in the Taylor River drainage, 3.5 miles south and west of Taylor Park Reservoir and 0.5 miles north of the Fossil Ridge Wilderness. The existing campground and proposed expansion are south of Taylor River and east of South Lottis Creek. The project area is located approximately 16 miles northeast of Gunnison, Colorado in T. 15 S., R. 83 W., section 1, N.W. ¼ of the S.W. ¼. Elevations within the project area range from 9,100 feet to 9,120 feet.

Implementation of the Lottis Campground Expansion Construction Project is proposed for the summer of 2004. The proposed project includes a southward expansion of the existing Lottis Creek Campground that is east of South Lottis Creek increasing the existing campground area 2.8 acres and decommissioning the group camping area that is north of Forest Route 742 and east

of South Lottis Creek. Access to the expanded campground area will involve approximately 200 feet of new road construction from the main road adjacent and east of Lottis Creek. Following completion of the project no dispersed camping will be allowed within 0.25 miles of the Lottis Creek Campgrounds.

Northwest Colorado Snowmobile Club Special Use Permit (SUP)

The Craig snowmobile club marks and grooms approximately 70 miles of snowmobile trails in the Black Mountain and California Park areas. They also mark only (no grooming) 6 miles of trail in the Indian Run/Beaver Creek area of the Yampa Ranger District. The club will also host an annual snowmobile event (approximately 200 snowmobiles) that occurs in February on their existing groomed routes in the Bears Ears area.

Snowmobile Trail Grooming

The WRNF, the Rifle Snowmobile Club, and Flattoppers Inc. have entered into a Memorandum of Understanding that defines and authorizes specific responsibilities and activities associated with the portion of the Flattops Trail System upon which the Rifle Snowmobile Club and the Flattoppers Inc. operate. The MOU requires an annual operating plan that is permitted for a ten-year period. The purpose of the operating plan is to display the day-to-day activities and responsibilities of the Rifle Snowmobile Club, Flattoppers Inc. (the Clubs), and the USFS, as related to the snowmobile activities associated with the Flattops Trail System on the WRNF.

The Clubs would groom no earlier than November 15, and no later than April 15, and would cease grooming prior to these dates, if snow conditions dictate. Grooming would occur during daylight hours, up to four times per month. The Flattops Trail System is comprised of winter-only trails, however the club would be authorized to utilize motorized trail vehicles up to 2 times per year during the snow-free period to perform summer trail maintenance, with written approval by the Forest Service. Trails approved for grooming are listed in the operating plans and are illustrated in the BA. No new trails or portions of trails are to be groomed, and trails are consistent with the snow compaction baseline established in 2003. On the Rifle and Eagle Ranger Districts, the Clubs are authorized to groom up to 170 miles of trails within the analysis area.

The project area is within the southern end of the White River Plateau, also referred to as the Flattops. It encompasses National Forest Service lands in Garfield and western Eagle County, Colorado, from the Grand Hogback to just west of Derby Mesa, and south to the Forest boundary. Elevation within the analysis area ranges from 8,000 to 11,400 feet. The project area encompasses approximately 257,800 acres of National Forest Service lands and the access route along the Upper Colorado River.

Cross-country Ski Trail Grooming

A group of volunteers (cross-country skiers) has requested permission to mark and groom up to 20.8 miles of existing roads and trails for cross-country skiing in the area near the West Elk snowmobile trailhead and parking area on the Buford/New Castle Road (FDR 245) (see BA for

mapped routes). The routes would be located in a designated winter play area, T. 3 S., R. 91. W., section 31 and 32, and T. 4 S., R. 91 W., sections 4, 5, 6, 7, 8, 9, 16, 17, and 18.

The play area is included in the baseline snow compaction mapping for Canada Lynx habitat. Although this play area is currently open to snowmobiling, the roads and trails to be groomed for cross-country skiing do not receive much snowmobiling use. These trails have been sporadically used by cross-country skiers over the last several years, but use is limited because of the lack of trail signs and grooming. Trails to be marked and groomed for cross-country skiing are to be identified from the trail segments illustrated in the BA. Segments that do not connect with other trails, do not form loop trails, or are located on steep slopes will not be marked and groomed.

Grooming will take place once or twice a week, during daylight hours, between the period December 15 and March 31, depending on snow conditions. No new trails will be constructed; however, the volunteer group would be authorized to perform summer trail maintenance up to two times per year during the snow-free period, with written approval by the USFS. The marking and grooming will comply with USFS standards for winter trails and be managed under a volunteer agreement (the Agreement).

The project area is within the southern end of the White River Plateau, also referred to as the Flattops. It encompasses approximately 4,009 acres of USFS and private lands. Access to the project area is along the Buford/New Castle Road. Analysis of the affected environment will be within the Clinetop Lynx Analysis Units (LAU). National Forest Service lands are in Garfield County, Colorado, in the West Elk Creek drainage. Elevation within the analysis area ranges from 8,000 to 9,000 feet.

Poole Right-Of-Way (ROW)

The proposed Poole ROW project consists of approximately 3,600 feet of road construction to access a private in-holding in the Gold Creek drainage area north of Ohio City on the Gunnison Ranger District. The new road section will connect the Poole in-holding with USFS road 771.2B, the Sandy Hook Mine Road, which connects with USFS road 771. The project area is located within T. 50 N., R. 83 W., sections 25 and 26. The vegetation consists of mature and pole lodgepole pine with occasional individuals or pockets of aspen. The action area is the Pitkin LAU.

Roach Grazing Allotments

The Arapaho and Roosevelt National Forests, proposes to re-issue permits to currently permitted owners of ranching operations to run cattle on National Forest System lands. These permits would affect the Roach Geographic Area. This area is located in the Medicine Bow Mountain Range in the northwestern part of the Roosevelt National Forest and is within Larimer County, Colorado. This geographic area encompasses 38,158 acres of land in the headwaters of the Laramie River drainage.

The USFS would issue new 10-year term permits (2004 through 2014) allowing grazing on USFS lands by the permit holders' livestock. Four individual grazing permits would be issued to

four individual permittees to graze livestock on three range allotments known as the Gabrielson Allotment, the Grace Creek Allotment, and the Forrester Allotment.

The permits would allow up to 490 cow/calf pairs (980 total number of cattle) to be grazed on the three allotments during the months of June through September. Specific numbers of livestock and grazing seasons vary for each allotment and may be periodically (annually) adjusted through the USFS permit system (36 CFR 222.1).

Combined, the Gabrielson, Grace Creek, and Forrester allotments are considered the project area and are located entirely within the Roach Geographic Area boundaries. Allotment boundary fences for these allotments do not exactly follow surveyed boundaries of National Forest lands and the Roach Geographic Area. While this difference is noted, in the BA, the project area and affected area are essentially the same for purposes of analysis.

The temporal effects addressed in this assessment will apply to the length of the permits; in this case term permits each valid for a 10-year period (2004 to 2014), and to the corresponding allotment management plan. Upon the expiration or cancellation of the permit(s), a new analysis may be initiated for the next permit(s) in accordance with agency policy. Other factors, such as a large wildfire event, that can abruptly change environmental conditions would initiate a new analysis.

Troublesome, Pete Gulch, Monument and Grass Grazing Allotments

The proposal is to revise the existing Allotment Management Plans (AMPs) for the Troublesome, Monument, Pete Gulch, and Grass grazing allotments, (also referred to as the Troublesome Analysis Area), and continue to permit livestock grazing on active allotments. The analysis area encompasses approximately 57,999 acres of National Forest System (NFS) lands in the Troublesome Geographic Area (TGA), located in the Arapaho National Forest, which is administered by the Med Bow-Routt National Forest, Parks Ranger District. The Troublesome Geographical area is a portion of the larger Rabbit Ears Range situated along the continental divide in Colorado.

Troublesome allotment

Range analysis conducted on the allotment in 1978 estimated the grazing capacity at 390 cow/calf pairs or 1,251 Animal Months. The renewal of this permit will continue to allow the rotation of 310 cow/calf pairs on six grazing units from July 1 to October 5.

Pete Gulch allotment

In 1980, the season of use was changed to May 15 to June 30 for a total number of 150 cow/calf pairs (225 Animal Months). Four years later the revised AMP estimated the grazing capacity at 105 Animal Months. The renewal of this permit will continue to allow grazing (with an On/Off permit) of 30 cow/calf pairs from July 15 to August 20. This allotment is currently stocked at 45 Animal Months (30 cow/calf pairs) and based on the range carrying capacity and proposed season of use, could carry an additional 20 pair.

Grass allotment

The 1972 Allotment Management Plans estimated grazing capacity at 126 Animal Months or 51 cow/calf pairs from July 15 to September 30. This permit renewal will continue grazing 51 cow/calf pairs; however, stocking rate may be reduced if the 2004 grazing analysis plan estimates a lower grazing capacity.

Monument allotment

Continue grazing with the On/Off permit which provides for grazing a total of 170 cow/calf pairs for the grazing period of July 1 to September 30. The stocking rate on USFS lands is at 5 cow/calf pair with the remaining 165 pair on BLM and State lands.

York Gulch Small Tracts Act (STA)

All of the Small Tract Act (STA) lots proposed for sale are in the York Gulch area and are analyzed together in this document. For clarification, the word, project area or area, refers to all 47 lots unless a lot number is given for specific information.

The project area is located in T. 3 S., R. 73 W., sections S.W. ¼ 15 and S.E. ¼ 16 on the Clear Creek Ranger District, Arapaho National Forest, Clear Creek County, Colorado. The total acreage of the 47 lots within the project area is approximately 84 acres (with lot sizes from 0.01 acre to 16 acres) at elevations ranging from 8,800 feet to 9,200 feet. The total acreage of the 15 lots included in the Clear Creek LAU is approximately 36 acres.

The project area is located within the Yankee Hill Geographic Area, which is 27,033 acres of National Forest Lands mixed with 8,618 acres of private land. In addition, there is one 7.1 acre Management Area (MA) within the project area.

The Chinook Road bisects the area approximately in half and ends at Red Tail Ridge Road. Along the Chinook Road, on the east side, is a perennial stream. East of the stream, the section consists of dense forest of mostly lodgepole pine with some Douglas fir, Engelmann spruce and subalpine fir on steep slope facing west and northwest. On the west and north side of the Chinook Road, there are mostly scattered aspen groves, open meadow, and small patches of lodgepole pine and ponderosa pine. The meadow areas include young aspen, young ponderosa pine, juniper, maple, mountain mahogany, wild rose, and grasses/forbs. There are also some rock piles and short rock overhangs (approximately 5 to 8 feet high from the ground in steeper areas). Topside trees are scattered with some rocks and lush understory vegetation. The slopes; which face south, southeast and east; range from gentle rolling hills to steep lands. The vegetation is mostly riparian type and is spotted with willow and forbs along the unnamed perennial stream paralleling Chinook Road. Heavy forest borders the riparian area. Another perennial stream (York Gulch) is below York Gulch Road and goes through lots 101, 111, and 113. Riparian vegetation is dominant in this area and grassy meadow with scattered aspens borders the stream. None of the other lots have water sources and there are no wetlands anywhere within the project area. In addition, the sale of these lots will not change any water rights.

All roads; Chinook Road, Red Tail Ridge Road, Mule Deer Trail, and York Gulch Road (paved); are used by landowners. In the project area, there are many private properties adjacent to USFS lands. All 47 USFS lots are completely surrounded by private property.

Faraway Land Exchange

Due to the juxtaposition of private and public lands on both the non-Federal lands and Federal lands, a high potential for administration conflicts exists between the USFS and associated private landowner. On the Federal lands, irregular and/or complicated boundaries plus the lack of public access makes land management difficult or impractical for the subject properties. The non-Federal lands, all of which are completely surrounded by public lands, are at risk of becoming administrative problems due to differing land management goals and objectives of the Forest Service and the private landowners. There may also be long-term administrative conflicts regarding access to the private inholdings. This proposal would simplify current boundaries, reduce the amount of private inholdings within the National Forest boundaries, secure public access, and would generally reduce the overall administrative issues arising from the management of public lands adjacent to private lands. It would also protect resource values, such as wildlife, recreation and wilderness on the non-Federal parcels by placing them under the jurisdictional control of the USFS.

Project and site descriptions

Through this proposal, approximately 120 acres (2 parcels) of Federal lands would be conveyed to private ownership. Approximately 160 acres of non-Federal lands, all contained within one parcel, would be conveyed to Federal ownership under the administration of the GMUG. This parcel is also known as the Grove Placer. All of these lands proposed for exchange are within San Miguel County, Colorado, and the boundaries of the Norwood Ranger District. The subject parcels are more specifically described as:

	Description	Approximate Area
Federal Parcels		
Parcel A	N. W. ¼ N. E. ¼, section 18, T. 42 N., R. 10 W.	40 Acres
Parcel B	Lots 1&2, Section 18, T. 42 N., R. 10. W	80 Acres
Non-Federal Parcel		
Grove Placer	Portions: W½, section 30, T. 42 N., R. 10 W. Portions: E ½, section 25, T. 42 N., R. 11 W.	160 Acres

The Federal parcels, upon exchange would become part of the Faraway Ranch. The current management on the ranch involves outdoor education and recreation, livestock grazing and maintenance of open space. It is anticipated that the Federal lands moving into private ownership would be managed under a similar scenario and management into the foreseeable future would not deviate substantially from that currently occurring on these parcels under public ownership.

Future management of the non-Federal parcel would follow the current management area direction designated in the Forest Plan for the surrounding National Forest lands. The management area direction on these lands emphasizes management for semi-primitive motorized

recreation opportunities in a natural appearing environment; reducing conflicts between recreation and livestock uses; and vegetative treatments that enhance plant and animal diversity. The non-Federal parcel is adjacent to and actually projects into the Lizard Head Wilderness Area. Future management would need to address this addition in terms of its possible inclusion into the Wilderness System.

Site descriptions

The general project area lies on northern foothills of the Wilson Mountain range in the San Miguel watershed. Two significant tributaries to the San Miguel River, Elk Creek and Big Bear Creek, originate on the northern slopes of the Wilson Peak ridgeline and flow northward through the project area. The general landscape surrounding these parcels is characterized by large and small meadowlands interspersed with clumps of aspen and mixed aspen/conifer forest cover. With increasing elevation to the south the forest cover becomes more continuous with the coniferous component (Engelmann spruce and sub-alpine fir) dominating the forest canopy.

The Federal parcels lie at the interface between private and public lands with private lands dominating most of the area to the north, east and west. Lands to the south of these parcels are dominated by public lands administered by the Forest Service. The historic use of the general area, including both public and private lands, has been livestock grazing with some timber harvesting. The area also has provided access to the Wilson Mountains for mining, prospecting and recreation. Even though these traditional uses continue, land use and ownership patterns on the private lands in the general area have changed, to a degree, in recent years with some large ranches being subdivided into smaller ownerships.

Federal land

Parcel A is a 40-acre site located within the Big Bear Creek drainage at an elevation ranging from 9,800 to 10,100 feet. It is completely surrounded by private land. Slopes are typically gentle throughout (10 to 20 percent) with a general northeasterly aspect over most of the area.

No surface waters occur within this parcel and no well defined drainage patterns are evident. An irrigation channel, originating from Bear Creek, flows within 0.12 miles of the eastern edge of the parcel boundary providing the nearest source of surface water. It appears that some flow is present within this structure during most of the non-winter months. There are no roads or trails within this parcel. A low standard road running roughly parallel to the irrigation ditch serves as the nearest motorized access to this area.

With the exception of a small opening on the southern edge of this tract, the entire parcel is heavily forested. The forest canopy over most of the area is co-dominated by mature Engelmann spruce, aspen and subalpine fir. The forest is characterized by a multi-storied, uneven-aged canopy with the oldest trees (spruce) approaching 165 to 170 years. The larger spruce and fir are approaching 25 inches in diameter (dbh) while the larger aspen exceed 20 inches. The aspen component has reached maturity and is beginning to decline, resulting in high levels of coarse woody debris and standing dead. Although a considerable portion of the dead component is aspen, standing and down spruce/fir also comprise a substantial portion of this material. A heavy fir regeneration layer is present through most of lower canopy. The conifer component decreases significantly on the lower slopes in the southeast corner of this parcel, and mature aspen

dominates the canopy in this area (5 to 7 acres). The extreme southern edge of the tract (approximately 2 acres) is characterized by east-southeast facing meadow occupied by typical native cool season grasses and forbs.

Parcel B is an 80-acre site located 0.25 miles east of Parcel A in the Elk Creek drainage at an average elevation of 9,600 feet. This tract is surrounded by private lands on its northern, eastern and western boundaries. Slope gradients are gentle to moderate (15 to 20 percent) with a general orientation to the northwest. Elk Creek runs from north to south along and immediately adjacent to the western parcel boundary. There are no perennial water features within this parcel but two well defined intermittent tributaries to Elk Creek bisect the area. A pipeline, which provides water to the Wilson Mountain Subdivision to the north, runs along the western edge of this parcel. A primitive road runs along the pipeline and provides access for maintenance of the pipeline and associated structures.

The vegetative cover in Parcel B is characterized by dense forests (approximately 60 acres) interspersed with approximately 20 acres of small meadow openings less than 5 acres in size. Although conifer dominates the cover in some local areas, the forest canopy is primarily dominated by mature aspen intermixed with uneven-aged spruce-fir. As in Parcel A, the aspen component is beginning to decline resulting in moderate to locally high levels of coarse woody debris and standing dead. Most of the dead material is comprised of aspen. Younger spruce-fir (mostly fir) dominates the understory beneath the declining aspen canopy and the forest cover, as a whole, is converting to conifer. The meadows are dominated by cool season grasses and forbs with a scattered shrub component of snowberry and currant.

Non-Federal land

Grover Place is a 160-acre site located just below timberline at an elevation ranging from 10,500 to 10,900 feet. Two perennial forks of Elk Creek dissect the parcel and converge near its northern boundary. The parcel is further dissected by several moderately well-defined intermittent drainages. Slopes vary from gentle to steep with an average gradient of approximately 25 to 30 percent and a range of 10 to 55 percent. Slope gradient increases with decreasing elevation with the northern half of the parcel having substantially steeper gradients as a result of converging drainage features.

Motorized access to this parcel is provided by FR 622, which passes through the extreme northeast corner and then runs along the eastern boundary of the property. The remnants of old logging roads are present within the parcel but are not maintained and are no longer operable.

The vegetative cover in this parcel is dominated by moderately dense, mid to late-successional spruce-fir forests with scattered small meadows along the slopes of the perennial streams. Some of the forest cover was selectively logged during the early part of the last century but most of the canopy remains intact. The stand structure is uneven-aged with all age classes represented. Some scattered individual and clumps of aspen are interspersed with the conifer component, predominantly at lower elevations in the northern portion of the parcel. Levels of coarse woody debris and standing dead are moderate throughout, with some heavy local concentrations. A narrow, discontinuous band of riparian vegetation, comprised of intermittent stands of alder and willow and wetland obligate and wet facultative herbaceous plants, occurs along the perennial

stream channels. Approximately 6 acres in the extreme southeastern corner of the property is comprised of rock scree with a sparse vegetative cover of high elevation forbs and grasses.

Round Hill Land Exchange

The proposed action is an exchange of properties between the USFS and Denver Water. The USFS would exchange approximately 478 acres of Federal land (e.g., Elevenmile Reservoir Site) for approximately 644 acres of non-Federal land (e.g., Round Hill Site, Harrington Ranch Site, Thunder Butte Site, and the Wright Mining Claims Site). The land involved in the exchange is located within the PSNF and the RGNF.

Elevenmile Reservoir Site

The USFS is proposing to transfer ownership of Elevenmile Dam and the associated facilities to Denver Water. Denver Water's current use of the property is for operation of the Elevenmile Reservoir and dam. This property consists of approximately 478 acres of USFS land in Park County, Colorado. The property is located directly below Elevenmile Reservoir and consists of the dam, Denver Water maintenance buildings, caretaker's residence and compound. Forest Road 245 (Elevenmile Canyon Road) is the only access to the property. The property is surrounded by USFS land. Currently, Denver Water is under a USFS Special Use Permit for their operations on the property. Of the 478 acres being transferred to Denver Water, 110 acres are underwater and 10 acres contain maintenance and resident buildings operated by Denver Water. The remaining 358 acres are mostly montane forest dominated by ponderosa pine and Douglas fir. Approximately five acres of wetlands exist along the South Platte below the Elevenmile Reservoir dam. Numerous large rock outcrops and cliffs exist throughout this property.

Round Hill Site

This Park County property is approximately 400 acres accessed by Park County Road 5. The property contains extensive riparian habitat and wetlands located along Sheep Creek. Elevation of the property ranges from 10,000 to 11,000 feet. The USFS would acquire the property for inclusion in Pike National Forest.

The property contains a diversity of forest types and riparian acreage. The higher elevation area within the property consists of subalpine fir and spruce forest. Approximately 9 acres of aspen forest covers the lower elevation of the property. Sheep Creek flows through the property and contains approximately 25 acres of riparian and wetland habitat. The wetlands would be classified as shrub/scrub dominated by dense willows. These riparian wetlands are composed of sedges, alder, and willows. Extensive beaver activity has occurred within this drainage.

Harrington Ranch Site

This property of approximately 160 acres is located west of Highway 285 in Park County. The land consists of mixed conifer forest and meadows that have been primarily used for grazing.

Access to the property is from a small, private road off Highway 285. The property would be acquired by the USFS. It would be incorporated into the Pike National Forest and managed as such.

The property is a mixed spruce and lodgepole pine forest with some ponderosa pine on western and southern exposed hills. Open meadows with scattered aspen dominate parts of the property. The forest is characterized as a mixed age stand with some signs of insect infestations and disease. The meadows have been grazed on a regular basis and show signs of erosion. An intermittent stream flows through the property. The riparian area and stream channel condition shows signs of erosion and degradation likely resulting from cattle grazing activities.

Thunder Butte Site

This property is approximately 30.2 acres and located west of Highway 67 in Douglas County, Colorado. USFS Road 360 provides access to the property. Elevation ranges from 8,000 to 9,000 feet. The USFS would acquire the property. It would become part of the Pike National Forest and managed as such.

The property is mixed-conifer, montane forest typical of this part of the Pike National Forest. Ponderosa pine and Douglas fir dominate the forest with some mixed stands of aspen. Approximately 25 acres of ponderosa pine and 5 acres of Douglas fir exist on the property. The property consists of steep slopes and rocky soils. Two separate parcels will be acquired from the area,

In June 2002, the Thunder Butte area was burned in the Hayman Fire. The fire burned with low intensity through the parcel in section 23, meaning few trees were consumed and mainly the forest understory burned. The parcel in section 26 was heavily forested with some mature ponderosa pine. This area burned with high intensity and likely the forest cover now consists of standing dead timber.

Wright Mining Claims Site

This property is approximately 83 acres located in Huerfano County. The elevations of the properties range from 10,600 to 13,200. The properties offered are mining claims and include mostly acreage above tree line and some riparian land along the headwaters of the Huerfano River. The USFS would acquire the property and incorporate it into the San Isabel and Rio Grande National Forests.

A large portion of the properties being acquired would be classified as alpine habitat. Some subalpine spruce fir forest and riparian habitat is included in these properties. Approximately 2.3 acres of riparian habitat exists along the Huerfano River. This habitat is composed of dense willows and alders. No extensive wetlands exist on the property, although some of the riparian habitat has vegetation such as sedges and rushes present. No degradation of water quality from historical mining operations was noted.

Hahns Peak Water Coalition

The proposed action consists of the development of three springs and about 3,000 feet of pipeline for domestic water use in the Deep Creek drainage. Construction would include approximately 2.0 acres to be completed on USFS lands. The developments of three springs are from three seeps and not directly on Deep Creek. A backhoe will be used to construct the springs and the pipeline. Related structures include three spring developments (dams), underground pipeline, and distribution system (3-way valve). The "dams" will consist of a ditch with an impervious rubberized liner on the bottom and downhill side. A perforated pipe in the bottom, covered in washed rock will capture the water, which will then be transported in a 3 inch underground pipe. The physical specifications will be less than 3,000 feet of pipeline installed partially running along an existing route (FDR 410.2). The width of the ditch will be 2 feet, the grade will be a 350-foot drop, and its depth will be about 4 feet.

No roads will be constructed in conjunction with this effort; however, some site preparation activities will be necessary. About 0.1 of an acre of willows will be removed from a riparian area near the seeps. No permanent facilities will be constructed. This project is expected to experience year round use, indefinitely, with a production volume reaching 15 gallons per minute. Duration and timing of construction includes 1 week for spring development, and 1 week for pipeline installation and distribution system. Clearance is also needed for a 10-year special use permit. The project is expected to potentially provide service to up to 14 homes in the area. The continued development of home-sites in the community has apparently reduced the potential for successful wells both in quality and quantity.

STATUS OF THE SPECIES /CRITICAL HABITAT DESCRIPTION

Species/Critical Habitat Description

The lynx is a medium-sized cat with long legs; large, well-furred paws; long tufts on the ears; and a short, black-tipped tail (McCord and Cardoza 1982). The winter pelage of the lynx is dense and has a grizzled appearance with grayish-brown mixed with buff or pale brown fur on the back, and grayish-white or buff-white fur on the belly, legs and feet. Summer pelage of the lynx is more reddish to gray-brown (Koehler and Aubry 1994). Adult males average 10 kilograms (22 pounds) in weight and 85 centimeters (33.5 inches) in length (head to tail), and females average 8.5 kilograms (19 pounds) and 82 centimeters (32 inches) (Quinn and Parker 1987). The lynx's long legs and large feet make it highly adapted for hunting in deep snow.

Classification of the Canada lynx (also called the North American lynx) has been subject to revision. In accordance with Wilson and Reeder (1993), the lynx in North America is *Lynx canadensis*. Previously the Latin name *L. lynx canadensis* was used for lynx (Jones *et al.* 1992; S. Williams, Texas Tech University, pers. comm. 1994). Other scientific names still in use include *Felis lynx* or *F. lynx canadensis* (Jones *et al.* 1986; Tumlison 1987).

In 1998, the lynx was proposed for listing as a threatened species under the Act (63 FR, July 8, 1998). The lynx in the contiguous United States was listed as threatened effective April 23, 2000 (65 FR 16052, March 24, 2000). The Service identified one distinct population segment in the

lower 48 states. No critical habitat has been designated for the threatened population of Canada lynx in the contiguous United States. As explained in the final rule (65 FR 16052, March 24, 2000), designation of critical habitat would be prudent, but has been deferred until other higher priority work can be completed within the Service's current budget.

Life History

Home range and dispersal - Lynx home range size varies by the animal's gender, abundance of prey, season and the density of lynx populations (Hatler 1988; Koehler 1990; Poole 1994; Slough and Mowat 1996; Aubry *et al.* 2000; Mowat *et al.* 2000). Documented home ranges vary from 8 to 800 square kilometers (3 to 300 square miles) (Saunders 1963; Brand *et al.* 1976; Mech 1980; Parker *et al.* 1983; Koehler and Aubry 1994; Apps 2000; Mowat *et al.* 2000; Squires and Laurion 2000). Preliminary research supports the hypothesis that lynx home ranges at the southern extent of the species' range are generally large compared to those in the core of the range in Canada (Koehler and Aubry 1994; Apps 2000; Squires and Laurion 2000).

Lynx are capable of dispersing extremely long distances (Mech 1977; Washington Department of Wildlife 1993); for example, a male was documented traveling 616 kilometers (370 miles) (Brainerd 1985). Lynx disperse primarily when snowshoe hare (*Lepus americanus*) populations decline (Ward and Krebs 1985; Koehler and Aubry 1994; O'Donoghue *et al.* 1997; Poole 1997). Subadult lynx disperse even when prey is abundant (Poole 1997), presumably as an innate response to establish home ranges.

During the early 1960s and 1970s, there were numerous occurrences of lynx documented in atypical habitat, such as in North Dakota. In those years, harvest returns indicated unprecedented cyclic lynx highs for the 20th century in Canada (Adams 1963; Harger 1965; Mech 1973; Gunderson 1978; Thiel 1987; McKelvey *et al.* 2000b). Many of these unusual observations were probably dispersing animals that either were lost from the population or later returned to suitable habitat.

Diet - Snowshoe hares (*Lepus americanus*) are the primary prey of lynx, comprising 35-97 percent of the diet throughout the range of the lynx (Koehler and Aubry 1994). Other prey species include red squirrel (*Tamiasciurus hudsonicus*), grouse (*Bonasa umbellus*, *Dendragopus* spp., *Lagopus* spp.), flying squirrel (*Glaucomys sabrinus*), ground squirrel (*Spermophilus parryii*, *S. richardsonii*), porcupine (*Erethrizon dorsatum*), beaver (*Castor canadensis*), mice (*Peromyscus* spp.), voles (*Microtus* spp.), shrews (*Sorex* spp.), fish, and ungulates as carrion or occasionally as prey (Saunders 1963; Van Zyll de Jong 1966; Nellis *et al.* 1972; Brand *et al.* 1976; Brand and Keith 1979; Koehler 1990; Staples 1995; O'Donoghue *et al.* 1998).

During the cycle when hares become scarce, the proportion and importance of other prey species, especially red squirrel, increases in the diet (Brand *et al.* 1976; O'Donoghue *et al.* 1998; Apps 2000; Mowat *et al.* 2000). However, Koehler (1990) suggested that a diet of red squirrels alone might not be adequate to ensure lynx reproduction and survival of kittens.

Most research has focused on the winter diet. Summer diets are poorly understood throughout the range of lynx. Mowat *et al.* (2000) reported through their review of the literature that

summer diets have less snowshoe hare and more alternate prey species, possibly because of a greater availability of other species.

There has been little research on lynx diet specific to the southern portion of its range except in Washington (Koehler *et al.* 1979; Koehler 1990). Southern populations of lynx may prey on a wider diversity of species than northern populations because of lower average hare densities and differences in small mammal communities. In areas characterized by patchy distribution of lynx habitat, lynx may prey opportunistically on other species that occur in adjacent habitats, potentially including white-tailed jackrabbit (*Lepus townsendii*), black-tailed jackrabbit (*Lepus californicus*), sage-grouse (*Centrocercus urophasianus*), and Columbian sharp-tailed grouse *(Tympanuchus phasianellus*) (Quinn and Parker 1987; Lewis and Wenger 1998).

In northern regions, when hare densities decline, the lower quality diet causes sudden decreases in the productivity of adult female lynx and decreased survival of kittens, which causes the numbers of breeding lynx to level off or decrease (Nellis *et al.* 1972; Brand *et al.* 1976; Brand and Keith 1979; Poole 1994; Slough and Mowat 1996; O'Donoghue *et al.* 1997). Relative densities of snowshoe hares at southern latitudes are generally lower than those in the north, and differing interpretations of the population dynamics of southern populations of snowshoe hare have been proposed (Hodges 2000b).

Snowshoe hares have evolved to survive in areas that receive deep snow (Bittner and Rongstad 1982). Primary forest types that support snowshoe hare are *Abies lasiocarpa* (subalpine fir), *Picea engelmannii* (Engelmann spruce), *Pseudotsuga menziesii* (Douglas-fir), and *Pinus contorta* (lodgepole pine) in the western United States, and spruce/fir, pine, and deciduous forests in the eastern United States (Hodges 2000b). Within these habitat types, snowshoe hares prefer stands of conifers with shrub understories that provide forage, cover to escape predators, and protection during extreme weather (Wolfe *et al.* 1982; Monthey 1986; Koehler and Aubrey 1994). Hares' use of habitat is correlated with understory cover (Hodges 2000a). Early successional forest stages generally have greater understory structure than do mature forests and therefore support higher hare densities (Hodges 2000a, b). However, mature forests can also provide snowshoe hare habitat as openings are created in the canopy when trees succumb to disease, fire, wind, ice, or insects, and the understory develops (Buskirk *et al.* 2000b).

Lynx seem to prefer to move through continuous forest, using the highest terrain available such as ridges and saddles (Koehler 1990; Staples 1995). Cover is important to lynx when searching for food (Brand *et al.* 1976) but lynx often hunt along edges (Mowat *et al.* 2000). Kesterson (1988) and Staples (1995) reported that lynx hunted along the edges of mature stands within a burned forest matrix and Major (1989) found that lynx hunted along the edge of dense riparian willow stands. Lynx have been observed (via snow tracking) to avoid large openings (Koehler 1990; Staples 1995) during daily movements within the home range.

Den site selection **-** Lynx use large woody debris, such as downed logs, root wads and windfalls, to provide denning sites with security and thermal cover for kittens (McCord and Cardoza 1982; Koehler 1990; Koehler and Brittell 1990; Mowat *et al.* 2000; Squires and Laurion 2000). During the first few months of life, kittens are left alone at these sites when the female lynx hunts. Downed logs and overhead cover provide protection of kittens from predators, such as owls, hawks and other carnivores during this period.

The age of the forest stand does not seem as important for denning habitat as the amount of downed, woody debris available (Mowat *et al.* 2000). Den sites may be located within older regenerating stands (>20 years since disturbance) or in mature conifer or mixed conifer-deciduous (typically spruce/fir or spruce/birch) forests. In Washington, lynx used lodgepole pine, *Picea* spp. (spruce), and *Abies lasiocarpa* (subalpine fir) forests older than 200 years with an abundance of downed woody debris for denning (Koehler 1990). A den site in Wyoming was located in a mature subalpine fir/lodgepole pine forest with abundant downed logs and a high amount of horizontal cover (Squires and Laurion 2000). A lynx den site found in Maine in 1999 was located in a forest stand in *Picea rubra* (red spruce) cover type that was logged in 1930 and again in the 1980s and is regenerating into hardwoods (Organ 1999). The site had a dense understory and an abundance of dead and downed wood.

Denning habitat must be in or near foraging habitat to be functional. The hunting range of females is restricted at the time of parturition, and their need to feed kittens requires an abundance of prey. Lynx, like other carnivores, frequently move their kittens until they are old enough to hunt with their mother. Multiple nursery sites are needed that provide kittens with overhead cover and protection from predators and the elements. Downed logs and overhead cover must also be available throughout the home range to provide security when lynx kittens are old enough to travel (Bailey 1974).

Recruitment - Breeding occurs through March and April in the north (Quinn and Parker 1987). Kittens are born in May to June in south-central Yukon (Slough and Mowat 1996). The male lynx does not help with rearing young (Eisenberg 1986). Slough and Mowat (1996) reported yearling females giving birth during periods when hares were abundant; male lynx may be incapable of breeding during their first year (McCord and Cardoza 1982).

In northern study areas during the low phase of the hare cycle, few, if any, live kittens are born and few yearling females conceive (Brand and Keith 1979; Poole 1994; Slough and Mowat 1996). However, Mowat *et al.* (2000) suggested that in the far north, some lynx recruitment occurs when hares are scarce and this may be important in lynx population maintenance during hare lows. During periods of hare abundance in the northern taiga, litter size of adult females averages 4-5 kittens (Mowat *et al.* 1996).

Koehler (1990) suggested that the low number of kittens produced in north-central Washington was comparable to northern populations during periods of low snowshoe hare abundance. In his study area, 2 radio-collared females had litters of 3 and 4 kittens in 1986 and 1 kitten in 1987 (the actual litter size of 1 of the females in 1987 was not determined) (Koehler 1990). Of the known-size litters in Washington, 1 kitten survived the first winter.

In Montana, Squires and Laurion (2000) reported that 1 marked female produced 2 kittens in 1998. In 1999, 2 of 3 females produced litters of 2 kittens each. In Wyoming (Squires and Laurion 2000), 1 female produced 4 kittens in 1998, but snow tracking indicated that the kittens were not with the female in November and were presumed dead. The same female produced 2 kittens in 1999.

Mortality - Reported causes of lynx mortality vary between studies. The most commonly reported causes include starvation of kittens (Quinn and Parker 1987; Koehler 1990), and human-caused mortality, mostly fur trapping (Ward and Krebs 1985; Bailey *et al.* 1986).

Significant lynx mortality due to starvation has been demonstrated in cyclic populations of the northern taiga, during the first two years of hare scarcity (Poole 1994; Slough and Mowat 1996). Various studies have shown that, during periods of low snowshoe hare numbers, starvation can account for up to two-thirds of all natural lynx deaths. Trapping mortality may be additive rather than compensatory during the low period of the snowshoe hare cycle (Brand and Keith 1979). Hunger-related stress, which induces dispersal, may increase the exposure of lynx to other forms of mortality such as trapping and highway collisions (Brand and Keith 1979; Carbon and Patriquin 1983; Ward and Krebs 1985; Bailey *et al.* 1986).

Paved roads have been a mortality factor in lynx translocation efforts within historical lynx range. In New York, 18 translocated lynx were killed on highways (Brocke *et al.* 1990). It has been suggested by Brocke *et al.* (1990) that translocated animals may be more vulnerable to highway mortality than resident lynx. Six lynx were killed on 2- and 4-lane Colorado highways following their release as part of a reintroduction effort (CDOW 2003).

Other than translocated animals, there have been documented occurrences of highway mortality of lynx in Wisconsin (Theil 1987), Minnesota (DonCarlos 1994; J. Cochrane, USFWS, pers. comm. 2003), and Montana (G. Joslin, Montana Department of Fish, Wildlife and Parks, pers. comm. 2003).

Predation on lynx by mountain lion (*Felis concolor*), coyote (*Canis latrans*), wolverine (*Gulo gulo*), gray wolf (*Canis lupus*), fisher (*Martes pennanti*) and other lynx has been confirmed (Berrie 1974; Koehler *et al.* 1979; Poole 1994; Slough and Mowat 1996; O'Donoghue *et al.* 1997; Apps 2000; Vashon *et al.* 2003; Squires and Laurion 2000). Squires and Laurion (2000) reported 2 of 6 mortalities of radio-collared lynx in Montana were due to mountain lion predation. Observations of such events are rare, and the significance of predation on lynx populations is unknown.

Interspecific relationships with other carnivores - Buskirk *et al.* (2000a) described the two major competition impacts to lynx as exploitation (competition for food) and interference (avoidance). Of several predators examined (birds of prey, coyote, gray wolf, mountain lion, bobcat (*Lynx rufus*), and wolverine), coyotes were deemed to most likely pose local or regionally important exploitation impacts to lynx, and coyotes and bobcats were deemed to possibly impart important interference competition effects on lynx. Mountain lions were described as interference competitors, possibly impacting lynx during summer and in areas lacking deep snow in winter, or when high elevation snow packs develop crust in the spring.

Exploitation competition may contribute to lynx starvation and reduced recruitment. During periods of low snowshoe hare numbers, starvation accounted for up to two-thirds of all natural lynx deaths in the Northwest Territories of Canada (Poole 1994). Major predators of snowshoe hare include lynx, northern goshawk (*Accipiter gentilis*), great horned owl (*Bubo virginianus*), bobcat, coyote, red fox (*Vulpes vulpes*), fisher, and mountain lion. In southern portions of

snowshoe hare range, predators may limit hare populations to lower densities than in the taiga (Dolbeer and Clark 1975; Wolff 1980; Koehler and Aubry 1994).

Based on only anecdotal evidence, Parker *et al.* (1983) discussed competition between bobcats and lynx on Cape Breton Island. Lynx were found to be common over much of the island prior to bobcat colonization. Concurrent with the colonization of the island by bobcats, lynx densities declined and their presence on the island became restricted to the highlands, the one area where bobcats did not become established.

Population Dynamics

In Canada and Alaska, lynx populations undergo extreme fluctuations in response to snowshoe hare population cycles, enlarging or dispersing from their home ranges and ceasing the recruitment of young into the population after hare populations decline (Mowat *et al.* 2000). In the southern portion of the range in the contiguous United States, lynx populations appear to be naturally limited by the availability of snowshoe hares, as suggested by large home range size, high kitten mortality due to starvation, and greater reliance on alternate prey. These characteristics appear to be similar to those exhibited by lynx populations in the taiga during the low phase of the population cycle (Quinn and Parker 1987, Koehler 1990, Aubry *et al.* 2000). This is likely due to the inherently patchy distribution of lynx and hare habitat in the contiguous United States and corresponding lower densities of hares.

A lack of accurate data limits our understanding of lynx population dynamics in the contiguous United States and precludes drawing definitive conclusions about lynx population trends. Formal surveys designed specifically to detect lynx have rarely been conducted. Many reports of lynx (e.g., visual observations, snow tracks) have been collected incidentally to other activities, but cannot be used to infer population trends. Long-term trapping data have been used to estimate population trends for various species. However, trapping returns are strongly influenced by trapper effort, which varies between years, and therefore may not accurately reflect population trends. Another important problem is that trapping records of many States did not differentiate between bobcats and lynx, referring to both as “lynxcats.” Overall, the available data are too incomplete to infer much beyond simple occurrence and distribution of lynx in the contiguous United States (McKelvey *et al.* 2000b)

Lynx populations in the contiguous United States occur at the southern periphery of a metapopulation whose core is located in the northern boreal forest of central Canada (McCord and Cardoza 1982; Quinn and Parker 1987; McKelvey *et al.* 2000a). Lynx population dynamics may emanate from the core to the periphery, as evidenced by a lagged correlation of lynx trap records and observations (McKelvey *et al.* 2000b; Mowat *et al.* 2000). In the Great Lakes Geographic Area, population dynamics in recent decades appear to be strongly driven by immigration from Canada (McKelvey *et al.* 2000b). In other areas and time periods, however, it is not known to what extent the correlation is due to immigration from Canada, population responses to the same factors controlling northern populations, or a combination of the two.

We suspect that some areas in the contiguous United States naturally act as sources of lynx (recruitment is greater than mortality) that are able to disperse and potentially colonize other patches (McKelvey *et al.* 2000a). Other areas may function as sinks, where lynx mortality is

greater than recruitment and lynx are lost from the overall population. Sink habitats are most likely those places on the periphery of the southern boreal forest where habitat becomes more fragmented and more distant from larger lynx populations. Fluctuations in prey populations may cause some habitat patches to change from being sinks to sources, and vice versa. The ability of naturally dynamic habitat to support lynx populations may change as the habitat undergoes natural succession following natural or manmade disturbances (i.e., fire, clearcutting).

Status and Distribution

The lynx in the contiguous United States was listed as threatened effective April 23, 2000 (65 FR 16052, March 24, 2000). At least one of five listing factors must be met for listing under the ESA. These factors include: present or threatened destruction of habitat or range, over-utilization, disease or predation, inadequacy of existing regulatory mechanisms or other natural or human-made causes. The sole factor for listing the Canada lynx as threatened was inadequacy of existing regulatory mechanisms, specifically the lack of Forest Land and Resource Management Plans guidance to address the needs of lynx.

The following discussion of the status and distribution of lynx is largely excerpted from the Service's final rule (65 FR 16052, March 24, 2000). The historical and present range of the lynx north of the contiguous United States includes Alaska and that part of Canada that extends from the Yukon and Northwest Territories south across the United States border and east to New Brunswick and Nova Scotia. In the contiguous United States, lynx historically occurred in the Cascades Range of Washington and Oregon; the Rocky Mountain Range in Montana, Wyoming, Idaho, eastern Washington, eastern Oregon, northern Utah, and Colorado; the western Great Lakes Region; and the northeastern United States region from Maine southwest to New York (McCord and Cardoza 1982; Quinn and Parker 1987).

The distribution of lynx in North America is closely associated with the distribution of North American boreal forest (Agee 2000). In Canada and Alaska, lynx inhabit the classic boreal forest ecosystem known as the taiga (McCord and Cardoza 1982; Quinn and Parker 1987; Agee 2000; McKelvey *et al.* 2000b). The range of lynx extends south from the classic boreal forest zone into the subalpine forest of the western United States, and the boreal/hardwood forest ecotone in the eastern United States (Agee 2000; McKelvey *et al.* 2000b). Forests with boreal features (Agee 2000) extend south into the contiguous United States along the Cascade and Rocky Mountain Ranges in the west, the western Great Lakes Region, and along the Appalachian Mountain Range of the northeastern United States. Within these general forest types, lynx are most likely to persist in areas that receive deep snow, to which the lynx is highly adapted (Ruggiero *et al.* 2000). Lynx are rare or absent from the wet coastal forests of Alaska and Canada (Mowat *et al.* 2000).

At its southern margins in the contiguous United States, forests with boreal features, or southern boreal forests, become naturally fragmented as they transition into other vegetation types. Southern boreal forest habitat patches are small relative to the extensive northern boreal forest of Canada and Alaska, which constitutes the majority of lynx range. Many southern boreal forest habitat patches within the contiguous United States cannot support resident populations of lynx and their primary prey species.

The complexities of lynx life-history and population dynamics, combined with a general lack of reliable population data for the contiguous United States, make it difficult to ascertain the past or present population status of lynx in the contiguous United States. It is impossible to determine with certainty whether reports of lynx in many States were: 1) animals dispersing from northern populations that were effectively lost because they did not join or establish resident populations, 2) animals that were a part of a resident population that persisted for many generations, or 3) a mixture of both resident and dispersing animals.

The final rule (65 FR 16052, March 24, 2000) determining threatened status for the lynx in the contiguous United States summarized lynx status and distribution across four regions that are separated from each other by ecological barriers consisting of unsuitable lynx habitat. These distinct regions are the Northeast, the Great Lakes, the Northern Rocky Mountains/Cascades, and the Southern Rocky Mountains. While these regions are ecologically unique and discrete, the lynx is associated with southern boreal forest in each and, with the exception of the Southern Rocky Mountain Region, each area is geographically connected to the much larger population of lynx in Canada.

Northeast Region (Maine, New Hampshire, Vermont, New York) **-** Based on an analysis of cover types and elevation zones containing most of the lynx occurrences, McKelvey *et al.* (2000b) determined that, at the broad scale, most lynx occurrence records in the Northeast were found within the "Mixed Forest-Coniferous Forest-Tundra" cover type at elevations ranging from 250-750 meters (820-2,460 feet). This habitat type in the northeast United States occurs along the northern Appalachian Mountain range from southeastern Quebec, western New Brunswick, and western Maine, south through northern New Hampshire. This habitat type becomes naturally more fragmented and begins to diminish to the south and west, with a disjunct segment running north-south through Vermont, a patch of habitat in the Adirondacks of northern New York, and with a few more distant and isolated patches in Pennsylvania (McKelvey *et al.* 2000b).

As it did historically, the boreal forest of the Northeast continues to exist primarily in Maine where habitat is currently optimal and a resident, breeding population of lynx continues to exist. Maine's lynx population is currently much larger than we knew at the time of the final listing rule in 2000 and habitat is directly connected to substantive lynx populations and habitat in southeastern Quebec and New Brunswick. The potential exists for lynx to occur in New Hampshire because of its direct connectivity with Maine. Lynx in Vermont have always existed solely as dispersers. Lynx occurring in New York since 1900 have been dispersers. Detailed information on the status and distribution of lynx in this region is found in the Final Rule (65 FR 16052; March 24, 2000) and the Clarification of the Final Rule (68 FR 40076; July 3, 2003).

Great Lakes Region (Minnesota, Wisconsin, Michigan) **-** The majority of lynx occurrence records in the Great Lakes Region are associated with the "mixed deciduous-coniferous forest" type (McKelvey *et al.* 2000b). Within this general forest type, the highest frequency of lynx occurrences were in the *Acer saccharum* (sugar maple), *Tilia* spp. (basswood), *Pinus banksiana* (jack pine), *P. strobus* (white pine), and *P. resinosa* (red pine) forest types (McKelvey *et al.* 2000b). These types are found primarily in northeastern Minnesota, northern Wisconsin, and the western portion of Michigan's upper peninsula.

We conclude that northeastern Minnesota has historically supported and currently supports a resident lynx population, based on the number of lynx records, evidence of reproduction, and the presence of boreal forest contiguous with occupied habitat in Ontario. We conclude records of lynx in Wisconsin and Michigan constitute dispersing animals, rather than individuals from resident populations, based on the lack of evidence of reproduction, lack of connectivity with suitable habitat, and limited amount of habitat. Detailed information on the status and distribution of lynx in this region is found in the Final Rule (65 FR 16052; March 24, 2000) and the Clarification of the Final Rule (68 FR 40076; July 3, 2003).

Northern Rocky Mountains/Cascades Region (Washington, Oregon, Idaho, Wyoming, Utah, Montana) - In this region, the majority of lynx occurrences are associated at a broad scale with the "Rocky Mountain Conifer Forest"; within this type, most of the occurrences are in moist Douglas-fir and western spruce/fir forests (McKelvey *et al.* 2000b). Most of the lynx occurrences are in the 1,500-2,000 meters (4,920-6,560 feet) elevation class (McKelvey *et al.* 2000b). These habitats are found in the Rocky Mountains of Montana, Idaho, eastern Washington, and Utah, the Wallowa Mountains and Blue Mountains of southeast Washington and northeastern Oregon, and the Cascade Mountains in Washington and Oregon. The majority of verified lynx occurrences in the United States and the confirmed presence of resident populations are from this region. The boreal forest of Washington, Montana, and Idaho is contiguous with that in adjacent British Columbia and Alberta, Canada.

We conclude that the Northern Rocky Mountains/Cascades Region continues to support resident lynx populations in north central, and northeastern Washington, western Montana and likely northern Idaho based on current evidence of reproduction in Washington and Montana and the presence of habitat able to support resident populations. We conclude that lynx have always occurred as dispersers in Oregon and Utah because habitat capable of supporting lynx is limited and there are relatively few historic records of lynx in these states. In northern Wyoming it appears habitat is less suitable to support resident populations and, therefore, we conclude animals in this area are most likely dispersers. Detailed information on the status and distribution of lynx in this region is found in the Final Rule (65 FR 16052; March 24, 2000) and the Clarification of the Final Rule (68 FR 40076; July 3, 2003).

Southern Rocky Mountains Region (Colorado, SE Wyoming) - Colorado represents the extreme southern edge of the range of the lynx. The southern boreal forest of Colorado and southeastern Wyoming is isolated from boreal forest in Utah and northwestern Wyoming by the Green River Valley and the Wyoming basin (Findley and Anderson 1956). These areas likely reduce opportunities for immigration from the Northern Rocky Mountains/Cascades Region and Canada (Halfpenny *et al.* 1982; Koehler and Aubry 1994).

A majority of the lynx occurrence records in Colorado and southeastern Wyoming are associated with the "Rocky Mountain Conifer Forest" type. The occurrences in the Southern Rockies were generally at higher elevations (1,250 to over 3,750 meters (4,100-12,300 feet)) than were all other occurrences in the West (McKelvey *et al.* 2000b).

There are relatively few historic lynx records from this region (McKelvey *et al.* 2000b). We are uncertain whether the Southern Rockies supported a small resident population historically or whether such records were of dispersers that arrived during extremely high population cycles. If

these historic records represent resident populations rather than dispersing animals that emigrated from the Northern Rocky Mountains, Cascades or Canada, then we believe a viable native resident lynx population no longer exists in the Southern Rocky Mountains. Although habitats in the Southern Rockies are far from source populations and more isolated, it is still possible that dispersers could arrive in the Southern Rocky Mountains during extreme highs in the population cycle. Detailed information on the status and distribution of lynx in this region is found in the Final Rule (65 FR 16052; March 24, 2000) and the Clarification of the Final Rule (68 FR 40076; July 3, 2003).

Reports from other locations - Lynx have been documented in habitats that are unable to support them long-term. Such occurrences are associated with cyclic population highs when lynx tend to disperse long distances. These unpredictable and temporary occurrences are not included within either the historic or current range of lynx because they are well outside of lynx habitat (65 FR 16052, March 24, 2000; 68 FR 40076, July 3, 2003). This includes records from Nevada, North Dakota, South Dakota, Iowa, Nebraska, Indiana, Ohio, and Virginia (Hall and Kelson 1959; Burt 1954; Gunderson 1978; Mech 1980; McKelvey *et al.* 2000b; Johnson 1994; Jones 1994; South Dakota Natural Heritage Program 1994; Jobman 1997; Smithsonian Institute 1998).

Status In the Southern Rockies - Canada lynx occur primarily in spruce-fir and lodgepole pine forests, at elevations between 8,000 and 12,000 feet (Ruggiero et al. 1999). *Populus tremuloide*s (Quaking aspen) stands and forest edges, as well as open grass meadows and forest ecotones, may also support high numbers of hares and Canada lynx. On a landscape scale, Canada lynx habitat includes a mosaic of early seral stages that support snowshoe hare populations and late seral stages of dense old growth forest that provide ideal denning and security habitat. Connectivity between Canada lynx populations is critical: Dispersal corridors should be several miles wide with only narrow gaps. Large tracts of continuous coniferous forest are the most desirable for Canada lynx travel and dispersal (Tanimoto 1998).

Records of lynx occurrence are available from throughout most of the Southern Rocky Mountains. The last specimens of lynx taken in the Southern Rockies were from the late 1960s and early 1970s. In 1969, three lynx specimens were taken in adjacent counties in the central core of the Southern Rockies. One was shot along the Fryingpan River in Pitkin County, another on Vail Mountain (Eagle County), and a third was trapped south of Leadville in Lake County (G. Byrne, pers. comm. 1999). In 1971, the State of Colorado closed the season on lynx, making it illegal to take this species. Since then, only a few specimens have been obtained. In 1972, a lynx was trapped on Guanella Pass and another caught in a snow slide east of Bakerville, Colorado, both in Clear Creek County. During the winter of 1973-74, a pair of lynx was illegally trapped within the Vail Ski Area boundaries (Thompson and Halfpenny 1989). No lynx specimens are available since those last illegal takes.

Despite the resulting lack of recent specimens, strong evidence of lynx persistence continued to surface. A Statewide lynx verification program conducted from 1978-80 by the Colorado Division of Wildlife (CDOW) concluded that viable, low-density lynx populations persisted in Eagle, Pitkin, Lake, and Clear Creek counties. Because Summit County is sandwiched between three of those counties, it is likely that lynx existed there as well. In addition, the program provided evidence of lynx occurrence in Grand and Park counties. Lack of evidence from other portions of the State was as likely a consequence of survey effort as lack of lynx.

Thompson and Halfpenny (1989) confirmed lynx in the vicinity of Vail Ski Area during the winter of 1988-89 as part of studies conducted by Vail Associates for the Category III expansion. They state in their report, "there is no question that lynx exist at Vail Ski Area and in the surrounding mountains." Follow-up work by the CDOW in 1990 and 1991 lead to the discovery of additional lynx tracks in the area. In 1991, Thompson and Halfpenny also confirmed two sets of lynx tracks at a proposed ski area site south of Wolf Creek Pass in the eastern San Juan Mountains (Andrews 1992; Thompson, pers. comm.). They believed the pair was probably a female and its kitten.

Occasional credible sighting reports and track evidence continue to be received from various parts of the State, providing additional evidence that native lynx likely still persist in low numbers in the Southern Rockies. Since the 1991 track discoveries near Vail and in the San Juans, the CDOW has recorded seven lynx sightings or track locations between 1992 and 1998 that they rate as probable lynx. Three of those were by CDOW biologists. Carney (1993) reported lynx tracks from the east side of the Gore Range in Summit County. Tom Beck, a carnivore researcher with CDOW, found a set of lynx tracks in the Dolores River drainage in the west San Juans, Montezuma County in 1993. A CDOW Area Wildlife Manager observed a lynx in the southern Sangre de Cristos of Costilla County, also in 1993. Two sightings and one set of tracks were reported from Eagle County and another set of tracks was located in Larimer County north of Rocky Mountain National Park.

In 1997, photographs were taken of tracks believed to be those of lynx in the Tennessee Creek drainage on the border of Lake and Eagle counties. This is an area where possible lynx tracks were located just a few years earlier. Among the most recent credible sighting reports include one from Boreas Pass on the border of Summit and Park Counties in 1995, another from the Vail vicinity in January 1998, one from a Forest Service biologist in July 1998 on the Flattops in northwestern Colorado, and from a Park Ranger in Rocky Mountain National Park (Larimer County) in December 1998. During the 1998-99 winter, CDOW trackers following radio-collared lynx just transplanted into the San Juan Mountains, located a several-day-old lynx trail they believed may be that of a native lynx (Byrne and Shenk, pers. comm.). This location was in the same general area where Thompson and Halfpenny located lynx tracks in 1991.

Lynx were confirmed in Eagle County as late as 1991 and in Summit County (Gore Range) as late as 1993. Evidence has continued to indicate lynx occupancy of the central and, possibly, northern mountains through the 1990s. This evidence includes a sighting by a Forest Service biologist in July 1998 in the Flattops in northwestern Colorado, and tracks in Larimer County north of Rocky Mountain National Park. The CDOW found evidence of lynx in Eagle County and in Grand County. Radio tracking in 2000 of lynx trans-located to Colorado indicated that a few individuals spent time in the Gore Range. In July 2001, CDOW reported a collared lynx in the Flattops Wilderness Area (Shenk, pers. comm. 2002). It is conceivable that native lynx may yet occupy the high mountain landscapes in Colorado.

The Canada lynx has been classified by the State of Colorado as a State endangered species since 1976. In 2000, the Service classified the lynx as a federally threatened species. Since 1978, there have been 14 investigations into naturally occurring lynx presence in Colorado conducted by the CDOW and other private and public conservation groups. Definitive evidence has not

been found to document the presence of lynx from these studies though tracks attributed to lynx were found on a number of occasions.

The CDOW initiated a Canada lynx recovery program in February 1999. The program augmented any existing population with transplants from Canada and Alaska, with the intent of reestablishing viable, self-sustaining populations in primary blocks of suitable habitat throughout the Southern Rocky Mountains. Ninety-six lynx were released into the San Juan Mountains during the winter/spring periods of 1999 and 2000 by the CDOW. In 2003, 33 additional lynx were released into south-central Colorado as part of the State's recovery program. Additional lynx are to be released to further the goal of establishing a viable lynx population in Colorado. In May and June of 2003, the State of Colorado confirmed the birth of 16 lynx kittens. However, 2 of the 16 kittens have been reported missing and are presumed dead (Broderdorp, USFWS, 2004, pers. comm.).

Evidence of reproduction and multiple individuals within each litter suggests that there is an adequate local supply of prey. Some of the lynx initially released by the CDOW appear to have established home ranges, as demonstrated by radio telemetry (Tanya Shenk, CDOW, 2003, pers comm.). Many of the released lynx have displayed fidelity to areas away from the release areas suggesting that they have sought these areas out, and sufficient prey exists to support them. After the first year of the program, evidence suggested that there was insufficient prey available in the Southern Rockies. Diet analysis after the first year of the program showed that 67 percent of the lynx diet was snowshoe hare. However, diet analysis of later releases showed that 89 percent of their diet consisted of snowshoe hare (Shenk, CDOW, 2003, pers comm.). This suggests that after release, lynx were seeking out areas within the ecosystem that supported high numbers of prey, and, in the mean time relied on other prey to sustain them. Most of these lynx are currently known to occupy the San Juan Mountains. A number of lynx have made and continue to make exploratory movements throughout the Southern Rockies. Several animals have taken up residence for extended periods in the central and northern mountains. Currently, lynx may exist in most major portions of the Southern Rockies Ecosystem.

Most lynx that are currently being monitored continue to use terrain within the core research area: New Mexico north to Gunnison, west as far as Taylor Mesa and east to Monarch Pass. There are some lynx north of Gunnison up to the I-70 corridor and in the Taylor Park area.

The State is currently tracking 59 of the 81 lynx still possibly alive. No signals have been detected for 20 of the lynx since at least May 24, 2002. One of these missing lynx is the lynx hit by a truck in New Mexico, thus only 19 are truly missing. A number of these lynx are now missing because their collar batteries have died and they can no longer pickup radio signals. Some of the missing lynx may still have functioning collars but are outside the research area. Expanded flights outside the research area during the summer and fall months may yield locating these missing lynx. Two of the lynx released in 2000 have probably slipped their collars. One of the male lynx released in 2003 has died from unknown circumstances. Two additional mortalities were reported on September 17, 2003. Since the initial releases in 1999, the State has documented 48 mortalities.

ENVIRONMENTAL BASELINE

The environmental baseline is defined as the past and present impacts on the Canada lynx 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.

Sun Down Bowl Chair 5 Upgrade

The action area is the Camp Hale LAU, which contains 68,325 total acres, including 59,889 acres (87.7 percent) in Federal ownership. This LAU encompasses that portion of the upper Eagle River watershed east of the Eagle River, south of the ridgeline along Vail Mountain, north of Tennessee Pass, and west of the Eagle/Summit County line. Environmental baseline statistics of lynx habitat in the Camp Hale LAU are summarized in the table below. In this LAU, current mapping shows 7,604 acres of potential denning habitat, 19,747 acres of non-denning winter foraging habitat, 10,074 acres of "other" lynx habitat, and 1,229 acres of currently unsuitable lynx habitat. About 3.2 percent of the lynx habitat in the LAU is currently mapped as unsuitable and 19.7 percent is mapped as denning. These values are consistent with the management Standards in the LCAS.

Habitat Description	Acres of Habitat in LAU	Percentage of all lynx habitat in LAU
*Winter Foraging	19,747	51.1
Denning	7,604	19.7
Other	10,074	26.1
Unsuitable	1,229	3.2
Total Lynx Habitat	38,654	100

* Excludes winter foraging values associated with denning habitat.

Field surveys evaluated the USFS GIS-based lynx habitat classifications in the project area that are relevant to the current analysis. The spruce stands located along upper portions of the existing Chair 5 lift are structurally suitable as denning habitat, but receive substantial human activity (i.e., spring/summer maintenance and recreation) that would likely deter lynx from using this area as a denning site. However, both stands are winter forage habitat that currently supports snowshoe hares and red squirrels.

Tiny Beaver Commercial Firewood Sale

The project boundaries fall within the Trout Handkerchief LAU (see following table). Most of the project area is mapped as non-habitat or currently unsuitable habitat with some "other" habitat and a limited amount of winter and denning habitat.

Description/LAU (20,913)	Trout Handkerchief
Total Acres within LAU	176,750 (42,534 acres or 24.06% is non-lynx)
Total Acres of Lynx Habitat within LAU	134,216 (75.94% of total LAU acres)
Acres and Percent of Denning Habitat	51,786 acres (38.58%)
Acres and Percent of Winter Foraging Habitat	14,390 acres (10.72%)
Acres and Percent of Other Habitat	42,135 acres (31.39%)
Acres and Percent of Lynx Habitat of Suitable Condition	108,311 acres (80.69%)
Currently Unsuitable Habitat	25,905 acres (19.31%)

Pogue and Crystal Lakes Commercial Firewood Sale

The project boundaries fall within the Trout-Handkerchief and Pinos Rock LAUs. The environmental baseline for these LAUs is displayed below. Most of the project area is mapped as non-habitat or currently unsuitable habitat with some "other" habitat.

Trout-Handkerchief LAU

Description/LAU (20913)	Trout Handkerchief
Total Acres within LAU	176,750 (42,534 acres or 24.06% is non-lynx)
Total Acres of Lynx Habitat within LAU	134,216 (75.94% of total LAU acres)
Acres and Percent of Denning Habitat	51,786 acres (38.58%)
Acres and Percent of Winter Foraging Habitat	14,390 acres (10.72%)
Acres and Percent of Other Habitat (Low Quality and Summer Forage)	42,135 acres (31.39%)
Acres and Percent of Lynx Habitat within LAU in a Suitable Condition	108,311 acres (80.69%)
Acres and Percent of Lynx Habitat within LAU in an Unsuitable Condition	25,905 acres (19.31%)

Pinos Rock LAU

Description/LAU (20915)	Pinos Rock
Total Acres within LAU	94,932 (35,575 acres or 37.47% is non-lynx)
Total Acres of Lynx Habitat within LAU	59,357 (62.53% of total LAU acres)
Acres and Percent of Denning Habitat	19,451 (32.76%)
Acres and Percent of Winter Habitat	9,922 (16.71%)
Acres and Percent of Other Habitat (Low Quality and Summer Forage)	24,271 (40.88%)
Acres and Percent of Suitable Condition	53,643 (90.35%)

Acres and Percent of Lynx Habitat within LAU in an Unsuitable Condition	5,714 (9.62%)

The project area is within spruce-fir stands that have been previously cut and are at different stages of regrowth. The area around Pogue Lake is older and more thickly vegetated, while the area around Crystal Lakes is younger and more open from prior clear cut harvests. Both areas have coarse woody debris on the ground that is mostly decayed beyond salvage for firewood use. Snags in both areas generally are not of large diameter and within the Crystal Lakes area are more exposed among sparser, younger tree regeneration.

The project includes 2 separate cut areas. The upper area is predominately subalpine fir with few large diameter trees left from the earlier cut. Most of the upper area is generally open with minimal canopy cover. Tall trees are scattered throughout the regrowth, which is generally a sparse midstory, interspersed with some denser pockets of midstory regrowth and/or remnant tall trees. In addition, there are large patches of standing dead (infected by spruce budworm) and live trees that do not have extensive foliage.

The lower area is a mixture of fir and aspen that is relatively dense with a multi-layered canopy. There are some large meadows, and along the road and meadow edges, there is regenerating aspen under the forest overstory. There are fewer snags that are more widely scattered throughout the area, and are mostly of small diameter.

Both areas have coarse woody debris on the ground that is mostly decayed beyond salvage for firewood use and snags in both areas generally are not of large diameter. Most of the available standing dead are found in the upper area.

Rito Hondo and Cold Springs Fuels Treatment

Both the Rito Hondo and Cold Springs Fuels Treatment Projects occur within the eastern portion of the Rito-Archuleta Lynx Analysis Unit (LAU) near the Forest boundary. Approximately 55 percent of this LAU contains non-habitat conditions due to the low elevations and dry plant community types. Total lynx habitat in this LAU is comprised of approximately 32 percent denning habitat, 14 percent winter forage habitat and 39 percent “other” lynx habitat types. Currently suitable habitat conditions occur on approximately 85 percent of the total habitat area.

Both the Rito Hondo and Cold Springs Fuels Treatment project areas are dominated by dry plant community types that are not typically associated with lynx habitat. In Rito Hondo, approximately 84 percent of the project area is mapped as non-habitat for Canada lynx. Mapped lynx habitat includes approximately 148 acres of denning habitat, 47 acres of winter foraging habitat, 37 acres of “other” lynx habitat, and 2 acres of currently unsuitable habitat. Most of this habitat occurs along an upper ridgeline that extends into the Cold Springs area. In Cold Springs, approximately 98 percent of the project area occurs as non-lynx habitat. In this project area, a narrow band of winter foraging habitat along the ridgeline is the only mapped lynx habitat. This area totals approximately 31 acres.

Historic fire regimes within both project areas are suspected to have occurred at median intervals of about 10 to 20 years. Median fire intervals in the warm, dry mixed-conifer forest occurred at

intervals of about 20 to 30 years. It is therefore probable that natural fire was a major factor concerning the maintenance of plant community composition and structure (habitats) within the project area.

Local Survey/Occurrence Information

There are no documented records of lynx occurring in or adjacent to the Rito Hondo or Cold Springs project areas. On-going surveys of the lynx reintroduction program indicate that individual animals do use the Conejos River corridor for movement purposes to the southern San Juan Mountains. The Rito Hondo and Cold Springs project areas are not likely to receive much, if any, use by lynx due to the dry plant community types and large amount of non-habitat area involved. In 2001, however, there were at least three lynx utilizing habitat within the Conejos River Corridor approximately 10 miles to the east of the project areas. (Shenk, CDOW, pers. com. 2002).

The environmental baseline used in this analysis was derived from the post-project condition described for the Rito-Archuleta LAU in the July 2003 batched consultation package (ES/GJ-6-CO-03-F-006). This baseline includes all the recent projects implemented and/or analyzed within the Rito-Archuleta LAU (Grouse Timber Sale (TS), La Manga TS, Spruce Hole TS) but does not include some other actions that were projected in the Spruce Hole/La Manga Biological Assessments. This accounts for the discrepancy in the numbers reported in the July 2003 batched consultation package and this current analysis. The environmental baseline conditions are displayed in the table below.

Current Baseline Habitat Conditions for the Rito-Archuleta LAU.

LAU	Total LAU Acres	Denning Acres	Winter-forage Habitat	"Other" habitat	Currently unsuitable
Rito Archuleta	94,118	13,493 (31.6%)	6,316 (14.8%)	17,764 (41.7%)	5,068 (11.9%)

As shown in the table above, the Rito-Archuleta LAU contains a considerable amount of non-lynx habitat that is primarily dominated by dry forest and non-forest habitat types such as ponderosa pine, common juniper, and grasslands. Currently, about 88 percent of the total lynx habitat is suitable for use by Canada lynx for different aspects of its life history needs. Approximately 32 percent of the LAU also occurs as denning habitat.

Shilling Springs Fuels Treatment

The environmental baseline used in this analysis was derived from the summary of lynx habitat conditions described for the La Jara LAU in the table below of the April 2003, Updated Biological Assessment for the Management Indicator Species (MIS) Forest Plan Amendment. This baseline was concurred with and included in the September 2003 BO received from the Service for the MIS Plan Amendment (ES/GJ-6-CO-03-F-012). This baseline includes all the recent projects consulted on within the La Jara LAU as well as mapped habitat conditions on other State, Federal, or private land. The environmental baseline conditions are displayed in the following table.

Baseline Habitat Conditions for La Jara LAU.

LAU Name	Total LAU Acres	Total Denning Acres	Total Winter Foraging	Total Other Habitat	Currently Unsuitable Habitat	Total Habitat
La Jara	99,861	17,482 (29.2%)	13,295 (22.2%)	26,641 (44.4%)	2,563 (4.3%)	59,981 (60.1%)

As noted in the table above, the La Jara LAU contains a considerable amount of non-lynx habitat (60 percent) that is primarily dominated by dry forest and non-forest habitat types such as ponderosa pine, common juniper, and grasslands. Currently, about 96 percent of the total lynx habitat is suitable for use by Canada lynx for different aspects of its life history needs. Approximately 29 percent of the LAU also occurs as denning habitat, primarily in the upper elevations.

Horse Creek Timber Sale

The Horse Creek project area lies within the 124,981 acre Mancos LAU. Suitable lynx habitat is found within the LAU, mostly in the form of other lynx habitat (see table below). The LAU is primarily aspen, with spruce-fir intermixed. See table below for an acreage breakdown of lynx habitat characteristics within the LAU. Non-federal land has been incorporated into the baseline.

Habitat Description	Acres of Habitat within LAU	Percent of all lynx habitat within LAU (%)
Winter forage	5,017	6
Denning	27,695	33
Other	48,393	58
Unsuitable	2,149	3
Total Lynx Habitat	83,254	100

*Other habitat consists largely of low quality foraging habitat that may be used by lynx, primarily in the summer. Aspen stands that are within 500 meters of lynx denning or winter foraging are in this other category.

There are past and ongoing actions on private land that have effects to lynx. The majority of the private land is in non-lynx habitat. Past activity on private land has reduced a minor amount of suitable lynx habitat. Approximately 9 percent of the LAU is in private ownership. This percentage was derived by dividing the total acres of the LAU on FS land (114,449) by the total acres of the LAU (124,981). Adjacent to the project area, road building, mining, and past timber harvest within about 500 acres of private land in aspen has occurred. The majority of the land is not clearcut. Logging occurred this past winter, and would most likely occur this winter. This habitat may serve as travel habitat for lynx. Downed logs are lacking, as the habitat is mapped as “other” lynx habitat. During timber harvest, lynx would most likely avoid this land. In addition, timber management practices will most likely not allow this area to progress towards denning habitat. Meaning, the area will not be able to accumulate down woody debris.

Residential and recreational use occurs on portions of scattered blocks of private land in the aspen (or other lynx habitat) on approximately 2,000 acres. The majority of private land is in the ponderosa pine habitat, which is non-lynx habitat. Housing densities are not as compacted as in

a town, and in some sections only one or two homes exist. Based on field reconnaissance, most of the private lands are forested. Recreational use varies from ATV and snowmobile use in the winter, to horseback riding and hiking in the summer. Homesites, creating non-lynx habitat, are scattered in small polygons within the other lynx habitat (aspen stands). In the long term, as aspen stands progress to conifer encroachment, there may be an increase in lynx denning habitat. However, due to human disturbance, it is unlikely a lynx would den in this habitat.

Grazing occurs adjacent to the project area on about 800 acres of private land. Past timber harvests have occurred on both private and public land, with clearcuts present in the aspen. Harvesting and grazing would likely have reduced willow habitat along portions of Silver, Horse Creek and the Mancos River. The clearcuts would provide summer foraging habitat for lynx. The mature stands are currently other lynx habitat. Lynx may travel through the area, and denning habitat may be provided in the future, as fir encroachment progresses.

Langlas Draw Salvage

In July of 2003 a wildfire burned in the Langlas Draw area on the Blanco Ranger District of the WRNF. The fire burned approximately 700 acres in spruce-fir and spruce-fir/aspen mix. Approximately 400 to 500 acres of this fire consist of a high intensity burn with no live trees remaining, the rest of the area consists of a patchy burn because there was more aspen and small meadows interspersed in the spruce-fir. The salvage operation would take place in the higher intensity burned area. Elevation of the project area ranges from 8,500 to 8,900 feet. This project is located within the South Fork of the White River Lynx Analysis Unit (LAU). This LAU encompasses the South Fork of the White River, including the headwaters. Of the 105,392 acre LAU, 62 percent is within the Flattops Wilderness. There is very little vegetation management that occurs within the LAU, and it has a low road density (0.38 miles/square mile). There is a high percentage of lynx denning habitat as a result of the spruce-fir bark beetle infestation that occurred in the 1950s. The event resulted in a large amount of large diameter dead/down trees that are now present throughout the spruce-fir habitat in the LAU.

The table below shows lynx habitat characteristics of the South Fork of the White River LAU. The numbers reflect habitat changes from the Langlas Draw Fire.

Habitat Description	Acres of Habitat within LAU	Percent of All Lynx Habitat in LAU
Winter forage	4,443	7%
Denning	45,168	74%
Other	11,161	18%
Unsuitable	626	1%
Total lynx habitat	61,398	

Stampy Timber Sale

The Stampy Timber Sale is located within the Holy Cross LAU (Unit 1) and Camp Hale LAU (Unit 2). The table below shows the various lynx habitat components of the Camp Hale and Holy Cross LAUs.

Habitat Acres	Camp Hale LAU	Holy Cross LAU
Total LAU Acres	68,325	98,137
Forest Service LAU Acres	59,889	95,305
Total habitat Acres- (% of LAU)	38,654 (56.6%)	59,939 (61.1%)
Denning Habitat- (% of Total Habitat Acres)	7,604 (20%)	17,007 (28%)
Winter Foraging Habitat	19,747	13,627
Other Habitat	10,074	28,712
Non Habitat	21,235	35,367
Currently Unsuitable- (% of Total Habitat Acres)	1,229 (3.2%)	593 (1.0%)

Unit 1 has 33 acres mapped as Unsuitable habitat, 20 acres mapped as other habitat, and 11 acres mapped as non-habitat. It is not known why some of the unit is mapped as unsuitable other than some logging has occurred in this general area. All the acres in Unit 2 are mapped as denning habitat. Based on a walk-through and data collection, the denning habitat in Unit 2 is more characteristic of "other habitat" due to the lack of down logs and lack of understory that would support snowshoe hares during the winter.

One standard of the Canada Lynx Conservation Assessment and Strategy is to maintain habitat connectivity within or between LAUs. The area from Avon to Georgetown along the I-70 corridor was identified as a key landscape linkage area for lynx in the Southern Rocky Mountain Geographic Area. Vail Pass from Timber Creek east to Guller Creek is a key linkage area to cross the I-70 corridor and lies about 8 miles to the northeast of the project area. Tennessee Pass is also a key linkage area from the Arkansas River Valley into the Eagle River Valley and lies about 6 miles south of the project area.

The project area may provide for east-west movement of lynx since the project area is located on the landscape in a narrow part of the valley and may provide movement between Eagle River Valley and Homestake Valley. Lynx traveling in this direction would have to cross US Highway 24, which has moderate to high traffic volumes during the day and low traffic volumes at night.

Limited evidence presented in the national lynx conservation reports indicates that such areas are not complete barriers to lynx movement, especially at night when human activities are at a minimum (Ruediger et al. 2000, Ruggerio et al. 2000).

The proposed units are located next to Highway 24. The area immediately surrounding both units is a moderately used winter recreation area. Camp Hale and Pando areas are a popular snowmobile area and No Name Road is used as a snowmobile route and ski-snowshoe route. The close proximity of human use and a busy highway would not provide winter diurnal security habitat for lynx within either treatment unit. There are other areas close by that would provide a much more secure diurnal security habitat. Highway use and recreational uses are also very high in the summer months, therefore the project area is not considered adequate to provide diurnal security habitat during summer months.

Roaring Fork Prescribed Fire

The project area will affect the Red Table LAU. The table below shows the various lynx habitat components within the Red Table LAU. Current conditions of the Red Table LAU are meeting the LCAS Standards of *10 percent denning* and *no more than 30 percent currently unsuitable*.

LAU Variable	Acres	Percentage
Total Acres	79,821	
Federal (NF) Area	76,593	
Total Lynx Habitat	42,987	
Denning Habitat	20,377	47
Winter Foraging	12,813	30
Other Habitat	8,967	
Currently Unsuitable	826	2

Grand Lake Trail Groomers and Bombardier

The project area includes a portion of the Upper Colorado LAU. “Groomed Trails” and “Snow Compaction–Polygons” among the groomed trail network represent LAU snow compaction as a result of the proposed project. Other areas of compaction within the LAU are the result of public motorized and non-motorized recreational use.

The proposed action occurs within habitat that is considered suitable for lynx denning and/or foraging. All 3,961 acres of ‘play area’ occur within non-habitat areas of mountain meadows and/or high elevation rocky slopes and summits. All groomed routes pass through winter foraging habitat. Small strips of denning habitat are interspersed throughout the project area with larger blocks east and west of Blue Ridge. Extensive areas of denning habitat in the LAU can be found north of the project area in Rocky Mountain National Park.

Upper Colorado LAU

The gross acreage of the Upper Colorado LAU is 219,253 acres (including 85,651 acres in Rocky Mountain National Park and 595 acres of private property) of which 154,138 acres are

lynx habitat. Ninety six percent (148,235 acres) of lynx habitat is suitable habitat. Forty seven percent (72,341 acres) of lynx habitat is denning habitat. Ninety one percent (139,493 acres) of lynx habitat is foraging habitat.

All of the above habitat amounts are within Lynx Conservation Assessment and Strategy (LCAS) recommended standards and guidelines for habitat percentages and distributions within an LAU. Connectivity within the project LAU, as well as between the project area and adjacent LAUs on the Sulphur District and the Parks District of the Routt National Forest are intact. Reintroduced lynx are known to have passed through the Upper Colorado LAU and a male spent several winter months in the northern end of the LAU (Never Summer Wilderness and Rocky Mountain National Park) before returning to the core release area in the following spring (Kurt Broderdorp, USFWS, pers comm.). No released lynx currently reside within the Upper Colorado, or adjacent LAUs (CDOW Lynx Home page, 2003).

The Upper Colorado LAU is affected by extremely popular winter snowmobiling and summer motorized recreational use; extensive hiking, backpacking, snowshoe and backcountry ski use in the Never Summer Wilderness and Rocky Mountain National Park; subdivision development on inholdings and adjacent private lands; heavy hunting pressure during September through November; an expanding mountain pine beetle epidemic causing thousands of acres of mortality in lodgepole pine trees; and timber harvest in the LAU and surrounding private lands to remove dead and dying lodgepole pine trees and decrease stand density to slow the spread of mountain pine beetles.

American Avalanche Special Use Permit (SUP)

Lynx Snow Compaction Map for the ARNF shows that the entire project area receives high numbers of users and snow compaction (see BE for mapped snow compaction baseline). The entire Jones Pass Road from Jones Pass trailhead/parking lot is also documented as having compacted snow as well. Cross-country skiers, mountaineers, snowshoers, and downhill skiers use Berthoud Pass area regularly. The same type of recreationists uses Jones Pass Road, with additional use by snowmobilers and a snowcat user.

According to the Summary of LAUs for Arapaho and Roosevelt National Forests (October 7, 2002), 43 percent of the entire Clear Creek LAU and 74 percent of the entire Fraser LAU is lynx habitat. Of the total lynx habitat, foraging habitat comprises 87 percent of the lynx habitat in the Clear Creek LAU and 92 percent in Fraser LAU. Lynx denning habitat that is also foraging habitat comprises 24 percent of the lynx habitat in the Clear Creek LAU and 58 percent in Fraser LAU.

Pre-project description of the Clear Creek LAU

Total LAU acres	Acres of lynx Habitat	Winter Forage Habitat Acres (%)	Denning Habitat Acres (%)	Currently Unsuitable Acres (%)	Non-habitat
94,884	41,749	36,231 (87%)	10,008 (24%)	2,052 (5%)	53,135

Pre-project description of the Frazer LAU

Total LAU Acres	Acres of Lynx Habitat	Winter Forage Habitat Acres	Denning Habitat Acres (%)	Currently Unsuitable Acres (%)	Non-Habitat Acres
106,316	78,264	72,224 (92%)	45,697 (58%)	3,068 (4%)	28,052

The trip on Jones Pass Road is not within the boundaries of a lynx linkage zone area, however, the other three activities at Berthoud Pass are within Berthoud Pass Linkage Zone. Lynx linkage zones are unique areas that have been identified as key connections to allow lynx to move between suitable habitats in areas that may be surrounded by non-lynx habitat. In the case of Berthoud Pass, the linkage zone is the forested habitat that goes across the pass, a narrow swath of hiding cover between the alpine tundra habitats on each side. There are another three lynx linkage zones that also cross the Continental Divide in the Clear Creek LAU; the Herman Gulch, Loveland Pass and Guanella Pass linkage zones.

The snow compaction boundary overlaps with the linkage zone as the zone receives existing high human disturbance during winter. It is possible that lynx would follow Hoop Creek. Hoop Creek begins at Berthoud Pass parking lot and goes south of Berthoud Pass, through the first easternmost switchback of Highway (Hwy) 40 (Flora Park Picnic Area) and joins West Fork Clear Creek. Hoop Creek may be used when moving through the Berthoud Pass linkage zone because there is sufficient hiding cover adjacent to the creek. Lynx could follow the creek to a point where forested cover starts to thin out and where humans and traffic are most visible. Lynx are most likely to avoid the busy parking lot at the top of the creek year-round. Many skiers park near Current Creek north of Berthoud Pass where a class site is proposed. They usually ski down from Berthoud Pass Ski Area and end at Current Creek. Old growth spruce-fir forest along the Current Creek is denning habitat for lynx. However, since this area gets high use during winter due to skiers skiing through the forest to reach the pullout parking lot, this old growth forest has snow compaction and human disturbance.

The parking lot at the Jones Pass Trailhead is heavily used during the winter by cross country skiers and backcountry skiers along with private snowmobilers. Jones Pass at the top is a huge snowplay area for all winter users. High numbers of snowmobilers are known to traverse the snow above timberline. Jones Pass Road is also used by recreationists throughout the year to access the Continental Divide National Scenic Trail. The area experiences motorized use above the timberline and on Jones Pass Road during winter. Mountaineers and skiers usually ski down through the forest on either side of Jones Pass Road from the alpine ridge back to the Jones Pass Trailhead parking lot.

Private snowmobilers and snowcat operators on Jones Pass Road already directly impact lynx habitat by noise, speed, and high number of vehicles. Lynx habitat is already impacted by individual cross-country skiers, mountaineers and snowshoers radiating from the top of Jones Pass and down through the forest and back to the Jones Pass Trailhead parking lot.

The two class sites and a ski trip at Berthoud Pass are near Hwy 40 and receive high human use daily in during winter season. Hwy 40 regularly gets high winter traffic flow from people commuting between Denver and Winter Park Ski Resort. Traffic noise and visibility is obvious from all proposed class sites. Lynx habitat already is impacted by individual winter users radiating from Berthoud Pass Parking lot and down through the forest to several different drop-off parking areas on Hwy 40 on both sides of Berthoud Pass.

Timberline Trail Relocation

The project area consists of mature and pole lodgepole pine with occasional individuals or small pockets of aspen or spruce-fir. Willow habitat exists in the tributaries of and the main-stem of Texas Creek. The table below shows the various lynx habitat components of the Grizzly Peak LAU before the implementation of this project

Habitat description	Acres of habitat within LAU	Percentage
Winter forage	9,113	30.5
Denning	2,834	9.6
Other	17,167	57.5
Unsuitable	724	2.4
Total lynx habitat	29,838	100.0

The environmental baseline status of lynx habitat within the Grizzly Peak LAU reflects habitat changes that will occur as a result of activities associated with the Illinois Creek Timber Sale. These activities have not, however, been implemented on the ground. The original habitat mapping for the Grizzly Peak LAU does not reflect these changes. A temporary increase in unsuitable habitat due to clearcutting in lodgepole pine is anticipated. A total of 436 acres will be clearcut resulting in a temporary loss of suitable lynx habitat and an increase in the unsuitable base to 724 acres. No changes in habitat suitability occur within the Grizzly Peak LAU due to activities associated with the Taylor Park Allotment or the Carpenter Land Purchase.

Lottis Campground Expansion

The project is in an area consisting primarily of early-age to mid-age lodgepole pine with clumpy patches of lodgepole pine saplings. The understory is relatively open. Few isolated Douglas fir and pole-sized aspen occur. Bark beetle killed snags exist within the project area. Common juniper, grasses and forbs are the predominant plant species in the ground cover. The northwest side of the proposed campground expansion is bordered by a 7-acre meadow consisting of mountain big sagebrush. Early to mid-age lodgepole pine borders the west side of the project area, with willow riparian along South Lottis Creek approximately 50 meters west of the proposed campground area. The east side of the project area is bounded by high rocky cliffs, and lodgepole pine.

The proposed Lottis Campground Expansion Construction project lies entirely within the Fossil Ridge LAU. Lynx habitat within this LAU is described in the following table. Approximately, 2 acres of the proposed campground expansion will occur in “other” lynx habitat and 0.7 acres will occur in non-lynx habitat. Habitat mapped as “other” and non-habitat was verified on August 8, and September 2, 2003.

Habitat Description	Acres of Habitat Within LAU	Percentage
Winter Forage	12,167	21.4
Denning	13,159	23.1
Other	31,501	55.3
Unsuitable	114	0.2
Total Lynx Habitat	56,941	100.0

The environmental baseline status of lynx habitat within the Fossil Ridge LAU reflects habitat changes that have occurred as a result of activities associated with the Kentucky Timber Sale, Super Timber Sale, Slaughterhouse Timber Sale, Park Cone Timber Sale, and the Cow Creek Road. These activities have been implemented on the ground. Thus the original habitat mapping for the Fossil Ridge LAU reflects these changes. The Cranor Land Exchange has a pending status. Activities associated with the Cranor Land Exchange will involve an exchange of private land in wilderness for public land in Taylor Park. The effects on lynx habitat within the Fossil Ridge LAU will be positive since lynx habitat will be acquired. No changes in habitat suitability are anticipated within the Fossil Ridge LAU due to ongoing activities associated with the Pitkin Allotment or the Taylor Park Allotment.

Northwest Colorado Snowmobile Club Special Use Permit (SUP)

The Bears Ears LAU has been logged in many areas in the past. Most of the cutting that occurred in the LAU took place approximately 40 years ago. Within the past 10 years there has been approximately 4,169 acres of timber harvest in the spruce-fir, lodgepole pine and aspen cover type. All timber sales have closed and logging is not presently occurring within this LAU. Timber management activities have influenced approximately 5 percent of the USFS lynx habitat in the LAU within the past 10 years.

Several grazing allotments are within the LAU for both cattle and sheep. This area has been grazed consistently by domestic ungulates for over 100 years. Currently, several ongoing Range Allotment Environmental Assessments are being prepared for this LAU. These include: Johnson-Oliver, Slater, Lost Park and Stewardship range allotments. This area has been historically used by the general public for outdoor recreation. There are many miles of roads, motorized and non-motorized trails. Recreational uses include: driving, hiking, biking, horseback riding, hunting, snowmobiling and gathering firewood. Fall hunting activity is considered high in this area. Similarly winter snowmobile activity is considered moderate. Currently the USFS permits several recreational outfitters including hunting and snowmobiling outfitters.

This action is the re-permitting of an existing activity. The currently permitted routes identified by the Northwest Colorado Snowmobile Club in the Bears Ears LAU are part of an existing database for designated and groomed over-the-snow routes with the exception of a historically used route in the BLM section of the Bears Ears LAU. This section was not previously documented in the snow compaction mapping effort because it was outside of the Forest Service

administrative boundary. The Little Snake Resource office of the Bureau of Land Management (BLM) has not designated compacted snow routes on the BLM portion of the LAU. The permit record does indicate that this section was historically used and will be amended to the compaction route maps. This amendment does not represent a net increase in compacted snow routes, but rather a clarification of the existing mapping effort. The routes considered under this BO are already part of the existing baseline and do not represent a net increase in compacted snow routes on the RNF.

The Bears Ears LAU is located in the northwest portion of the RNF. This LAU is 102,387 acres in size and contains lynx habitat as described in the table below. This LAU contains 50,091 acres (51.2 percent) of the USFS land in timber emphasis management areas and 35,232 acres (36 percent) of the USFS land in wilderness or backcountry (restrictive) management areas.

	USFS Portion of LAU	BLM Portion of LAU	Total LAU
Winter Foraging Habitat	28,520	NA	4,980
Denning Habitat	23,580 (23%)	NA	40
Other Lynx habitat	53,711	3,756	58,323
Non-lynx Habitat	10,589	0	11,134
Unsuitable Lynx Habitat	2,504 (2.95%)	**	2,504
WinDen	23,540	740	24,389
% Currently Unsuitable	2.95%	@	@

The Pagoda LAU is located in the southwest portion of the RNF. This LAU is 104,809 acres in size and contains lynx habitat as described in the table below. This LAU is almost entirely within a backcountry non-motorized Management Prescription Area.

	NF Portion of LAU	BLM Portion of LAU	Total LAU 104,399
Winter Foraging Habitat	29,887	NA	12,741
Denning Habitat	17,389 (17%)	NA	243
Other Lynx habitat	46,858	246	51,355
Unsuitable Lynx Habitat	6,568 (8%)	**	6,568
% Currently Unsuitable	7.86%	@	@

<u>Snowmobile Trail Grooming</u>

The action area includes the Bar HL, Clinetop, Coffeepot, Quartzite, and the South Fork White River LAUs. The following table shows the current composition of lynx habitat within each LAU affected by this project.

LAU Variable	Bar HL	Clinetop	Coffeepot	Quartzite	S Fork White River
Total Acres	99,373	86,154	84,580	97,120	105,392
Federal (NF) Area	95,828	85,515	82,129	96,392	104,939
Total Lynx Habitat	35,338	34,166	35,028	35,936	61,398
Denning Habitat	15,157 (43%)	16,506 (48%)	22,282 (64%)	13,690 (38%)	45,708 (74%)
Winter Forage	14,935 (42%)	6,979 (20%)	4,519 (13%)	8,423 (12%)	4,540 (7%)
Other Habitat	5,137	7,323	8,083	13,540	11,082
Currently Unsuitable	109 (0.3%)	3,358 (9.8%)	144 (0.4%)	283 (0.8%)	68 (0.1%)

Cross-country Ski Trail Grooming

The project area is the Clinetop LAU. The table below describes the current composition of lynx habitat within the Clinetop LAU.

LAU Variable	Acres	Percentage
Total Acres	86,154	
Federal (NF) Area	85,515	
Total Lynx Habitat	34,166	
Denning Habitat	16,506	48
Winter Forage	6,979	20
Other Habitat	7,323	
Currently Unsuitable	3,358	9.8

Most of the conifer forests on the White River Plateau are in structural stages that would provide cover for lynx and habitat for prey: snowshoe hare and red squirrels. Aspen and mixed aspen/conifer forests are primarily in mid-seral structural stages, and rate of regeneration is considered low. These tracts are dispersed among drainages and mesic sites throughout the LAU, which provide unbroken cover for movements, foraging, and denning.

Poole Right-Of-Way (ROW)

The proposed Poole road construction lies entirely within the Pitkin LAU. The various lynx habitat components within this LAU are described in the table below.

Habitat	**Acres**	**Percentage**
Winter forage	3,482	6.8
Denning	24,119	47.1

Other	18,611	36.5
Unsuitable	4,898	9.6
Total lynx habitat	51,110	100.0

The environmental baseline status of lynx habitat within the Pitkin LAU reflects habitat changes that will occur as a result of activities associated with the Buffalo Fork Timber Sale. These activities have not been implemented on the ground. Thus the original habitat mapping for the Pitkin LAU does not reflect these changes. No changes in lynx habitat suitability are anticipated from activities associated with the Buffalo Fork Timber Sale. A total of 53 acres of lynx denning habitat will be converted to other lynx habitat. Clearcutting activities associated with the Buffalo Fork Timber Sale will occur outside of the Pitkin LAU. No changes in lynx habitat suitability are expected to occur within the Pitkin LAU due to activities associated with the Gold Creek, Pitkin, and Willow Grazing Allotments, and the Bear Gulch and Browns Gulch Fence Projects.

The Pitkin LAU has approximately 16,483 acres of private land and 1,012 acres of state land (25.2 percent of the LAU) within the Pitkin LAU. These lands are concentrated in the Quartz Creek valley, around Pitkin and Ohio City, in Chicago Park north of Pitkin, and in the Gold Creek drainage north of Ohio City. Consequently, human activity and development is concentrated in these same areas.

Roach Grazing Allotments

The proposed action will affect the Laramie LAU. This LAU encompasses 80,864 acres of USFS lands comprised of forested lands, aspen parks, sagebrush shrublands, grasslands, and slab rock above 9,000 feet elevation. The majority of this LAU is comprised of lands within the Rawah Wilderness. Only 6 percent of the LAU is non-habitat. Combined private and State lands comprise less than 1 percent of the LAU. This LAU presently meets the LCAS Standards of *10 percent denning* and *no more than 30 percent currently unsuitable* (see following table).

Habitat	Acres	Percentage
UNSUITABLE HABITAT	17,454	21
SUITABLE HABITAT	58,558	88
FORAGE (w/o denning)	26,527	25
DENNING (also forage)	45,697	41
OTHER HABITAT	2,973	23

Livestock grazing can have a direct effect on snowshoe hare habitat if it alters the structure or composition of native plant communities. Throughout the Rocky Mountains, grazing has been a factor in the decline or loss of aspen as a seral species in subalpine forests (LCAS 2000). Early reports of patterns of livestock use and their impacts on the vegetation suggest that to at least some degree livestock had altered vegetative conditions in the ARNF by the late 1800s (Veblen and Brown 2001). However, Veblen and Brown (2001) caution that research lacks information

on the extent or conditions of aspen stands prior to the late 19th century for comparison with present distribution and age structures. They surmised that logging and burning during the late 19th and early 20th centuries increased the area of aspen over its former extent, and thus the current trend towards less aspen may be a return to conditions more typical of the reference period. Still, the historical variation for aspen is not quantified.

Vegetation descriptions in the Roach landscape assessment and in permanent range allotment records indicate that rangeland vegetation in the grasslands has been drastically changed. Introductions and spread of non-native grasses and forbs (including some noxious weeds) has produced changes primarily in the species composition mix and to a lesser extent in vegetative structure.

Troublesome, Pete Gulch, Monument and Grass Grazing Allotments

The two following tables are taken from the Routt National Forest Rationale for the Designation of Lynx Analysis Units and Lynx Habitat Mapping Criteria, prepared by Robert C. Skorkowsky, Wildlife Biologist for the USFS, Hahns Peak Bears Ranger District (February 28, 2003). These tables summarize the lynx habitat baseline in the LAUs affected by this project.

Troublesome LAU pre-project lynx habitat descriptions

Total LAU Acres	Acres of Lynx Habitat	Winter Forage	"Other" lynx Habitat	Denning Habitat	Currently Unsuitable	Non-Habitat
49,874	46,117	1,831 (3.97 %)	39,642	3,192 (6.92 %)	1,422 (3.14%)	3,757

Sheep Mountain LAU pre-project lynx habitat descriptions

Total LAU Acres	Acres of Lynx Habitat	Winter Forage	"Other" lynx Habitat	Denning Habitat	Currently Unsuitable	Non-Habitat
106,049	85,476	19,590 (18.5%)	57,988	20,156 (19%)	5,567 (5%)	12,531

York Gulch STA

This project will affect the Clear Creek LAU. The following table shows a pre-project break-down of the various lynx habitat components of the Clear Creek LAU.

Total LAU Acres	Acres of Lynx Habitat	Winter Forage	Denning Habitat	"Other" lynx habitat acres	Currently Unsuitable
94,884	41,749	36,231 63%	10,008 24%	N/A	2,052 5%

The proposed sale of the 15 lots within the Clear Creek LAU would be a permanent loss of 34 acres of designated lynx habitat. The following table shows a complete break-down of the various lynx habitat components of the York Gulch property.

Clear Creek LAU Habitat Description	Acres affected by project	Change in the percent of habitat in LAU	Updated percent of all lynx habitat in LAU
Winter Forage	12	<1%	63%
Denning (also foraging)	0	0	24%
Other habitat	0	0	8%
Unsuitable	22	<1%	2%
Non-Habitat	2	<1%	42%

Faraway Land Exchange

The GMUG National Forests' lynx analysis has identified suitable lynx habitat in all of the parcels proposed for exchange through this proposal. All of these areas lie within the 30,979-acre Little Cone Lynx Analysis Unit (LAU). The following table provides an acreage breakdown of the lynx habitat by habitat category within this LAU as identified by Forest wildlife biologists. The proportion of the total LAU acreage occurring on USFS and private land for each habitat category is shown in parenthesis.

HABITAT TYPE	LAU TOTAL (AC.)	FOREST SERVICE (AC.)	PRIVATE (AC.)
Total Acres LAU	30,979 Acres		
Total (Ac.)-Forest Service		20,446 (66.0%)	
Total (Ac.)-Private			10,533 (34.0%)
Denning Total	9,022	8,090 (90.0%)	932 (10.0%)
Other Winter Foraging	906	613 (67.0%)	293 (33.0%)
Other Habitat	5,429	3,960 (72.9%)	1,469 (27.1%)
Unsuitable	0	0	0
Total Lynx Habitat	15,357	12,663 (82.5%)	2,694 (17.5%)
Non-Habitat	15,622	7,783 (49.8%)	7,839 (50.2%)

Based on LAU data derived from the GMUG National Forest's lynx database, the table below provides an acreage breakdown of the lynx habitat identified within the Federal and non-Federal parcels:

Parcel	Denning (AC.)	Other Winter Foraging (Ac.)	Other Habitat (Ac.)	Unsuitable (Ac.)	Non-Habitat (Ac.)
Parcel A	25.1	0.0	8.0	0.0	6.9
Parcel B	3.7	0.0	5.2	0.0	71.1
Total	28.8	0.0	13.2	0.0	78
Total lynx habitat is 42 acres					
Grove Placer	152.8	0.0	7.2	0.0	0.0
Total lynx habitat is 160 acres					

Round Hill Land Exchange

Elevenmile Reservoir

This property is not considered suitable lynx habitat. Of the 478 acre site to be conveyed to Denver Water, 110 acres are underwater and 10 acres contain maintenance sheds and resident buildings. The remaining 358 acres is dominated by ponderosa pine and Douglas fir.

Round Hill Property

This property contains a diversity of forest types and riparian acreage. The higher elevation area within the property consists of subalpine fir and spruce forest. Approximately 9 acres of aspen forest covers the lower elevation of the property. Sheep Creek flows through the property and contains approximately 25 acres of riparian and wetland habitat. The wetlands would be classified as shrub/scrub dominated by dense willows (*Salix sp*.). These riparian wetlands are composed of sedges (*Carex sp.)*, alder (*Alnus*), and willows. Extensive beaver activity has occurred within this drainage. This property is within the Buffalo Peaks LAU and Sheep Creek may provide a travel corridor for the Canada lynx. The 400-acre property has not been surveyed to classify suitability for the lynx. However, the property does contain diverse habitats that could be attractive to the lynx.

Harrington Ranch Property

The property is a mixed spruce and lodgepole pine forest with some ponderosa pine on western and southern exposed hills. Open meadows with scattered aspen dominate parts of the property. The forest is characterized as a mixed age stand with some signs of insect infestations and disease. The meadows have been grazed on a regular basis and show signs of erosion. An intermittent stream flows through the property. The riparian area and stream channel condition shows signs of erosion and degradation likely resulting from cattle grazing activities.

The property is located within the Buffalo Peaks LAU. The lack of habitat suitable for snowshoe hare, in the form of dense sapling conifers and dense willow cover, would limit foraging opportunities for the Canada Lynx. In its current condition, the Harrington Ranch property may not be considered suitable habitat. However, the USFS ownership of this parcel will have a

beneficial effect on the lynx through acquiring 160 acres of private property for inclusion in the Buffalo Peaks LAU.

Thunder Butte Property

The property is mixed-conifer, montane forest typical of this part of the Pike National Forest. Ponderosa pine and Douglas fir dominate the forest with some mixed stands of aspen. Approximately 25 acres of ponderosa pine and 5 acres of Douglas fir exist on the property. The property consists of steep slopes and rocky soils. Two separate parcels will be acquired from the area,

In June 2002, the Thunder Butte area was burned in the Hayman Fire. The fire burned with low intensity through the parcel in section 23, meaning few trees were consumed and mainly the forest understory burned. The parcel in section 26 was heavily forested with some mature ponderosa pine. This area burned with high intensity and likely the forest cover now consists of standing dead timber.

Wright Mining Claims Property

Of this 83 acre acquisition, a large portion will be classified as alpine habitat. Some subalpine spruce fir forest and riparian habitat is included in these properties. Approximately 2.3 acres of riparian habitat exists along the Huerfano River. This habitat is composed of dense willows and alders. No extensive wetlands exist on the property, although some of the riparian habitat has vegetation such as sedges and rushes (*Juncus sp.)* present. No degradation of water quality from historical mining operations was noted.

The 2.3 acres of riparian habitat along the Huerfano River may provide a travel corridor for the Canada Lynx. There will be a beneficial effect to Canada lynx by the USFS acquiring these private parcels and preventing future development of the mining claims. Approximately 2.5 acres of the property would be considered suitable lynx habitat. Most of this property is above tree line and would not be considered suitable lynx habitat.

The Round Hill and Harrington Ranch acquisitions will affect the Buffalo Peaks LAU. The Wright Mining claim will affect the Sangres LAU (see tables below).

Pre-project description of the Buffalo Peaks LAU

Total LAU Acres	Total Acres of Lynx Habitat	Winter Forage Habitat Acres (%)	Denning Habitat Acres (%)	Currently Unsuitable Habitat Acres (%)	Non-Habitat Acres
117,945	70,623	34,153 (48%)	39,166 (56%)	418 (<0.01%)	47,322

Pre-project description of the Sangres LAU

Total LAU Acres	Total Acres of Lynx Habitat	Winter Forage Habitat Acres (%)	Denning Habitat Acres (%)	Currently Unsuitable Habitat Acres (%)	Non-Habitat Acres

155,009	96,741	72,432 (75%)	72,768 (75%)	300 (<0.01%)	58,269

Hahns Peak Water Coalition

The Hahns Peak Water Coalition Project is located on the southern border of the Little Snake River LAU. The Little Snake River LAU is located in the North-central portion of the Routt National Forest.

This LAU is 77,254 acres in size and contains lynx habitat as described in the following table. This LAU contains 31,619 acres (42.8 percent) of the USFS land in timber emphasis management areas and 61 acres (0.07 percent) of the USFS land in wilderness or backcountry (restrictive) management areas.

	National Forest	Private in NF	
	NF Portion of LAU	NF Portion of LAU	Total LAU
Winter Foraging Habitat	11,500	N/A	3,181
Denning Habitat	12,363 (16%)	N/A	4,044
Other Lynx habitat	44,127	3,178	47,265
Non-lynx Habitat	10,742	747	11,489
Unsuitable Lynx Habitat	2,199 (3.55%)	N/A	2,199
% Currently Unsuitable	3.55%	N/A	N/A

EFFECTS OF THE ACTION

Direct and Indirect Effects

The LCAS has been accepted by the Service and the USFS as the standard in which project effects are evaluated. Primary evaluations are based on the effects to the lynx habitat baseline within the affected LAU. In particular is the amount of "currently unsuitable" (no more than 30 percent) and "denning" habitat (no less than 10 percent). If the project meets the LCAS Standards, the Service considers the effects of the project to be "insignificant" or "discountable". "Projects that comply with the standards and guidelines in the LCAS in most cases would not adversely affect lynx (October 25, 2000, biological opinion)."

Sun Down Bowl Chair 5 Upgrade

1) *Effects to lynx habitat connectivity*

A Standard of the LCAS is to maintain habitat connectivity within or between LAUs. The area from Avon to Georgetown along the I-70 corridor was identified as a key landscape linkage area for lynx in the Southern Rocky Mountain Geographic Area. The project area is south of the western end of that general linkage area. Specific to the Vail Ski Area (VSA), the critical area for north-south crossing of I-70 would seem to be in the area from Timber Creek (west of Vail

Pass) to Guller Creek (east of Vail Pass), where large urban centers do not exist. That area lies east of the project area and represents about a 10-mile wide corridor where lynx would not encounter urban centers while trying to cross I-70. The USFS has not identified any key landscape linkage corridors across VSA. Urban development forms a barrier to lynx movements and studies indicate that highways with 4,000 or more vehicles a day in conjunction with urbanization may be serious obstacles to lynx movement (Ruediger et al. 2000). However, east-west movements of lynx through VSA that lead to Vail Pass may eventually lead to north-south crossings of I-70 between Timber and Guller Creeks. Lynx traveling through VSA must negotiate a ski area that receives year round recreational use that is very high during winter ski season operating hours and low to moderate during other periods. Limited evidence presented in the national lynx conservation reports indicates that such areas are not barriers to lynx movement, especially at night when human activities are at a minimum or absent (Ruediger et al. 2000, Ruggerio et al. 2000). Human activity associated with this project may deter lynx from using the immediate area in which the project will occur.

Much of the Camp Hale LAU is designated and managed as a forested landscape linkage that involves habitat connectivity over Tennessee Pass, across the upper Eagle Valley, and with the Gore Range, both east and west of Vail Pass. However, the current project area is located in the geographic center of VSA. While portions of the developed ski area could facilitate lynx movements, most of the current project area is unforested and probably contributes little to potential lynx movements. In conclusion, this project will have a negligible effect to lynx habitat connectivity.

2) *Effects to the lynx habitat baseline*

The table below represents post-project changes to the Camp Hale LAU

Habitat Description	Acres Affected by Project	Change in % of Habitat in LAU	Updated % of all lynx habitat in LAU [a]
Winter Forage	0.1	<0.001	51.1
Denning	0.1	<0.001	19.7
Other	0.0	0	26.1
Unsuitable	0.2	<0.01	3.2 (no change)
Total Lynx Habitat	0.2	<0.01	100

Denning

As described in the preceding section, the spruce-fir stands located along upper portions of the existing Chair 5 Lift (0.2 acres affected) are classified and structurally suitable as denning habitat. Both stands are presently skied and closely associated with ski area facilities (i.e., Sun Down Bowl: Wildwood Restaurant and the tops of Lifts 3 and 7; Chair 5: Patrol Headquarters and Restaurant and the tops of Chairs 5, 4, and 11) that generate appreciable spring and summer maintenance and recreational activity that would likely preclude any lynx from denning nearby. Nevertheless, both stands are classified as denning habitat and quantification of the loss of this habitat to lift development and upgrading is required to track lynx habitat conditions in the LAU. The 0.2 acres of affected denning habitat represents less than 0.01percent of the 7,604 acres of denning habitat present in the Camp Hale LAU (see table above). This would result in a change of less than 0.01 percent of denning habitat as a percentage of total lynx habitat (38,654 acres) in the LAU. Denning habitat Standard of no less than 10 percent of lynx habitat in a LAU would

be met at the conclusion of this action with 19.7 percent of the total lynx habitat remaining as denning habitat. In conclusion, the effects of this action on denning habitat within the Camp Hale LAU would be insignificant (less than 0.01 percent).

Winter forge habitat

Both spruce-fir stands at the top of Chair 5 are mapped as winter forage habitat that currently supports snowshoe hares and red squirrels. The 0.1 acres of affected winter forage habitat represents less than 0.01 percent of the 19,747 acres of winter forage habitat present in Camp Hale LAU. This would also result in a change of less than 0.01 percent of winter forage habitat. Winter forage habitat would remain at 51.1 percent of the lynx habitat within the Camp Hale LAU.

Based on recommendations of the Lynx Biology Team developed after Ruediger et al. (2000), the Service (Kurt Broderdorp, USFWS, 2003, pers. comm.) has recommended that a minimum of 15,000 acres of lynx winter forage habitat should be maintained in each LAU to sustain habitat viability in the Southern Rockies Ecosystem. The Camp Hale LAU will continue to meet this recommendation after implementation of this project. In conclusion, the effect of this action on winter forage habitat would be insignificant (less than 0.01 percent)

"Other" lynx habitat

None affected

Currently unsuitable habitat

The 0.2 acres of "unsuitable" habitat created would represent less than 0.01 percent increase in the 1,229 acres of "unsuitable" lynx habitat now present in the Camp Hale LAU. "Unsuitable" lynx habitat would remain at 3.2 percent of the total lynx habitat in the Camp Hale LAU (see table above). In conclusion, the effect of this action on the lynx habitat baseline would be insignificant.

3) *Effects to diurnal security*

The two spruce-fir stands fragmented by this project are not effective as diurnal security habitat. There is too much year-around human activity in and around the area. In conclusion, this project would have a negligible effect on lynx diurnal security.

Tiny Beaver Commercial Firewood Sale

Before a road is opened for firewood collection, it will be specifically evaluated to identify any special circumstance that may require additional mitigation not identified in the project description or conservation measures. Some sections of closed roads fall within or adjacent to winter or denning habitat. These areas were not included in the old harvest, probably due to inaccessibility or other limitations. The extent of individual tree removal in these areas is expected to be minimal, as most of this condition exists in the lower area and along publicly open roads that will not be harvested as part of this project.

Collection of firewood is limited to within 300-feet of administratively closed roads. In the lower area, available firewood is widely scattered, with little or no areas of heavy concentration. In the upper area, there are large pockets of standing dead suitable for harvest that could result in large openings. Both areas have some extent of coarse woody debris on the ground, most of which is decayed beyond usefulness as firewood. Effects and potential effects are discussed below:

1) *Human activity may temporarily displace and/or deter lynx from the project area*.

People driving into the area and collecting firewood may displace and/or deter lynx from using the area. Since lynx are tolerant to human activities (Ruediger 2000), the temporary effect (3 to 5 years) of people driving into the area and collecting firewood is negligible. In addition, road-use will not be allowed at the conclusion of this project.

2) *Firewood collecting (100 to 300 cords) will reduce ground cover.*

Since ground cover provides lynx with a sense of security, the reduced ground cover from firewood collecting may result in lynx avoiding the project area. Considering the amount of wood removed (estimated 100 to 300 cords and within 300 feet of the road), the effect of reduced ground cover on the Trout Handkerchief LAU is discountable.

3) *Effect to denning habitat.*

Down-woody debris is essential for lynx denning habitat. Degradation to denning or foraging habitat resulting from firewood removal is expected to be insignificant. The effect of firewood collecting on lynx denning habitat within the Trout Handkerchief LAU will be nearly immeasurable. The effect of firewood collecting on lynx habitat will have no measurable effect (less than 0.01 percent) on the Trout Handkerchief LAU baseline.

Pogue and Crystal Lakes Commercial Firewood Sale

Before a road is opened for firewood collection, it will be specifically evaluated to identify any special circumstance that may require additional mitigation not identified in the project prescription or conservation measures. There are a few, limited sections of closed roads that fall within or adjacent to winter or denning habitat, as these areas were not included in the old harvest, probably due to inaccessibility or other limitations. The extent of individual tree removal in these areas is expected to be minimal to none.

Collection of firewood is limited to within 300 feet of administratively closed roads. Available firewood is scattered throughout the project area, with little or no areas of heavy concentration. Most of the post-harvest remaining snags and coarse woody debris appear to be decayed beyond useful salvage as firewood. Suitable and available material appears to be mostly recent downfall across or near roads and nearby lightening-strike trees. These conditions will limit the extent of impacts to lynx habitat to minimally reducing the effectiveness of road-buffer habitat along roads that will not be open for use except by the operator during periods of operation. Effects and potential effects are discussed below:

1) *Human activity may temporarily displace and/or deter lynx from the project area*.
People driving into the area and collecting firewood may displace and/or deter lynx from using the area. Since lynx are tolerant of human activities (Ruediger 2000), the temporary effect (3 to 5 years) of people driving into the area and collecting firewood is negligible. In addition, road-use will not be allowed at the conclusion of this project.

2) *Firewood collecting (100 to 300 cords) will reduce ground cover.*

Since ground cover provides lynx with a sense of security, reducing the ground cover from firewood collecting may result in lynx avoiding the project area. Considering the amount of wood removed (estimated 100 to 300 cords and within 300 feet of the road), the effect of reduced ground cover on the Trout Handkerchief LAU is discountable.

3) *Effect to denning habitat*

Down-woody debris is essential for lynx denning habitat. Degradation to denning or foraging habitat resulting from firewood removal is expected to be insignificant. The effect of firewood collecting on lynx denning habitat within the Trout Handkerchief LAU will be nearly immeasurable. With a less than 0.01 percent change in the denning component of the Trout Handerchief LAU, the Service considers this an insignificant effect.

Rito Hondo and Cold Springs Fuels Treatment

The potential direct effects of the Rito Hondo and Cold Springs Fuels Treatment Projects were analyzed using USFS GIS layers for lynx habitat and fuels projects. This analysis process overlays the two GIS layers and calculates the acreages where there is overlap. For the purpose of this analysis, all overlaps where prescribed fire may be used were projected to result in a conversion to unsuitable habitat due to potential effects on the small tree understory component and/or coarse woody debris. This is a conservative approach that may or may not actually occur on the ground due to the variability associated with the use of prescribed fire.

1) *Mechanical manipulation in pinyon/juniper forest-type.*

The mechanical manipulation activity would have no effect on Canada lynx or their primary habitat types since this activity is limited to dry non-habitat types such as pinyon/juniper communities.

2) *Chainsaw manipulation pinyon/juniper forest-type.*

The chainsaw manipulation activity is also limited to the pinyon/juniper communities and would therefore have no effect on Canada lynx since only non-habitat types are involved. In addition, this activity is relatively small and not within any linkage areas.

3) *Prescribed Fire*

The prescribed fire activity type could potentially occur throughout much of the Rito Hondo Planning Area, including mid-to-upper elevation areas that are currently mapped as lynx habitat. As noted previously, prescribed fire has been dropped from consideration within the Cold Springs Planning Area. Therefore, no effects on lynx habitat are associated with this activity type in this particular planning area. The results of the effects analysis on Canada lynx are displayed in the table below.

Post-Project Habitat Conditions for the Rito-Archuleta LAU.

LAU	Denning Acres	Winter Forage	Other Habitat	Currently Suitable	Currently Unsuitable	Total Habitat	Non- Habitat
Existing Condition	13,493 (31.6%)	6,316 (14.8%)	17,764 (41.7%)	37,573 (88.1%)	5,068 (11.9%)	42,641 (45.3%)	51,477 (54.6%)
Proposed Action: Rito Hondo	148 ac.	47 ac.	37 ac.	232 ac.	232 ac.	No Change	No Change
Proposed Action: Cold Springs	No Change	No Change	No Change	No Change	No Change	No Change.	No Change.
Total % Change	(0.3%)	(0.1%)	(0.1%)	(0.4%)	(0.5%)	No Change	No Change
Post-Project Habitat Condition	13,345 (31.3%)	6,269 (14.7%)	17,727 (41.6%)	37,341 (87.6%)	5,300 (12.4%)	42,641 (45.3%)	51,477 (54.6%)

As shown in the table above, there are no direct effects to lynx habitat from the Cold Springs Fuels Treatment Project. This is because prescribed fire has been dropped as a potential activity in favor of mechanical and chainsaw manipulation treatments in dry forest types such as pinyon/juniper stands. In the Rito Hondo project area, however, prescribed fire will still be used wherever possible to achieve fuels treatment objectives. This in turn may directly affect 148 acres of denning habitat, 47 acres of winter foraging habitat, and 37 acres of “other” lynx habitat within the project area. As noted previously, this is a conservative approach that assumes all prescribed fire treatment acres will result in habitat that remains unsuitable for about a 10 to 15 year time period. Sprouting and/or regrowth of the understory component should result in a return to suitable habitat conditions after this time frame. It is therefore determined that there will be direct effects on Canada lynx and/or their primary habitats, but that these effects would not be adverse due to the minimal amount of habitat involved. In conclusion, the amount of suitable habitat (232 acres) that will be converted to an unsuitable condition is insignificant (less than 1 percent) in comparison to the amount of suitable habitat (37,573 acres).

Projects implemented during the late spring/early summer periods always offer a slight possibility that individual lynx are denning and/or present in the immediate vicinity. The possibility of this, however, is even less likely in the Rito Hondo/Cold Springs area due to the dry forest types and minimal amount of lynx habitat involved. For example, all kittens found during the 2003 season were located in spruce-fir forests types at elevations between 10,630 feet and 11,670 feet (Shenk 2003).

There are few potential indirect effects associated with the Rito Hondo or Cold Springs Fuels Treatment Projects. Where prescribed fire is used, there could be an indirect decrease in habitat quality for prey species such as snowshoe hare and red squirrels due to temporary influences on browse vegetation. Although information on snowshoe hares is lacking for the area, evidence of red squirrels was noted during field reviews. Lynx could also be temporarily displaced from the vicinity of the project area during the fuels treatment operations. This type of displacement could last from one to four weeks during the late spring and/or fall periods with the use of prescribed fire. Mechanical treatment activities could also displace lynx due to disturbances from chainsaws, vehicles, and other equipment, and be restricted primarily to the dry periods (late spring through early fall). Since the disturbance is temporary and considering the fact that lynx are tolerable to human activities (Ruediger et al. 2000), the effect on lynx will be discountable.

Southwestern willow flycatcher (*Empidonax traillii extimus*)

A review of the mapped potential habitat that borders the Rito Hondo Fuels Treatment Project or could be potentially influenced by treatment activities (Bighorn Creek Reach 2, Rito Hondo Reach 1 and 2) indicates that approximately 9.1 acres or 0.43 percent of the environmental baseline is associated with this analysis. However, only about 0.4 linear miles (approx. 2 acres) of this was verified as being suitable habitat during the 2002 surveys (Alterman 2002). This 2 acre area will be avoided during the nesting season (March 15-August 1) and given a 100 foot buffer (see BA for a complete description of Mitigation Measures).

The removal of juniper from riparian areas is expected to have a beneficial effect on southwestern willow flycatcher habitat by improving conditions for the soil, water, and native willows (Campbell, Jr. 1999). Based on this information we concur that the Rito Hondo Fuel Treatment Project "may affect, but is not likely to adversely affect" the southwestern willow flycatcher.

Shilling Springs Fuels Treatment

The potential direct effects of the Shilling Springs Fuels Treatment Project were analyzed using USFS GIS layers for lynx habitat and fuels projects. This analysis process overlays the two GIS layers and calculates the acreages where there is overlap. For the purpose of this analysis, all overlaps where prescribed fire may be used were projected to result in a conversion to unsuitable habitat due to potential effects on the small tree understory component and/or coarse woody debris. This is a conservative approach that may or may not actually occur on the ground due to the variability associated with the use of prescribed fire.

1) *Mechanical manipulation in pinyon/juniper forest-type*

The mechanical manipulation activity would have no effect on Canada lynx or their primary habitat types since this activity is limited to dry non-habitat types such as pinyon/juniper communities.

2) *Chainsaw manipulation in pinyon/juniper forest-type*

The chainsaw manipulation activity is also limited to the pinyon/juniper communities and would therefore have no effect on Canada lynx since only non-habitat types are involved. In addition, this activity is relatively small and not within any linkage areas.

3) *Prescribed Fire*

The prescribed fire activity type could potentially occur throughout much of the Shilling Springs Planning Area, including north aspect mixed-conifer slopes that are currently mapped as lynx habitat. The results of the effects analysis on Canada lynx are displayed in the table below.

Post-project habitat conditions for the La Jara LAU.

La Jara LAU	Total Denning Acres	Winter Forage	"Other" Habitat	Currently Suitable Habitat	Currently Unsuitable Habitat	Total Habitat	Non- Habitat
Existing Condition	17,482 (29.2%)	13,295 (22.2%)	26,641 (44.4%)	57,418 (95.7%)	2,563 (4.3%)	59,981 (60.1%)	39,880 (39.9%)
Proposed Action	-66 ac.	No Change	No Change	- 66 ac.	+ 66 ac.	No Change	No Change
Total % Change	(-0.1%)	No Change	No Change	(-0.1%)	(+ 0.1%)	No Change	No Change
Post-Project Habitat Condition	17,416 (29.1%)	13,295 (22.2%)	26,641 (44.4%)	57,352 (95.6%)	2,629 (4.4%)	59,981 (60.1%)	39,880 (39.9%)

As shown in the table above, the use of prescribed fire could directly affect 66 acres of denning habitat. However, there are no other mapped lynx habitat types that could be affected. As noted previously, the mapped denning habitat occurs in four separate blocks that represent mixed-conifer forest types on north aspects within the planning area. This analysis uses a conservative approach and assumes that all of these areas will be treated and results in habitat conditions that remain unsuitable for a 10 to 15 year time frame. Sprouting and/or regrowth of the understory component should result in a return to suitable habitat conditions after this time period. It is therefore determined that there will be direct effects on Canada lynx and/or their primary habitats, but that these would not likely be adverse effects due to the minimal amount of habitat involved. Based on the amount of suitable habitat (57,418 acres), the conversion of 66 acres (less than 1 percent) will have an insignificant effect on lynx.

Projects implemented during the late spring/early summer periods always offer a slight possibility that individual lynx are denning and/or present in the immediate vicinity. The possibility of this, however, is considered unlikely in the Shilling Springs area due to the dry forest types and minimal amount of lynx habitat involved. All kittens found during the 2003 season, for example, were located in spruce-fir forests at elevations between 10,630 feet and 11,670 feet (Tanya Shenk, CDOW, pers. comm., 2003).

There are few potential indirect effects associated with the Shilling Springs Fuels Treatment Project. However, there could be an indirect decrease in habitat quality for prey species such as snowshoe hare and red squirrels where fire is used due to temporary influences on browse vegetation. Although information on snowshoe hares is lacking for the area, evidence of red squirrels was noted during field reviews. Lynx could also be temporarily displaced from the vicinity of the project area during the fuels treatment operations. This type of displacement could last from one to four weeks during the late spring and/or fall periods with the use of prescribed fire. Although unlikely, it is possible that mechanical treatment activities could also displace lynx due to disturbances from chainsaws, vehicles, and other equipment if lynx are moving through the non-habitat areas. Since the disturbance is temporary and considering the fact that lynx are tolerable of human activities (Ruediger et al. 2000), the effect on lynx will be discountable.

Mexican spotted owl (*Strix occidentalis lucida*)

Documentation of Mexican spotted owl (MSO) on the RGNF is questionable. From 1990 to 1994 the RGNF conducted surveys that did not result in the identification of any MSO. Historically, only one unconfirmed record has been recorded. This record was later dismissed as a misidentification (Randy Ghormley, USFS, pers. comm. 2003).

Within the project area, there exists only one area of marginal habitat. This 70 acre area contains vegetation that marginally meets appropriate MSO vegetation habitat description. The area in question has experienced fire suppression that has resulted in a changed vegetation-type (a conversion from Ponderosa pine to Doug/fir). By implementing this project, the RGNF will be able to facilitate a return to normal vegetation-type (e.g., Ponderosa pine). Although the current vegetation-type is marginal MSO habitat, the topographic features do not meet MSO habitat requirements as described by Johnson (1997).

Based on the fact that MSO has been documented in adjacent Costilla County, there exists a chance that an individual owl may be using the area. If an owl did happen to be in the area, the effect of displacement would be negligible. In conclusion, the marginal MSO vegetation and lack of appropriate topographic features validate our concurrence with the RGNF that this project "may affect, but is not likely adversely affect" the MSO.

Horse Creek Timber Sale

Timber harvest units 1 through 7 are mapped as "non-habitat" for lynx. These units are mature aspen stands greater than 500 meters from lynx "denning" or "winter forage" habitats.

1) *The effects to the lynx habitat baseline*

For this discussion, short term refers to 20 years or less; and long term represents 20 years or more. Nine units have been mapped and proposed for harvest (see BA for Unit details and locations). Direct impacts would include the loss of 13 acres of denning habitat in unit 9. Field reconnaissance discovered the unit placement occurs where aspen dominates. This unit is mapped denning habitat. Although mapped as denning habitat, this unit lacks denning characteristics (i.e., large downed wood, root wads, or rock) and does not provide winter or summer forage habitat (Kristen Philbrook, SJNF, pers. obs. 2003).

Post-harvest (6 to 8 weeks) would convert 12 acres of mature aspen stands (future denning habitat) to a more favorable snowshoe hare habitat. Within 6 to 8 weeks, aspen "suckers" will appear and provide quality summer forage for snowshoe hares. This summer forage opportunity would exist until the aspen canopy opens and the trees reach pole size. Since aspen is a deciduous species (loses its leaves in the fall) it does not provide sufficient thermal cover during the winter months. In the short term, about 10.8 acres of summer forage habitat would exist for lynx. Within this unit is an area that will not be harvested. Approximately 1.2 acres of young conifer will be maintained to provide some winter forage habitat for long term goals. A minor amount of poor quality denning/winter forage habitat (about 10.8 acres) would be harvested.

Harvest of unit 8 would occur in low quality lynx habitat (other lynx habitat). Field reconnaissance found that these stands are currently aspen stands within 500 meters of denning habitat. Similar to what would occur in unit 9, harvest would convert 6 acres of an older stage of aspen to a younger stage of aspen. Summer foraging habitat would still be maintained. Clearcutting of units 8 and 9 would increase the length of time about 19 acres would convert to fir and provide denning habitat for the long term (about 90 years). Because the amount of denning habitat lost is minor, and is on the edge of denning habitat, it is not suspected that this loss would lessen the lynx's ability to den in the LAU. A benefit of the harvest is the mosaic of young and old stands allowing lynx the opportunity to forage in close proximity to denning habitat (Ruediger et.al. 2000). Changes to the Mancos LAU lynx habitat baseline are shown in the following table.

Habitat Description	Acres affected by project	Change in the percent of habitat w/in LAU	*Updated percent of all Lynx habitat within LAU
Winter Forage	0	0	6
Denning (includes understory of winter foraging)	13	.10	33
Other	6	0	58
Unsuitable	0	0	3
Total lynx habitat	19	.10	100

*acres reflect a change to the habitat acres as they are identified from the LAU map.

The construction of approximately 0.25 miles of temporary road to access the harvest units will be in lynx denning habitat. This action would convert approximately 1 acre of denning habitat to unsuitable habitat for the long term. Once harvesting is completed, the closed road (inaccessible to driving) would provide summer foraging habitat in the short term for lynx to utilize. Young spruce-fir would regenerate on the road and be tall enough in approximately 40 to 60 years to be later mapped as lynx winter forage habitat. The time of construction to the time of the road closure would be less than two years. Based on field reconnaissance, the road to unit 8 has no barrier, so is not technically closed. It would be upgraded, but trees would not be removed from the prism, as a cleared road prism exists. It would also be closed in a manner making it inaccessible to vehicle use following harvest of the unit.

Timber harvesting of unit 9 could result in lynx not using the area as winter forage habitat. However, this effect will be temporary as regenerating aspen will eventually provide winter

forage habitat. Conservation measures that would retain lynx winter forage habitat would allow lynx to use a portion of this 12 acre unit during the winter months following activity. Lynx would most likely avoid using unit 8 to travel or forage in during the summer for about the 1 month when harvest activities occur. In conclusion, the effects to winter forage habitat will be temporary and insignificant (less than 1 percent).

2) *Effects of "temporary road" construction, unclassified road use, and road closure*

Any unclassified roads that are closed in lynx habitat may increase disturbance in denning and other lynx habitat for the short term. Road decommissioning of unclassified roads not used to access units would occur after timber harvesting, and would require heavy equipment producing loud but localized noise. This may cause lynx to avoid the area, and may in a minor way decrease the ability of the denning polygon to provide undisturbed denning habitat for the short term. The long term benefits of roads that may be decommissioned would outweigh the short term negative avoidance effects. Decommissioned roads would decrease access of recreational vehicles and perhaps pick-ups for the long term, with a minor increase in undisturbed habitat in denning and other lynx habitat. This may make the area more attractive for a lynx to utilize.

The 0.25 miles of "temporary road" and the use of "unclassified" roads will be closed and obliterated at the conclusion of this project. In an effort to move towards Forest Plan "open road density guidelines," activities associated with the closure and obliteration of the "temporary road" and all "unclassified roads" used in this action will have a short-term insignificant effect to lynx. However, the eventual closure and obliteration of these roads will ultimately result in a benefit to lynx.

2) *The effects of human disturbance*

Indirect effects may include avoidance of the project area by lynx for the short term due to disturbance. The probability of a lynx using the denning polygon during the time logging occurs is unlikely given the Mancos LAU has over 27,000 acres of denning habitat. Each of the two units in lynx habitat would take approximately 1 month to complete. Actions include increased human presence, logging trucks on roads, road building and tree removal activities, all resulting in intense noise. This disturbance would likely cause a lynx to use alternate areas of the LAU for the short term. However, the LCAS does not consider human disturbance of this nature to have a significant effect on lynx (Ruggiero 2000).

<u>Langlas Draw Salvage</u>

1) *Effects on individual lynx potentially using Langlas Draw Salvage Project Area (disturbance)*

The Langlas Draw Salvage Project Area is currently unsuitable lynx habitat. Because of the recent burn, the area is not expected to be used by lynx. As a result of aspen regeneration, the project area could be used for summer foraging in approximately 5 years. It could provide winter foraging habitat in approximately 15 to 25 years, when conifer species have regenerated above snow level. Sale activity would occur for 3 years, starting in 2004, when the area is still unsuitable habitat. There would be no nighttime activities associated with this project, so lynx that may use suitable habitat adjacent to the project area would not be affected at night.

2) *Effects on summer and winter forage habitat*

The areas of tree removal are currently unsuitable lynx habitat as a result of the Langlas Draw Fire that occurred in July of 2003. Removing approximately 75 percent of the dead trees over the next two years within currently unsuitable habitat would not affect lynx foraging habitat. Removing the dead, fire-killed trees will not impede natural regeneration or future foraging habitat. At the conclusion of this project 550 to 570 acres of fire-killed trees will remain for the purpose of future winter forage and denning habitat.

3) *Effects on denning habitat*

Wildfires contribute to future denning habitat as a result of the large number of dead trees that fall after the fire. When conifer trees (spruce and fir) regenerate in a burned area, they provide the necessary winter foraging habitat required for denning habitat. Salvaging the majority of dead trees after a wildfire reduces future denning habitat in an area. This project proposes to salvage approximately 130 to 150 acres from the Langlas Draw fire area, which totaled approximately 700 acres. Following the completion of this project, there would still be approximately 550 to 570 acres of fire-killed trees that would contribute to future denning habitat. The South Fork of the White River LAU currently has 45,168 acres of denning habitat representing 74 percent of the lynx habitat. Since this LAU has such a high percentage of denning habitat, a reduction of 130 to 150 acres of future denning habitat would have an insignificant effect (less than 0.01 percent) on the amount of lynx denning habitat.

4) *Effects of temporary road construction*

Out of the 0.25 miles of temporary road construction, less than 0.1 miles is outside of the burned area. The remaining temporary road construction is within the burn area, and would be located in unsuitable habitat. The 0.1 miles of temporary road construction that is outside of the burn area is located in denning habitat and would result in an insignificant amount (0.25 acres) of denning habitat converted to an unsuitable condition.

5) *Effects of log hauling*

Log trucks would be hauling logs during two operating seasons, 2004 and 2005. Trucks would haul through approximately 2.5 miles of National Forest land. This land is comprised of lynx winter forage habitat, “other” habitat, non-habitat, and a small amount of denning habitat. The trucks will exit the Forest boundary through areas not considered lynx habitat. Log hauling would occur for two consecutive years with the majority of hauling occurring during the first operating season. A considerable amount of recreational traffic occurs adjacent to the haul route (e.g., Buford/New Castle Road). This is the main USFS road across the southern portion of the Blanco Ranger District. Based on the short distance of haul, duration of use, and additional existing traffic patterns, log hauling associated with the Langlas Draw Salvage Project would have a negligible effect on lynx inhabiting the area.

<u>Summary of Effects on Lynx Habitat</u>

The table below summarizes the effects on lynx habitat as a result of this project. The effects on current habitat are very low because the salvage sale is located in currently unsuitable habitat. This table below does not however depict the effect this project has on future denning habitat (See discussion above on effects to denning habitat). In conclusion, the effects of this project will have an insignificant effect, a 1 percent conversion of suitable lynx habitat to an unsuitable condition, on lynx habitat.

Effects of Proposed Action on Lynx Habitat in the South Fork of the White River LAU

Habitat Description	Acres Affected by Project	Change in Percent of Lynx Habitat in LAU	Updated Percent of all Lynx Habitat in LAU
Winter forage	0	0%	7%
Denning	.25	.05%	74%
Other	0	0%	18%
Unsuitable	150	0%	1%
Total lynx habitat	150.25		

<u>Stampy Timber Sale</u>

This project is assessed with respect to relevant project standards for maintaining suitable foraging and denning habitat and providing for movement and dispersal. It is also evaluated with regard to changes in snow compaction and providing for diurnal security areas. The table below shows the changes in habitat by LAU that would occur if this project is accomplished.

Habitat Acres	Camp Hale LAU	After Project Completion	Holy Cross LAU	After Project Completion
Total LAU Acres	68,325		98,137	
Total Habitat	38,654 (56.6%)		59,939 (61.1%)	
Denning Habitat	7,604 (19.7%)	7576 (19.5%)	17,007 (28%)	
Winter Forage	19,747		13,627	
Other Habitat	10,074		28,712	28,692
Currently Unsuitable	1,229 (3.18%)	1257 (3.25%)	593 (0.98%)	613 (1.02%)

1*) Maintain suitable foraging habitat. LCAS standard: If more than 30 percent of the lynx habitat within a LAU is currently in unsuitable conditions, no further reduction of suitable conditions shall occur as a result of vegetation management activities by federal agencies.*

Based on the most recent lynx habitat mapping on the WRNF (May 6, 2000), it is estimated that about 3 percent of the capable lynx habitat in the Camp Hale LAU is currently unsuitable lynx habitat. Also based on the most recent lynx habitat mapping it is estimated that about 1 percent of the capable lynx habitat in the Holy Cross LAU is currently unsuitable lynx habitat. The proposed Unit 1 is in the Holy Cross LAU and is mapped as unsuitable lynx habitat, other habitat and non-habitat. Consequently the proposed actions will only slightly (0.03 percent) reduce the amount of suitable habitat for lynx within the LAU. The amount of unsuitable habitat will increase from 0.03 to 1.02 percent. The proposed Unit 2 is in the Camp Hale LAU and is mapped as denning habitat. The action would change this unit to unsuitable habitat and increase the unsuitable habitat in Camp Hale LAU only slightly (0.08 percent) to 3.25 percent unsuitable habitat within the LAU. Since the conversion of habitat types will not increase the amount of currently unsuitable habitat above the 30 percent threshold or below the minimum of 10 percent denning habitat, the Service considers these effects to be insignificant.

2) *Maintain denning habitat. LCAS standard: Where less than 10 percent denning habitat is currently present within a LAU, defer any management actions that would delay development of denning habitat structure.*

Based on the most recent lynx habitat mapping on the WRNF (May 6, 2000), it is estimated that about 20 percent of the lynx habitat in the Camp Hale LAU is denning habitat and about 28 percent of lynx habitat in Holy Cross LAU is suitable denning habitat. Unit 1 in the Holy Cross LAU does not have any denning habitat. Although, harvesting Unit 2 will affect suitable denning habitat, it is questionable if the area actually functions as denning habitat. The area has very little course woody debris. Additionally, the project area receives daily influence from highway traffic and recreational use, which would likely prevent a lynx from denning in Unit 2. Since the loss of 28 acres (0.2 percent) of denning habitat will not reduce the LCAS denning habitat standard below 10 percent, the Service concludes that the effects of this project on the denning habitat within the Camp Hale LAU will be insignificant.

3) *Maintain habitat connectivity within and between LAUs (LCAS Standard).*

The proposed action will not create any barriers to lynx movement. Wildlife recommendations to limit logging, yarding, and log hauling operations to the hours from sunrise to sunset have been incorporated into this proposal. The removal of overstory cover as a result of cutting dead and dying trees and selective thinning will make the units more open than if the dead trees were left standing and no thinning was performed. The stands of more open forest that would result from the proposed action would not be a major change to the landscape. More reclusive areas for east-west movement between the LAUs would remain to the north of the project area. Therefore, the project is consistent with the LCAS for maintaining habitat connectivity.

4) *Maintain diurnal security areas.*

As outlined in the environmental baseline, the units in the project area currently provide little if any diurnal security habitat for lynx due to the proximity to Highway 24 and the Camp Hale recreation area. Considering the effects of the proposed action and the current conditions of the habitat (currently unsuitable), the proposed action will have no effect on diurnal security areas.

5) *No net increase in designated or groomed over-the-snow routes*.

Some temporary additional snow compaction from snowmobiles, cross-country skiers, and snowshoers may occur during the implementation of this project. However, these temporary routes will not be designated or groomed over-the-snow routes. In addition, these temporary roads will not lead to any designated or groomed over-the-snow routes. This temporary increase in snow compaction is insignificant.

An additional indirect effect of the proposed action is the reduced risk to catastrophic fire and future beetle outbreaks that is expected. How effective this project will be in reducing these risks is difficult to evaluate because of the unpredictability associated with catastrophic fires. Generally fire is thought to have overall benefits to lynx habitat (Ruediger et al. 2000). However, because the area is immediately adjacent to Highway 24 and a recreation area, large-scale mortality of trees from either insects or fire within the project area would not necessarily improve habitat for lynx. This is because the loss of cover that would follow a large fire or the mortality of large numbers of overstory trees would create additional areas where lynx moving at dawn or dusk may be detected by people recreating or driving in the area. Consequently, a controlled removal of dead, infected, and "high-risk" trees has some merit for lynx by attempting to limit the extent of overstory removal compared to an uncontrolled fire or excessive insect outbreak. In conclusion, the direct and indirect effects of this project will have an insignificant effect to lynx or its habitat.

Roaring Fork Prescribed Fire

Anticipated impacts on lynx habitat from prescribed fire could be reduction in denning habitat by removal of dead and down woody material, and a temporary reduction in snowshoe hare habitat. Prescribed fire may promote regeneration of snowshoe hare habitat. Since the proposed action would not likely cause an intense burn, most of the woody vegetation and some of the dead and down woody material would remain. Project effects to lynx habitat would result in a conversion of 350.8 acres of suitable lynx habitat to an unsuitable condition (see table below).

Prescribed burning oak-brush and mountain shrub communities would not affect lynx habitat, since these vegetation-types are not considered lynx habitat. Burning sagebrush and aspen within 500 meters of denning and winter foraging habitat would affect summer foraging habitat for lynx. Under prescription, little denning, winter foraging, and other suitable habitat would be impacted, and of these habitats, impacts would most likely be to sagebrush stands, habitat at lower elevations of the burn blocks, stands surrounded by oak-brush and mountain shrub, and the periphery of stands adjacent to oak-brush and mountain shrub.

An exact assessment of lynx habitat acres that may be impacted by the proposed action is tenuous. For the purpose of evaluating impacts under the proposed action, we assessed impacts as having a complete change in suitability of lynx habitat polygons into unsuitable conditions. Our observation is that this is rarely the case upon implementation of prescribed fire to treat vegetation on the periphery of lynx habitat. Under the scenario that 100 percent of the burn blocks are treated with fire, the changes in habitat within the Red Table LAU are shown in the table below.

Habitat changes from the proposed action on the Red Table LAU.

Habitat description	Acres affected by project	Change in the percent of habitat w/in LAU	Updated Percent of Lynx habitat in LAU
Winter forage	186	1.5	29.5
Denning	88.6	0.4	47.0
Other	58	0.6	21.0
Unsuitable	18.2	2.1	2.0
Total lynx habitat	350.8	0.8	100

*implementation under prescription will most likely result in smaller changes to habitat

1) *Effects to the lynx habitat baseline*

Under the proposed action, prescribed fire impacts to lynx habitat within the LAU would be consistent with the BO for the WRNF 2002 LRMP, which determined that fire effects to an LAU having a baseline no greater than 30 percent unsuitable and less than 10 of the lynx habitat is denning are consistent with the LCAS. The effects of the proposed action would be consistent with this standard.

LCAS (Ruediger et al. 2000) Standards for prescribed fire use call for prescriptions to regenerate or create snowshoe hare habitat. Under the proposed action, aspen regeneration may be triggered in up to 351 acres of suitable habitat within the burn blocks, thereby improving habitat for snowshoe hares and foraging habitat for lynx. Since the post-project lynx habitat baseline will meet all standards of the LCAS, the effect of this action will be insignificant.

2) *Effects to landscape linkage*
This project is not located within a landscape linkage area.

3) *The effect of disturbance to lynx*

The proposed action would have short-term impacts to habitat within the project area. Fuels treatment along the private land interface would help protect loss from fire of larger stands of denning and winter foraging habitat found at higher elevations to the southeast of the project area within the LAU.

Activities associated with the proposed action would occur over a few days during each prescription period. If individual lynx happen to be in the action area, the project would have a negligible effect of disturbance. There is enough suitable habitat within the action area, that displaced lynx would be able to find temporary and/or permanent refuge.

Grand Lake Trail Groomers and Bombardier

The proposed action has the potential to affect lynx through snow compaction on existing permitted routes. The USFS and the Service have agreed to cooperate on reviewing, analyzing and authorizing activities within lynx habitat through a Consultation Agreement (revised June 4, 2001). The Consultation Agreement and attached documents direct the USFS to use the best available science, and the Lynx Conservation Assessment and Strategy (LCAS) (Ruediger 2000) to guide planning and analysis of projects and their effects on lynx. The LCAS prompts the

following questions to determine the potential effect to lynx from proposed activities. A discussion of each question and evaluation response is included in the following table.

Lynx Habitat Evaluation

Habitat Considerations	Evaluation
Does the project occur within lynx habitat?	Yes
Does the project occur within a Lynx Analysis Unit (LAU) that has ≥ 30% of habitat as currently unsuitable for lynx?	No
Will the proposed project convert ≥ 15% of lynx habitat to currently unsuitable habitat within the LAU? Or lead to conversion of ≥ 15% over a 10-year period?	No
Is the project in a "linkage zone"?	No
Does the project adversely affect connectivity within or between LAUs?	No
Does the project reduce denning habitat to <10% of suitable within the LAU?	No
Does the project significantly reduce snowshoe hare habitat within regenerating forests?	No
Does the project significantly reduce shrub regeneration?	No
Does the project significantly reduce coarse woody debris?	No
Does the project significantly impact late-successional forest?	No
Does the project introduce nighttime use in an area?	No
Does the project create access into previously secluded and remote areas?	No
Does the project significantly widen or improve existing roads?	No
Does the project authorize activities that will lead to snow compaction?	Yes

The 4.85-acre Bombardier speed test track on the Shadow Mountain Lake ice and the Trailgroomer garage facility are outside of the LAU in non-habitat. The garage facility is about 1 mile south of, and 400 feet below, the nearest LAU boundary. The Shadow Mountain speed test track is about 1 mile west, and 600 feet below, the nearest LAU boundary. These two features will have no effect on lynx.

The proposed project is within the Upper Colorado LAU. The Upper Colorado LAU has 4 percent of lynx habitat in currently unsuitable condition. The proposed project will not reduce the amount of lynx habitat within the LAU. Currently unsuitable habitat areas are limited to small patches of recent timber harvest where regeneration is not yet adequate to provide adequate forage and cover for snowshoe hares.

1) *Effects to landscape connectivity and/or linkage zones*:

The proposed project falls entirely within the Upper Colorado LAU. The proposed project does not affect connectivity of lynx habitat within the LAU, but does influence the integrity of lynx habitat within the LAU by perpetuating a large network of snow compaction within an LAU where lynx are known to have traveled (see snow compaction discussion below). The Upper Colorado LAU is bounded to the north and west by LAUs on the Routt National Forest. The proposed project will not affect the existing good connectivity between these LAUs. Although interspersed with large parks and treeless summits, lynx habitat connectivity within the project area, and within the LAU, is good. The Upper Colorado LAU is fragmented by Highways 34 and 125.

The proposed project does not fall within a linkage zone. The closest linkages are the Fraser linkage (25 miles southeast) and Berthoud Pass (30 miles south). Lynx have successfully moved through the Upper Colorado LAU while dispersing from 1999 and 2000 releases in southwestern Colorado. The Service believes that lynx probably came through the Berthoud Pass linkage, traveled north along the east side of the Fraser Valley, then moved northwest into Bowen Gulch, Never Summer Wilderness and Rocky Mountain National Park (Kurt Broderdorp, USFWS, pers. comm., 2003).

2) *Effects to the lynx habitat baseline*

The Upper Colorado LAU has 47 percent of lynx habitat as denning habitat. Many miles of groomed routes pass through denning habitat areas and several play areas are adjacent to denning habitat areas. The proposed action will have no effect on denning habitat. Coarse woody debris is available and well-distributed within suitable lynx habitat in the Upper Colorado LAU and will be unaffected by the proposed project. Both GLTG and Bombardier will be traveling over snow on roads and trails without woody debris, or over deep snow pack (to prevent damage to equipment) in open areas where some woody debris may be present on the ground.

In years when snow pack is late and/or thin, GLTG operations have the potential to affect some willow plants, even when waiting to operate until there is an 18-inch base, as they groom crossings over creeks and wet areas along trails such as in Pony Park. Under these conditions, some willow plants may be bent over or broken off by the groomer. In summer, these areas are still vegetated with willows, but the willows are shorter than the surrounding plants. Even with some winter mechanical damage, willow regeneration does not appear to be adversely affected. Late-successional forest habitats occur within the project area LAU and several existing snowmobile trails pass through and near these habitats. Due to the complex understory in these habitats with lots of downed trees, rootwads and seeps, both GLTG and Bombardier remain on existing roads and trails through these habitats. Although there may be some minor impacts to regenerating trees or existing trees related to snowmobile activity, this will not result in any changes in the baseline of lynx habitat. Since the proposed project will not convert suitable lynx habitat into an unsuitable condition, the effects of this action on lynx habitat is discountable.

3) *Roads*

Although the proposed action occurs on existing roads, the proposal will have no effect on the existing width or condition of those roads.

4) *Snow compaction*

The proposed action includes 71.6 miles of snow compaction along groomed routes (14 feet wide); 3961 acres of snow compaction in 18 snowmobile play areas accessible from the groomed trail system; and 4.85 acres of compaction on lake ice (outside of LAU and not lynx habitat). All of these routes and play areas (including the speed test track) are currently part of the Sulphur District snow compaction baseline and the proposed project will result in no net increase in snow compaction. The Upper Colorado LAU contains a total of 183 miles (roads and trails) and 4,275 acres (play areas) of snow compaction as a result of winter activities. Neither GLTG nor Bombardier has requested the addition of any new routes to their system.

Although already included in the snow compaction baseline, such an extensive area of compaction detracts from the integrity of lynx habitat by providing compacted routes through montane and subalpine habitats that competing predators may use to exploit the otherwise exclusive prey of lynx. From telemetry results, a male lynx released in the San Juan Mountains core area spent several months in the northern portion of the Upper Colorado LAU (Bowen Gulch and north) before returning to the core area. Due to infrequent telemetry flights, the course used by the lynx while moving south to north and back is not known.

The project area has the potential to provide good lynx denning and foraging habitat, but its value is somewhat compromised in the winter months by the snow compaction network that allows access to competitors. These potential competition effects are lessened in magnitude in the short term if lynx are not expected to use the Stillwater area as a primary travel and dispersal route in Grand County. As lynx populations in Colorado grow and lynx occupy more areas, the project area could be occupied by lynx in the future. Since this is a permit renewal without any changes, there will be no increase in the snow compaction on the ARNF. *No net increase in designated* or *over-the-snow routes* are LCAS standards. Therefore, the renewal of this permit will not result in a net increase in snow compaction or over-the-snow routes. Historical snow compaction activities of this nature are considered by the LCAS to be insignificant.

American Avalanche Special Use Permit (SUP)

1) *Effects to the lynx habitat baseline*

Although there may be some minor impacts to regenerating trees or existing trees related to snowmobile activity, this action will have no effect on the lynx habitat baseline for the Clear Creek and Frazer LAUs (see following tables).

Post-project description of the Frazer LAU

Total LAU Acres	Total Acres of Lynx Habitat	Winter Forage	Denning Habitat	Currently Unsuitable	Non-Habitat	Acres Affected by Project	Currently Unsuitable
106,316	78,264	72,224 (92%)	45,697 (58%)	3,068 (4%)	28,052	0	3,068 (4%)

Post-project description of the Clear Creek LAU

Total LAU Acres	Total Acres of Lynx Habitat	Winter Forage	Denning Habitat	Currently Unsuitable	Non-Habitat	Acres Affected by Project	Currently Unsuitable
94,884	41,749	36,231 (87%)	10,008 (24%)	2,052 (5%)	53,135	0	2,052 (5%)

2) *Snow compaction baseline*

Since the AAI has been permitted to operate since 1982 and there will be no changes to this 5-year permit, the reissuing of this permit by the USFS will not increase snow compaction,

designate over-the-snow routes, or groomed trails. Therefore, the reissuing of this permit and its effect on snow compaction will be negligible. Historical snow compaction activities of this nature are considered by the LCAS to be insignificant.

3) *Effects to landscape linkage areas*

Although lynx may avoid the Jones Pass Road and Berthoud Pass class sites, they are tolerable to human activities of this nature (Ruggiero 2000). There is no change expected to lynx behavior or habitat as a result of reissuing the 5-year priority special use permit to AAI Outfitter. Since there will be no changes resulting from the reissuing of this permit, the effect to landscape linkage areas will be negligible.

Timberline Trail Relocation

1) *Effects to the lynx habitat baseline*

The Southern Rocky Mountain Lynx Project Decision Tree (July 6, 2001), screen 7 for recreation management, states that trail construction projects for summer use trails that affect less than 3 acres of suitable lynx habitat should be considered as not likely to adversely affect Canada lynx. The proposed project will affect approximately 2.8 acres of "other" lynx habitat. Effected acreage was determined by considering 2 feet of trail width with a buffer of 8 feet on each side for a total of 18 feet of a zone of effect for the proposed length of the project. The effect on lynx habitat will not render these acres as unsuitable lynx habitat, but rather will affect the quality of the existing habitat by introducing an additional disturbance factor into a relatively undisturbed habitat. Although there is a minimal disturbance, lynx are tolerable to relatively minor disturbances (Ruggiero 2000).

Although the Grizzly Peak LAU does not meet the 10 percent denning requirement of the LCAS, the LCAS does state that "Where less than 10 percent denning habitat is currently present within the LAU, defer any management actions that would delay development of denning habitat structure". The Service believes this project will not reduce or inhibit the development of down-woody debris (i.e., denning habitat). In conclusion, this LAU will continue to meet or move towards meeting the standards and guidelines of the LCAS.

The Timberline Trail is not open to ATV or snowmobile use and is generally not suitable for ski or snowshoe use. This project will have an insignificant effect on the Grizzly Peak LAU. Less than 1 percent of the lynx habitat within the Grizzly Peak LAU will be affected. In addition, all LCAS Standards will be met. The table below shows the insignificant changes to the lynx habitat baseline of the Grizzly Peak LAU.

Habitat description	Acres affected by project	Change in the percent of habitat w/in LAU	*Updated percent of all Lynx habitat in LAU
Winter forage	0		30.5
Denning	0		9.8
Other	2.8	<0.01	58.7

Unsuitable	0		1.0
Total lynx habitat	2.8	<0.01	100.0

2) *The effects of human disturbance*

Human disturbance would be temporary and potentially cause a short-term displacement of the lynx, if any happen to be in the area. Any displaced lynx would be expected to return when construction activities are completed. Considering lynx are tolerant to human activities (Ruediger et al. 2000) and the fact that this effect is temporary, the effect to lynx will be negligible.

3) *The effects of increased snow compaction*

Since this trail will not be open to motorized-vehicle use, this project will not increase the amount of snow compaction within the Grizzly Peak LAU.

Lottis Campground Expansion

Post-project baseline for the Fossil Ridge LAU

Habitat description	Acres affected by project	Changes in the percent of habitat w/in LAU	*Updated percent of all Lynx habitat in LAU
Winter forage	0		21.4
Denning	0		23.1
Other	2.1	<0.01	55.3
Unsuitable	0		0.2
Total lynx habitat	2.1	<0.01	100.0

*Reflects the proposed action

1) *Effects to lynx habitat baseline*

The Southern Rocky Mountain Lynx Project Decision Tree (July 6, 2001), screen 7 for recreation management, states that new recreation facility construction affecting less than 3 acres of suitable habitat which does not influence denning habitat or lynx winter foraging habitat should be considered as not likely to adversely affect the Canada lynx. The proposed project will affect 2.1 acres of “other” lynx habitat, but will not change these acres into an unsuitable condition (see table above). However, this action will have an insignificant effect (less than 0.01 percent) on the baseline for lynx habitat within the Fossil Ridge LAU.

The amount of affected acres was determined by calculating acreage of the proposed campground expansion that will occur in suitable lynx habitat. No increase in winter activity is anticipated, as the Lottis Creek Campground generally does not receive campground facility use during the winter due to seasonal closure.

2) *Effects of human disturbance*

Indirect effects that are reasonably certain to occur as a result of the proposed action include the potential for a slight increase in recreation activities within the area. Increased recreation will

likely be limited to the existing trail system and the existing area of fishing activity along South Lottis Creek. Displacement of lynx is anticipated if lynx are present in the area when construction activities take place. In conclusion, the seasonal displacement of lynx during the summer when campground use is highest would be negligible.

The anticipated recreation increase in the immediate area is not expected to reduce habitat quality for lynx around the project area. Any displaced lynx are expected to return when campground construction is completed and recreational activities decrease due to seasonal use of the Lottis Creek Campground. Since lynx are tolerable of human disturbance, this impact will have a negligible effect on lynx.

Northwest Colorado Snowmobile Club Special Use Permit (SUP)

1) *Effects to the lynx habitat baseline*

The permit area is located within the Bears Ears and Pagoda LAUs. Lynx habitat will not be removed or modified as a result of this activity. Since the action areas meet the standards of the LCAS and the action will not change either LAU, there will be no effect on the lynx habitat baseline (Ruggiero 2000).

2) *The effect of snow compaction*

The Northwest Colorado Snowmobile Club maintains existing and historic snowmobile routes, including a permitted annual "poker run" fundraising event. The scope of the permitted activities has not changed. Since there will be no changes to the permit that will increase snow compaction, the effects of reissuing this permit will be in accordance with the LCAS for "no net increase in groomed or designated over-the-snow routes." Historical snow compaction activities of this nature are considered by the LCAS to be insignificant.

Snowmobile Trail Grooming

1) *The effect of snow compaction*

The LCAS sets forth a Standard of *no net increase in groomed or designated over-the-snow routes*. The special use permit would comply with this Standard and would authorize the same amount of grooming that was permitted under the expired permit. Further, the routes groomed are part of the baseline compaction area designed to regulate compaction across lynx habitat. Therefore, activities under the special use permit would not contribute to additional snow compaction. However, the routes in this action are within the snow compaction baseline for the WRNF area. In addition, none of the groomed trails would be located in a key lynx linkage area. Based on the aforementioned reasoning, the Service believes that this action is in accordance with the LCAS Standard of *no net increase in groomed or designated over-the-snow routes* and therefore will result in a negligible effect to lynx. Historical snow compaction activities of this nature are considered by the LCAS to be insignificant.

2) *The effect on the lynx habitat baseline*

Since the permitted activities would not change the lynx habitat baseline, there would be no effect to lynx habitat or a change in percent of habitat within any LAUs (see table below).

Habitat description	Acres affected by permit activities	Change in the percent of habitat w/in LAU
Winter forage	0	0
Denning	0	0
Other	0	0
Unsuitable	0	0
Total lynx habitat	0	0

3) *The effect of human disturbance*

Grooming activities are correlated with snowfall, and generally occur 3-4 times per month, over a five-month period. Grooming is done by up to 3 machines mid-week during daylight hours. Should lynx use the area surrounding the Flattops Trail System, the temporary nature of these activities would not serve as a barrier to lynx movements within home ranges or across the landscape. Considering lynx are tolerant to human activities (Ruediger et al. 2000) and the fact that this effect is intermittent, the effect to lynx will be negligible.

Cross-country Ski Trail Grooming

1) *The effects of snow compaction*

The WRNF Land and Resource Management Plan identified that a baseline area of snow compaction would be used to develop an appropriate level of use and location of use. Grooming activities would compact up to 20.8 miles of trail. This activity could affect lynx by providing access for competitive predator species (e.g., coyotes and mountain lions) that would otherwise be unable to hunt in deep snow. However, the routes in this action are within the snow compaction baseline for the WRNF area. The Service believes that this action is in accordance with the LCAS Standard of *no net increase in groomed or designated over-the-snow routes* and therefore will result in a negligible effect to lynx. Historical snow compaction activities of this nature are considered by the LCAS to be insignificant.

2) *Effects to the lynx habitat baseline*

The proposed activity would not modify vegetation beyond trail maintenance. In addition, this action would have an insignificant and immeasurable effect to the lynx habitat baseline within the Clinetop LAU (see following table).

Habitat description	Acres affected by the proposed action	Change in the percent of habitat w/in LAU
Winter forage	0	0
Denning	0	0

Other	0	0
Unsuitable	0	0
Total lynx habitat	0	0

3) *Effects to landscape linkage areas*

Since the activities associated with this action are not within any key lynx linkage areas, there will be no effect.

4) *Effects of human disturbance*

The effect of human disturbance within the project area would be intermittent and negligible.

Poole Right-Of-Way (ROW)

1) *Effects to the lynx habitat baseline*

Habitat description	Acres affected by project	Change in the percent of habitat w/in LAU	*Updated percent of all Lynx habitat in LAU
Winter forage	0		6.8
Denning	0.7	negligible	47.1
Other	2.4	negligible	36.5
Unsuitable	0		9.6
Total lynx habitat	3.1	negligible	100.0

*reflects the proposed action

The proposed project will affect approximately 3.1 acres of lynx habitat (see table above). This includes an estimated 2.4 acres of "other" and 0.7 acres of lynx denning habitat. The amount of affected acres was determined by considering 14 feet of road width with a buffer average of 12 feet on each side for a total of 38 feet of a zone of effect for the proposed length of the project. This project will result in a permanent loss of up to 3.1 acres of lynx habitat and introduce an additional disturbance factor into relatively undisturbed habitat. This loss of lynx habitat (3.1 acres) will have insignificant affect to the lynx habitat baseline of the Pitkin LAU and be within the Standards of the LCAS.

2) *Effects from human disturbance*

A temporary, short-term displacement could occur during construction should lynx be present in the project area. According to Ruggiero et al. (2000) lynx are tolerable to human disturbances. Therefore, the Service believes that this effect will be negligible.

3) *The effect of a new road*

To minimize the impact of the new road (3,600 linear feet), the USFS will be closing a portion of the existing Sandy Creek Mine road. To limit access, a road closure gate will be installed at the junction of the main Gold Creek road. This gate would restrict access only to the property owner. Since various recreation activities already occur in the Gold Creek drainage, this limited

increase in human activity from the property owner would be negligible. Based on the aforementioned information, the Service believes that construction of the Poole ROW would not have a significant effect to lynx.

Roach Grazing Allotments

1) *Effects to the lynx habitat baseline*

Continued grazing in the Laramie LAU will contribute to maintaining grassland and shrub land types with a plant community tolerant to moderate-intensity grazing. With a forage utilization level of 45 percent of production by weight, the upland sites will be maintained in a satisfactory condition with a stable trend. The requirement of leaving a 6 inch stubble height in the riparian areas may result in the early removal of livestock from pastures and/or entire allotments. This may result in a lighter utilization level overall on the uplands, estimating 25 to 30 percent utilization level. This would contribute towards increasing the range condition trend upward, in uplands and riparian areas, but with no substantial shift in plant species composition.

Heavy grazing and the associated introduction of non-native grasses and forbs in past decades has likely displaced native plants and added to the total species composition. Continued grazing through the proposed action would not affect the structure of the plant communities. Grassland and shrubland types will continue to exist in the landscape, and forest types will largely remain unaffected by cattle. Plant community succession may change over time with further expansion of weeds, with no predicted loss of lynx habitat within the project area.

A majority of the range in the Roach Geographic Area lands, in which the livestock normally graze, is not primary snowshoe hare habitat. These primary ranges are grassland and open shrubland vegetation types typically found in lower elevations. At higher elevations and within lynx habitat, the primary range is identified as riparian shrublands. These are the stream-side areas and narrow meadows where willow and alder shrubs provide cover and forage for snowshoe hare.

The effects from grazing changes on native rangeland plant communities (primarily the foothill grassland and shrubland types) are not a project-level conservation issue for the Canada lynx. This is because the majority of the primary range is below the elevation range (less than 9,000 feet) of defined lynx habitat and outside of the LAU. One of the allotments (e.g., Gabrielson) is below 9,000 feet and outside any LAU.

Although renewing these permits will allow the continued minor impact of grazing on the vegetative structure, there will be no change to the Laramie LAU baseline (see tables below).

Pre-project LAU baseline	ACRES	PERCENT OF LAU
UNSUITABLE HABITAT	17,454	21 %
SUITABLE HABITAT	58,558	88 %
FORAGE (w/o denning)	26,527	25 %
DENNING (also forage)	45,697	41 %

OTHER HABITAT	2,973	23 %

Post-project LAU baseline	ACRES	PERCENT OF LAU
UNSUITABLE HABITAT	17,454	21 %
SUITABLE HABITAT	58,558	88 %
FORAGE (w/o denning)	26,527	25 %
DENNING (also forage)	45,697	41 %
OTHER HABITAT	2,973	23 %

2) *Effects to landscape connectivity*

It is recognized that lynx are capable of long distance movements and that some populations have shifted their geographical base by emigration-migration (Ruggiero et al. 2000). Maintaining landscape features that permit the dispersal and colonization of lynx into unoccupied but suitable habitats is essential for their recovery and long-term survival.

Within the affected area, cover would remain connected and continuous for lynx travel in concealment across USFS land. Actions implemented by the project will not compromise the integrity of natural landform features nor create unnatural barriers that prevent or hinder lynx movements. In conclusion, the renewal of these grazing permits will not have a significant effect on landscape connectivity.

<u>Troublesome, Pete Gulch, Monument and Grass Grazing Allotments</u>

1) *Effects to the lynx habitat baseline*

As shown in the tables below, the renewal of these grazing permits will not change the lynx habitat baselines. Although the Troublesome LAU does not meet the 10 percent denning requirement of the LCAS, the LCAS does state that "Where less than 10 percent denning habitat is currently present within the LAU, defer any management actions that would delay development of denning habitat structure". The Service believes that grazing does not affect down-woody debris (i.e., denning habitat) and that the renewal of these grazing permits will not inhibit the development of denning habitat. In conclusion, these LAUs will continue to meet or move towards meeting the standards and guidelines of the LCAS.

Troublesome LAU post-project lynx habitat descriptions

Total LAU Acres	Acres of Lynx Habitat	Winter Forage	Denning Habitat	Currently Unsuitable	Non-Habitat	Acres Affected by Project	Currently Unsuitable
49,874	46,117	1,831 (3.97%)	3,192 (6.92)	1,422 (3.14%)	3,757	*44,939 90%	1,422 (3.14%)

*This number represents the total number of acres within this LAU permitted for grazing; and does not represent a conversion of suitable habitat to a currently unsuitable condition.

Sheep Mountain LAU Post-project lynx habitat descriptions

Total LAU Acres	Acres of Lynx Habitat	Winter Forage	Denning Habitat	Currently Unsuitable	Non-Habitat	Acres Affected by Project	Currently Unsuitable
106,049	85,476	19,590	20,156	5,567	12,531	9,075	5,567

*This number represents the total number of acres within this LAU permitted for grazing; and does not represent a conversion of suitable habitat to a currently unsuitable condition.

York Gulch Small Tracts Act (STA)

1) *Effects to the lynx habitat baseline*

Approximately 36 acres of habitat within the Clear Creek Lynx Analysis Unit (LAU) are proposed for sale. Twelve acres are classified as "foraging habitat", 22 acres are "currently unsuitable", and 2 are classified as "non-habitat". The parcels are on the edge of the LAU and have very little impact on the ability of the LAU to function successfully. In addition, the proposed parcels are completely surrounded by private land, and difficult for the USFS to appropriately manage. This action would be in accordance with the USFS objective of improving management efficiency. The table below shows the insignificant effect (less than 1%) this project will have on the Clear Creek lynx habitat baseline. In addition, the Clear Creek LAU will be in accordance with LCAS Standards.

Post-project LAU description.

Total LAU Acres	Total Acres of Lynx Habitat	Winter Forage Habitat Acres (%)	Denning Habitat Acres (%)	Currently Unsuitable Habitat Acres (%)	"Other" lynx habitat Acres	Number of acres (%) Affected by Project	Total Acres (%) Currently Unsuitable Habitat
94,884	41,749	36,231 63%	10,008 24%	2,052 5%	N/A	34 <1%	2,086 5%

2) *The indirect effect of the land exchange*

If all 36 acres are developed (i.e., houses), this would have an insignificant effect to lynx based on the juxtaposition of the 36 acres. Because this isolated tract of land (surrounded by developed land) is basically inaccessible to lynx that may inhabit the adjacent USFS land, the effect to lynx and/or the Clear Creek LAU will be insignificant.

Faraway Land Exchange

1) *Effects to the lynx habitat baseline*

The lynx habitat identified on the Federal lands represents approximately 0.27 percent (42 acres out of a total of 15,357 acres) of the total suitable habitat and 0.42 percent of the foraging habitat found within the Little Cone LAU (see table below). It should be noted, that there will be a net gain in the amount of land (40 acres) under the administration of the USFS.

HABITAT TYPE	LAU TOTAL (AC.)	FOREST SERVICE (AC.)	PRIVATE (AC.)
Total Acres LAU	30,979 Acres		
Total (Ac.)-Forest Service		20,446 (66.0%)	
Total (Ac.)-Private			10,533 (34.0%)
Denning Total	9,022	8,090 (90.0%)	932 (10.0%)
Other Winter Foraging	906	613 (67.0%)	293 (33.0%)
Other Habitat	5,429	3,960 (72.9%)	1,469 (27.1%)
Unsuitable	0	0	0
Total Lynx Habitat	15,357	12,663 (82.5%)	2,694 (17.5%)
Non-Habitat	15,622	7,783 (49.8%)	7,839 (50.2%)

The suitable lynx habitat and foraging habitat found within the Federal tracts proposed for exchange represents a very small proportion of the total for these components found within the Little Cone LAU (0.27 percent and 0.42 percent, respectively). Although this project will transfer an insignificant amount of lynx habitat to private ownership, the net result will be a beneficial effect to the lynx habitat baseline. In addition, the consolidation of the land will improve USFS management efficiency.

2) *The indirect effect of the land exchange*

Potential actions that might occur on the Federal parcels through a conveyance to private ownership that could affect lynx habitat include timber harvesting, residential development, over-grazing of livestock, and increased recreational activity. However, based on past and current land management direction on the Faraway Ranch and the stated intentions of the Faraway Foundation, none of these actions are likely to occur.

Past and current management direction on the ranch emphasizes the maintenance of open space. Development on the existing ranch has been limited since it was purchased by the Faraway Foundation in 1995. Should there be a change in management direction toward development, it is likely that the two parcels involved in this exchange would be of low priority for such activity. Both of these parcels lie on slopes with northerly aspects, which are generally considered less desirable for development. Based on the current management direction of the Faraway Ranch Foundation, the indirect effect of future development will be negligible.

<u>Round Hill Land Exchange</u>

1) *Effects to the lynx habitat baseline*

Since the Federal property being conveyed to Denver Water does not contain any lynx habitat or affect a linkage area, this project will be “wholly beneficial” to lynx by increasing the amount of

suitable lynx habitat within the affected LAUs (see tables below). There have not been any other identified effects to lynx that could possibly occur from implementing this action.

Post-project description of the Buffalo Peaks LAU.

Total LAU Acres	Total Acres of Lynx Habitat	Winter Forage	Denning Habitat	Currently Unsuitable	Non-Habitat Acres	Acres Affected by Project	Currently Unsuitable
118,505	70,883	34,155 (48%)	39,168 (55%)	418 (<0.01%)	47,622	*560	*418 (<0.01%)

*Acres affected by this project will not change the amount of currently unsuitable habitat.

Post-project description of the Sangres LAU.

Total LAU Acres	Total Acres of Lynx Habitat	Winter Forage	Denning Habitat	Currently Unsuitable	Non-Habitat Acres	Acres Affected by Project	Currently Unsuitable
155,009	96,741	72,432 (75%)	72,768 (75%)	300 (<0.01)	58,353	*84	*300 (<0.01)

*Acres affected by this project will not change the amount of currently unsuitable habitat.

<u>Hahns Peak Water Coalition</u>

1) *Effects to the endangered fishes of the Colorado River*

In accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.), and the Interagency Cooperation Regulations (50 CFR 402), the Fish and Wildlife Service reviewed your November 7, 2003, correspondence regarding the impacts of the Hahns Peak Water Coalition Project on endangered Colorado River fishes. The project is located at T. 10 N., R. 85 W., section 17, in Routt County, Colorado. The proposed action will cause a new average annual water depletion of 4.7 acre-feet to the Colorado River in the Upper Colorado River Basin.

A Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin was initiated on January 22, 1988. The Recovery Program was intended to be the reasonable and prudent alternative to avoid jeopardy to the endangered fishes by depletions from the Upper Colorado River Basin.

In order to further define and clarify the process in the Recovery Program, a section 7 agreement was implemented on October 15, 1993, by the Recovery Program participants. Incorporated into this agreement is a Recovery Implementation Program Recovery Action Plan which identifies actions currently believed to be required to recover the endangered fishes in the most expeditious manner.

Included in the Recovery Program was the requirement that a depletion fee would be paid to help support the Recovery Program. On July 8, 1997, the Service issued an intra-Service biological opinion determining that the depletion fee for depletions of 100 acre-feet or less are no longer required because the Recovery Program has made sufficient progress to be the reasonable and

prudent alternative to avoid the likelihood of jeopardy to the endangered fishes and to avoid destruction or adverse modification of their critical habitat by depletions of 100 acre-feet or less. Therefore, the depletion fee for this project is waived.

The determination in this document is based on the information provided by the Forest Service. If new information becomes available, if a new species becomes listed, if incidental take occurs, if the total average annual amount of water depleted by this project changes, or if any other project element changes which alters the operation of the project from that which is described in your correspondence and which may affect any endangered or threatened species in a manner or to an extent not considered in this biological opinion (see 50 CFR 402.16), formal section 7 consultation should be reinitiated. The USFS should condition its approval documents to retain jurisdiction should section 7 consultation need to be reinitiated.

2) *Effects to the lynx habitat baseline*

This project will result in a temporary modification of lynx habitat totaling about 2 acres. This would result in a short-term temporary loss (1 to 3 years) and convert "other" habitat to currently unsuitable lynx habitat. Since this project would temporarily impact less than 1 percent of suitable lynx habitat (2 acres), the Service has concluded that this project would have an insignificant effect on lynx. In addition, this project will be in accordance with LCAS Standards.

3) *Effects of human disturbance*

The area is not considered to be high quality habitat, due to its close proximity to urban areas. The temporary disturbance from construction activities would have a negligible effect to lynx.

4) *Effects of snow compaction*

There are no activities associated with this project that may cause snow compaction.

Effects of Interrelated or Interdependent Actions

An interrelated activity is an activity that is part of the proposed action and depends on the proposed action for its justification. An interdependent activity is an activity that has no independent utility apart from the action under consultation.

Sun Down Bowl Chair 5 Upgrade

The Service has not identified any actions that are interrelated or interdependent to the proposed project.

Tiny Beaver Commercial Firewood Sale

The Service has not identified any actions that are interrelated or interdependent to the proposed project.

Pogue and Crystal Lakes Commercial Firewood Sale

The Service has not identified any actions that are interrelated or interdependent to the proposed project.

Rito Hondo and Cold Springs Fuels Treatment

The Service has not identified any actions that are interrelated or interdependent to the proposed project.

Shilling Springs Fuels Treatment

The Service has not identified any actions that are interrelated or interdependent to the proposed project.

Horse Creek Timber Sale

The Service has not identified any actions that are interrelated or interdependent to the proposed project.

Langlas Draw Salvage

The Service has not identified any actions that are interrelated or interdependent to the proposed project.

Stampy Timber Sale

The Service has not identified any actions that are interrelated or interdependent to the proposed project.

Roaring Fork Prescribed Fire

The Service has not identified any actions that are interrelated or interdependent to the proposed project.

Grand Lake Trail Groomers and Bombardier

The Service has not identified any actions that are interrelated or interdependent to the proposed project.

American Avalanche Special Use Permit (SUP)

The Service has not identified any actions that are interrelated or interdependent to the proposed project.

Timberline Trail Relocation

The Service has not identified any actions that are interrelated or interdependent to the proposed project.

Lottis Campground Expansion

The Service has not identified any actions that are interrelated or interdependent to the proposed project.

Northwest Colorado Snowmobile Club Special Use Permit (SUP)

The Service has not identified any actions that are interrelated or interdependent to the proposed project.

Snowmobile Trail Grooming
The Service has not identified any actions that are interrelated or interdependent to the proposed project.

Cross-country Ski Trail Grooming
The Service has not identified any actions that are interrelated or interdependent to the proposed project.

Poole Right-Of-Way (ROW)
The Service has not identified any actions that are interrelated or interdependent to the proposed project.

Roach Grazing Allotments
The Service has not identified any actions that are interrelated or interdependent to the proposed project.

Troublesome, Pete Gulch, Monument and Grass Grazing Allotments
The Service has not identified any actions that are interrelated or interdependent to the proposed project.

York Gulch STA
The Service has not identified any actions that are interrelated or interdependent to the proposed project.

Faraway Land Exchange
The Service has not identified any actions that are interrelated or interdependent to the proposed project.

Round Hill Land Exchange
The Service has not identified any actions that are interrelated or interdependent to the proposed project.

Hahns Peak Water Coalition
The water depletion associated with this project will provide water for an estimated 14 homes; however, these homes will not be built on USFS property and are outside the boundaries of any LAU. Effects to the endangered fishes of the Colorado were discussed previously in the Effects of the Action section. This interrelated project will have no effect on lynx.

CUMULATIVE EFFECTS
Cumulative effects are the effects of future State, Tribal, local, or private actions that are reasonably certain to occur in the action area considered in this 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.

Sun Down Bowl Chair 5 Upgrade
No future State, Tribal, local or private actions are anticipated in the reasonably foreseeable future.

Tiny Beaver Commercial Firewood Sale
The only future State or private actions anticipated in the reasonably foreseeable future, is the ongoing post-fire timber harvest activities on private lands in the Trout Handkerchief LAU. Private lands timber harvest is occurring within currently unsuitable habitat in the Trout Handkerchief LAU resulting from the Million Fire burn. No further habitat conversions are expected to occur as a result of these activities.

Pogue and Crystal Lakes Commercial Firewood Sale
The only future State, Tribal, local or private actions anticipated in the reasonably foreseeable future, is the ongoing post-fire timber harvest activities on private lands in the Trout Handkerchief LAU. Private lands timber harvest is occurring within currently unsuitable habitat in the Trout Handkerchief LAU resulting from the Million Fire burn. No further habitat conversions are expected to occur as a result of these activities.

Rito Hondo and Cold Springs Fuels Treatment
No future State, Tribal, local or private actions are anticipated in the reasonably foreseeable future.

Shilling Springs Fuels Treatment
No future State, Tribal, local or private actions are anticipated in the reasonably foreseeable future.

Horse Creek Timber Sale
Five hundred acres (250 are considered "other" lynx habitat) that is included in the Mancos LAU baseline are on private land. If all 250 acres were to be harvested resulting in unsuitable habitat conditions, the effect would be insignificant. The harvesting of 250 acres of "other" habitat would affect less than 0.01 percent of the Mancos LAU (see following table).

Current conditions of the Mancos LAU

Habitat Description	Percent of Lynx habitat within LAU
Winter Forage	6
Denning	33
Other	58
Unsuitable	3

Post-project conditions of the Mancos LAU, if all 250 acres of "other" habitat were harvested

Habitat Description	Acres affected by project	Change in the percent of habitat w/in LAU	Updated percent of Lynx habitat within LAU
Winter Forage	0	0	6
Denning	0	0	33
Other	250	0.005	*58
Unsuitable	0	0	*3

*Effect is too small (less than 0.01 percent) to note any change.

Langlas Draw Salvage

No future State, Tribal, local or private actions are anticipated in the reasonably foreseeable future.

Stampy Timber Sale
No future State, Tribal, local or private actions are anticipated in the reasonably foreseeable future.

Roaring Fork Prescribed Fire
No future State, Tribal, local or private actions are anticipated in the reasonably foreseeable future.

Grand Lake Trail Groomers and Bombardier
No future State, Tribal, local or private actions are anticipated in the reasonably foreseeable future.

American Avalanche Special Use Permit (SUP)
No future State, Tribal, local or private actions are anticipated in the reasonably foreseeable future.

Timberline Trail Relocation
No future State, Tribal, local or private actions are anticipated in the reasonably foreseeable future.

Lottis Campground Expansion
No future State, Tribal, local or private actions are anticipated in the reasonably foreseeable future.

Northwest Colorado Snowmobile Club Special Use Permit (SUP)
No future State, Tribal, local or private actions are anticipated in the reasonably foreseeable future.

Snowmobile Trail Grooming
No future State, Tribal, local or private actions are anticipated in the reasonably foreseeable future.

Cross-country Ski Trail Grooming
Non-federal activity and development is foreseeable south of the Clinetop LAU. A review of Garfield County's 2002 Comprehensive Plan shows that development on private lands south of Rifle Ranger District along West Elk Creek and the Colorado River are expected; however at this time there were no identified non-Federal projects in the reasonably foreseeable future.

Poole Right-Of-Way (ROW)
No future State, Tribal, local or private actions are anticipated in the reasonably foreseeable future.

Roach Grazing Allotments
No future State, Tribal, local or private actions are anticipated in the reasonably foreseeable future.

Troublesome, Pete Gulch, Monument and Grass Grazing Allotments
No future State, Tribal, local or private actions are anticipated in the reasonably foreseeable future.

York Gulch (Small Tracts Act) STA
No future State, Tribal, local or private actions are anticipated in the reasonably foreseeable future.

Faraway Land Exchange
No future State, Tribal, local or private actions are anticipated in the reasonably foreseeable future.

Round Hill Land Exchange
No future State, Tribal, local or private actions are anticipated in the reasonably foreseeable future.

Hahns Peak Water Coalition
The water depletion associated with this project will provide water for an estimated 14 homes; however, these homes will not be built on USFS property and are outside the boundary of any LAU.

CONCLUSION

After reviewing the current status of the Canada lynx, the environmental baseline for the action area, the effects of the action, and the cumulative effects, it is the Service's biological opinion that the 24 batched projects are not likely to jeopardize the continued existence of the Canada lynx. No critical habitat has been designated for this species; therefore, none will be affected.

The Service reached this conclusion for the following reasons:

Although this BO covers 24 different actions, and those actions have been analyzed individually, the Service finds it appropriate to summarize the overall action and the effects on lynx and lynx habitat to the Southern Rocky Mountain Ecosystem. Most of the individual actions were located within a single LAU, with very few impacting more than one LAU. Those actions located within multiple LAUs were evaluated to ensure that movement capability between adjacent LAUs was maintained. Many of the actions met the criteria, set forth in the lynx screen process, which was considered extremely conservative, compared to conservation standards and guidelines within the LCAS. The LCAS was evaluated on its ability to conserve lynx when used in concert with existing planning documents. The October 2000, BO concluded, that in general, actions that followed the Standards and Guidelines of the LCAS would only result in effects to lynx that were considered insignificant and/or discountable to lynx. Through individual analysis of the 24 actions, all were found to have insignificant and/or discountable effects to lynx.

Based on our evaluation and analysis of information received, we have concluded that these 24 actions are distributed relatively evenly across the Southern Rocky Mountain Ecosystem and will have an insignificant and/or discountable effect on lynx within the Southern Rocky Mountain Region. Although some actions have a higher level of negative effect than others, many of the large-scale vegetation management actions are small when compared to the overall quantity of habitat within the Southern Rocky Mountains. None of the proposed actions will cause habitat conditions in any LAU to individually exceed those recommended in the LCAS, or collectively exceed those recommended for the Southern Rocky Mountain Ecosystem.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent 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 defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. 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 to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

Amount or Extent of Take

No incidental take is anticipated.

Effect of the Take

Since no incidental take is anticipated, take will not affect lynx.

Reasonable and Prudent Measures

Since no incidental take is anticipated, no reasonable and prudent measures are necessary.

Terms and Conditions

Since no incidental take is anticipated, no terms and conditions are necessary.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act requires 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 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 Service recommends that the USFS continue to work on completing the Southern Rockies Lynx Amendment.

REINITIATION NOTICE

This concludes consultation for the potential effects of the 24 analyzed actions on the Canada lynx. As provided in 50 CFR 402.16, reinitiation 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 such take must cease pending reinitiation.

Thank you for your continued interest in the conservation of endangered, threatened, and proposed species. If you have any questions or comments, please contact John Kleopfer at the letterhead address or (970) 245-3920 or 243-6209, extension 39.

Sincerely,

Susan C. Linner
Colorado Field Supervisor

cc: FWS/RO/ES, Denver

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