

Biological Assessment of the Potential Effects of Managing the Payette National
Forest on the
Canada Lynx (threatened)

South Fork Salmon River and North Fork Payette River Section 7 Watersheds

Volume 2
Ongoing and New Actions

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I. INTRODUCTION

This Biological Assessment (BA) determines the effects of various Federal actions in the South Fork Salmon River and North Fork Payette River Section 7 watersheds ([Figure 1](#), next page) on the Canada lynx (*Lynx canadensis*). This BA is tiered and supplements a previous BA conducted for the Canada lynx for programmatic actions across the entire Payette National Forest. The previous BA is listed in a section in the references cited called “Previous BAs”. Actions in this BA are “similar actions” as described in 50 CFR 402.12 (g).

Descriptive information in this BA covers the South Fork Salmon River and North Fork Payette Section 7 watersheds. Direction for the content and format of this BA was agreed to by the Fish and Wildlife Service, NOAA, and the Payette National Forest during consultation on the Forest’s Land and Resource Management Plan (LRMP or Forest Plan). This “Framework” is a process for project level consultation that addresses multi-scale analysis and requires the tracking of an environmental baseline at an agreed upon scale. It allows the agencies to understand conditions on the land, especially for threatened and endangered species, at a scale between the Forest-wide and project specific. While the recommended scale in Forest Plan consultation was the 5th or 6th field hydrologic unit watershed, this BA includes all 5th HU watersheds within the South Fork Salmon River and North Fork Payette watersheds. These Section 7 watersheds are approximately the 4th HU scale and were established previous to the Forest Plan revision as the appropriate scale for consultation on listed fish species on the Payette National Forest. To maintain the integrity of the previous fisheries consultation, while meeting the direction of agreements made during the Forest Plan consultation, this document discusses baseline conditions and effects to listed wildlife species within 5th HU watersheds in the South Fork Salmon River and North Fork Section 7 watersheds.

The baseline provides an assessment of watershed conditions and describes the status and habitats of the listed wildlife species. This watershed baseline document constitutes the next smaller scale for aggregation of information about conditions and conservation needs for listed species and serves as the foundation for consultation on all actions and programs in the watershed.

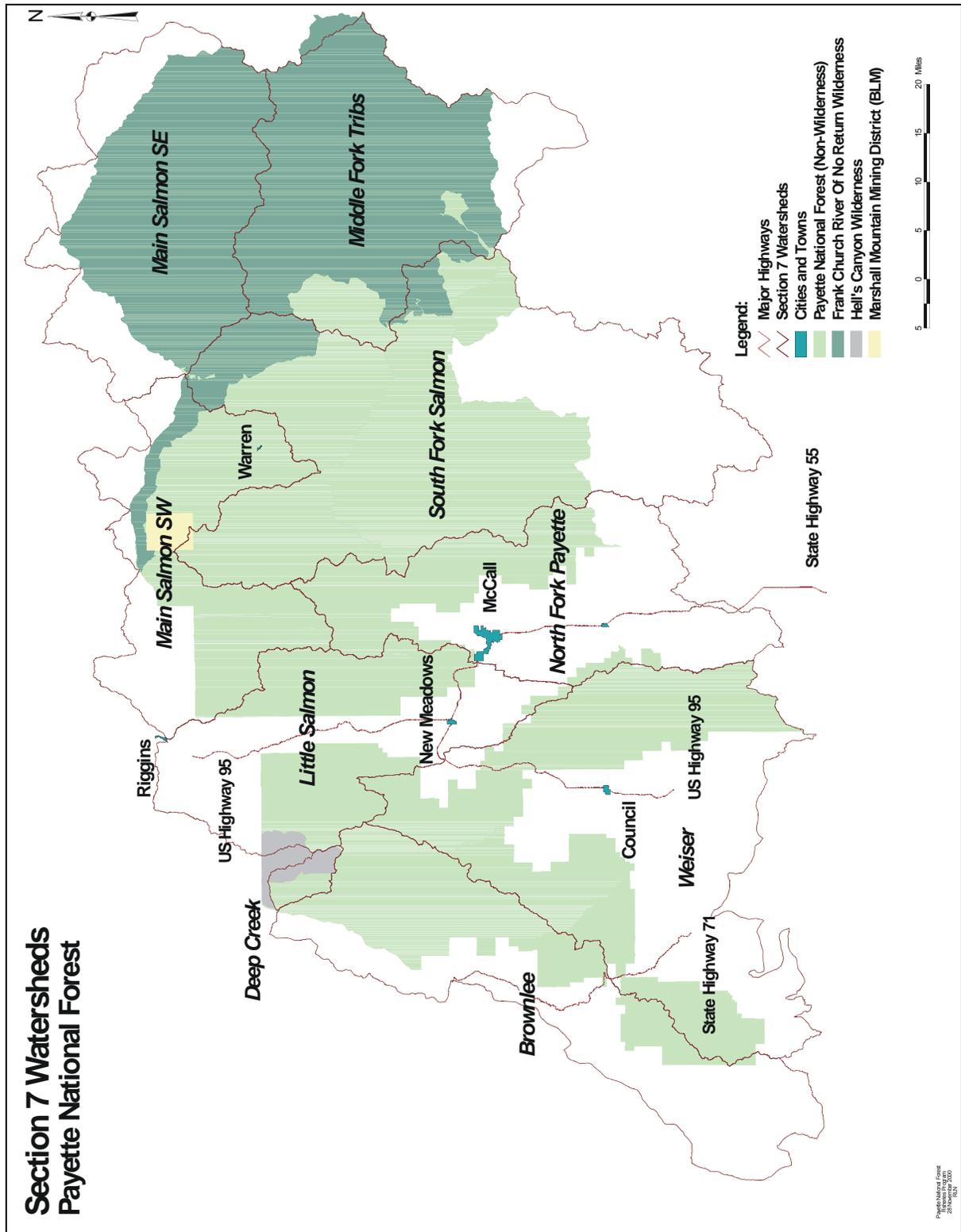


Figure 1.—Location of the South Fork Salmon River and North Fork Payette Section 7 Watershed in relation to all Section 7 Watersheds on the PNF.

II. GENERAL DESCRIPTION OF THE SECTION 7 WATERSHED

The general description the South Fork Salmon River Section 7 Watershed occurs in the Section II of the companion fish BA ([SFSR Volume 28](#)). The general description the North Fork Payette River Section 7 Watershed occurs in a previous fisheries BA for the effects of ongoing actions ([NFPR Volume 2](#), Faurot and Burns 2001).

A. LISTED SPECIES AND CRITICAL HABITAT

1. OVERVIEW

Wildlife species included in this BA are based on the biannual Forest-wide Species Lists prepared by the U.S. Fish and Wildlife Service for the Payette National Forest. The Canada lynx is the only listed species that may occur in the watersheds considered in this document. Modeled potential habitat for northern Idaho ground squirrels occurs in the North Fork Payette River Watershed, but the amounts on National Forest System lands are very limited and no colonies have been found ([Figure 2](#), next page). If NIDGS are found in the future, then consultation would be reinitiated. In Idaho, populations of the gray wolf south of Interstate 90 are currently considered experimental/non-essential (USDI FWS 1994), hence these populations are evaluated similar to a proposed species. Actions considered in this BA were determined to “not jeopardize” the gray wolf, so no discussion of this species is included.

Table 1.—Listed (Threatened and Candidate) Species on the Payette National Forest in the South Fork Salmon River and North Fork Payette Section 7 Watershed.

Common Name	Status	Section 7 Watershed	Critical Habitat Designated
Canada lynx	Threatened	South Fork Salmon River and North Fork Payette River	None

2. CANADA LYNX

a. Status and Management

The Final Rule to list the lynx as threatened under ESA by the USFWS occurred in March 2000 (65 FR 16052).

In 2000, the Canada Lynx Conservation Assessment and Strategy ([LCAS](#); Ruediger et al. 2000) was developed to provide a consistent and effective approach to conserve Canada lynx on federal lands. During 2002, an effort was started that would amend existing Forest Plans that are several years from revision or have just completed revision, so that they would be consistent with the Canada Lynx Conservation Assessment and Strategy (LCAS). The intent of this amendment (called the Northern Rockies Lynx Amendment) is to make existing plans that have little, if any, direction for lynx management, consistent with the Lynx Conservation Agreement and Strategy, 2nd Edition (Ruediger et al. 2000). The final EIS for this amendment was signed March 23, 2007.

The Payette National Forest is within the area for the Northern Rockies Lynx Amendment, but is not included in the amendment process because the Forest revised the Forest Plan in 2003 and included appropriate LCAS direction. An attempt was made to make Forest Plan direction consistent with the Northern Rockies Lynx Amendment, but because the later document took 4 more years to complete, some sections differ from the Forest Plan direction and from the LCAS.

b. Distribution

The lynx has a circumboreal distribution. In North America, the Canada lynx ranges across nearly all of Canada and Alaska, and extends south into the northern, forested United States. In the western U.S., lynx are known to occur in Washington, Idaho, Montana, and Wyoming along the spine of the Rocky Mountains.

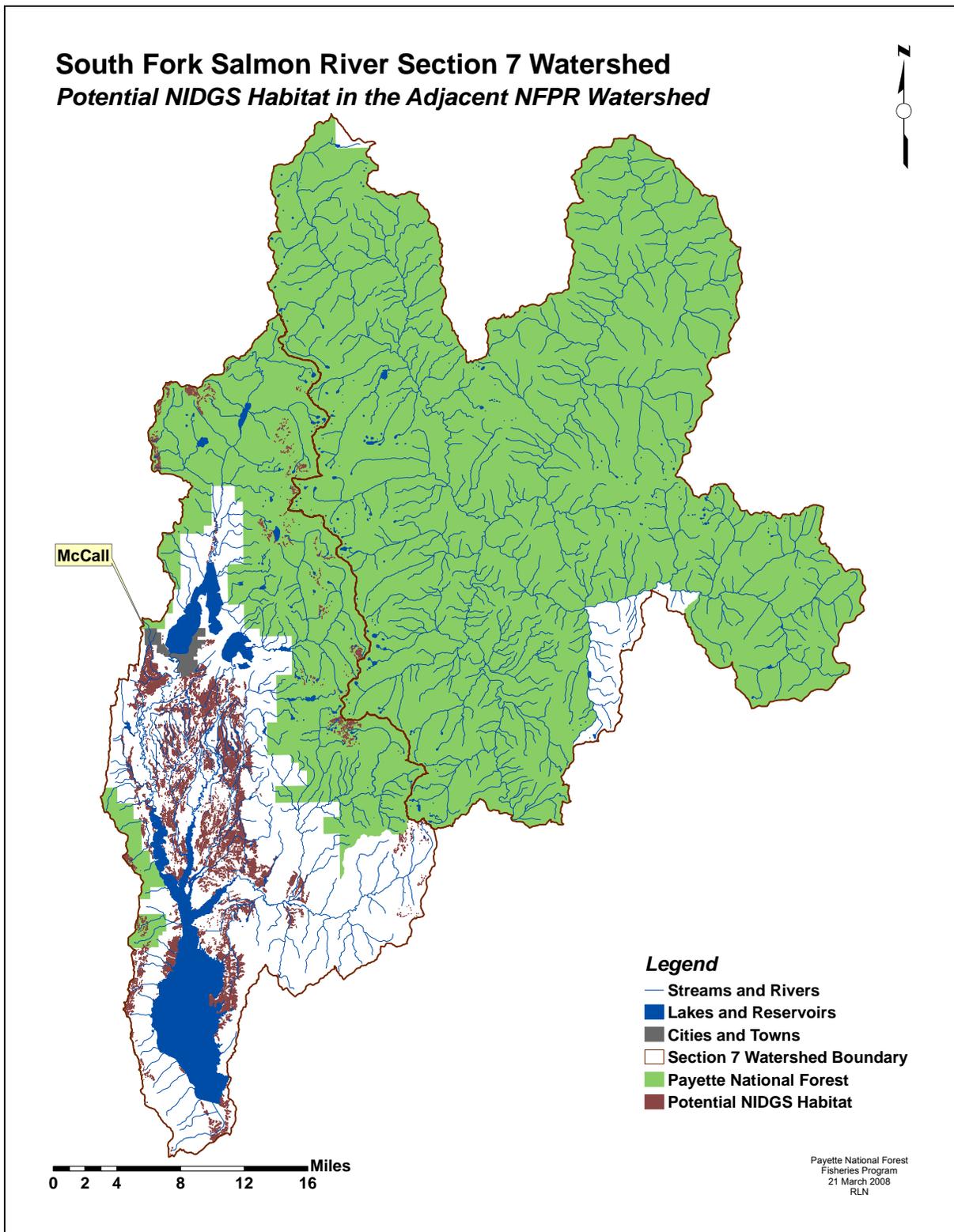


Figure 2.—Modeled potential habitat for NIDGS and known colonies in the North Fork Payette River Section 7 watershed.

Lynx may be present in the vicinity of the Payette National Forest, there was one verified lynx sighting in 1957, but there have been no verified sighting since then (Lewis and Wenger 1998, PNF files 2006). The Idaho Conservation Data Center maintains statewide records of rare animal observations (CDC 2002). There are 38 records through 2002 for lynx in the Southwest Idaho Ecogroup (Boise, Payette, and Sawtooth National Forests) and 5 records through 2002 for lynx on the Payette National Forest (Table 2). The Upper North Fork of the Payette occurs in the North Fork of the Payette Section 7 Watershed.

Table 2.—Idaho CDC - 2002 Lynx Occurrence Records

Lynx Analysis Unit Name	Number of Records
PNF-Disappointment-Little Squaw	1
PNF- Chamberlain	2
PNF- Cabin Canyon	1
PNF-Upper North Fork Payette	1
PNF Total	5

During 1999, a national effort was undertaken to collect lynx hair samples for DNA analysis. This survey was not intended to be a population monitoring or presence/detection approach, but rather an attempt to determine DNA variability for any lynx for which any hair sample that was collected. Areas to be surveyed were selected by local biologist because they believed had the highest likelihood of survey to encountering a lynx and collect a sample (Weaver 1999). No hair samples were found on the PNF, but 2 lynx hair samples were found on the Boise National Forest in 1999.

c. Life History

Lynx are usually more active at night than during the day. The eyes of lynx are well adapted for night hunting. Preferred winter food consists primarily of snowshoe hares, along with rodents such as red squirrels, and birds. Habitat for snowshoe hares generally consists of young conifer stands with relatively dense and interconnected canopies that provide both understory cover and food. Snowshoe hares densities in terms of patch size and spatial arrangement in north central Idaho range from 0.1 to 9.7 hectares/25 acres. Predation rates of snowshoe hares are high (>80%). Snowshoe hare populations tend to be cyclical in nature; however there is limited evidence that population cycles occur in the southern portion of their range because of high predation rates (Wirsing et al. 2002). Snowshoe hare are nocturnal during the winter (Foresman and Pearson 1999).

Many decades of aggressive fire suppression have likely reduced the quality and quantity of lynx and snowshoe hare habitat by altering the amount and pattern of vegetation types and structural stages (Ruediger et al. 2000). Fire had been a dominant influence historically in the northern Rocky Mountains (Agee 1999, Gruell 1983).

Forest management practices such as commercial harvest, road construction, and post harvest thinning can influence lynx habitat and its prey. Snowshoe hares may reach highest densities in young, dense coniferous or coniferous-deciduous forest and forest with a dense understory of shrubs, aspen, and /or conifers. Red squirrels appear in the later stages of forest development when mature cone-bearing trees are common.

Timber harvest is not a substitute for natural disturbance processes. Timber harvest may result in removal of biomass, especially larger trees; selective removal of particular tree species; removal, thinning, and planting that may give a competitive advantage to certain tree species; and the construction of roads that may be used as travel routes after the project has been completed. As a result, forest composition and structure have changed in these areas, with stands generally becoming more homogeneous, composed of more shade-tolerant species with more canopy layers, and being more susceptible to severe fire, insects, and diseases (Quigley et al. 1997).

Denning habitat for lynx occurs in mature and late structural boreal forests with locally abundant large woody debris present. Fire suppression and logging have altered the mosaic of habitats needed for prey species and denning sites (Ruediger et al. 2000, Wisdom et al. 2000).

d. Threats

Major risk factors for lynx include direct human threat (shooting, trapping, vehicle collisions), as well as forage and denning cover habitat modifications (Ruediger et al. 2000). Lynx have evolved a competitive advantage in deep snow environments due to their large paws that allow them to hunt prey where other predators cannot because of snow conditions. However, snow trails compacted by human activity may allow other predators to access prey in deep snow conditions where historically they were excluded. Advances in snowmobile capabilities have raised concerns about intrusion into previously isolated areas. Human access into lynx habitat during winter can also increase threats, because lynx tracks can be detected by traversing vast forest areas in a short period of time by snowmobile. The legal harvest of lynx was closed in Idaho in 1996 (Lewis and Wenger 1998, McKelvey et al. 1999, Wisdom et al. 2000).

Current conditions of lynx habitat have resulted from many factors, primarily related to fire. Timber harvest has had relatively minor effects, given the small amount of activity that has occurred in high-elevation lodgepole pine and subalpine fir forests. Fire suppression, on the other hand, has occurred for many decades over the entire Forest, resulting in changes to forest structure and composition, and an increase in fuels. Fire regimes for the PNF are as follows:

- Non-lethal, – 0-35 year frequency, low severity;
- Mixed1 – 35-100 year frequency, mixed severity;
- Mixed2 – 35-100+ year frequency;
- Lethal – 200+ year frequency, stand-replacing severity.

Most lynx habitat is within the Mixed 2 and Lethal fire regimes. From 1971 to 2000, an estimated 38 percent (879,049 acres) of the PNF was burned by wildfire. Forty percent (344,014 acres) of the 840,455 acres of potential lynx habitat burned during that same period (Table 3). Since 2000, an additional 546,000 (non-overlapping) total acres have burned on the Forest. In 2008, the PNF will assess the effects of these recent burns on Forest vegetation and potential lynx habitat.

Table 3.—Total Acres and Acres of lynx habitat Burned on the Payette National Forest, from 1970-2000 [PNF Forest Plan BA].

Decade	Total Acres Burned	Decade	Acres Lynx Habitat Burned
1971-1980	3,407	1971-1980	735
1981-1990	201,999	1981-1990	53,842
1991-2000	673,643	1991-2000	289,437
Total Burned	879,049	Totals	344,014
Percent Burned 1971-2000	38	Percent of Potential Habitat Burned, 1971-2000	40

^a Some of the areas burned in the 1991-2000 period, re-burned areas that burned during other time periods, but none of the burned acres were double counted in the totals. Fires less than 100 acres in size are not represented in these tables.

e. Habitat

Effects to Canada lynx are analyzed based on Lynx Analysis Units (LAUs) that have been delineated across the Forest. These LAUs were delineated across the Forest using fifth level hydrologic unit (HU) boundaries whenever possible. When fifth level HU were not appropriate a combination of sixth level HUs were used. Thirty-eight LAUs have been delineated on the Forest.

The South Fork Salmon River and North Fork Payette Section 7 watersheds contain the following LAUs: Blackmare-Fourmile, Buckhorn-Fitsum, Lower East Fork South Fork Salmon River, Lower Secesh, Lower South for Salmon River, Middle South Fork Salmon River, Stibnite, Upper Secesh, Kennally Creek, Lake Fork, and Upper North Fork Payette (Figure 3). Due to changes over time in the mapping of watershed boundaries, the boundary of these LAUs may not match the boundary of the SFSR and NF Payette River Section 7 watersheds.

The amount of suitable and potential habitat in each LAU was calculated for the Southwest Idaho Ecogroup (Boise, Payette, and Sawtooth National Forests) during revision of the Forest Plans. At that time, LANDSAT data was used to predict and map lynx habitat, because it was the only data set that

could be consistently applied across the entire Ecogroup. These data (PVGs/structural mapping) are highly dependent on canopy closure and likely a poor predictor of snowshoe hare habitat that is dependent on understory conditions (Hodges 1999, Wirsing et al. 2002). Also, fine-scale habitat features such as snags, patch size, and understory vegetation cannot be identified with LANDSAT data. LANDSAT is best, when used to identify broad patterns because of the limitations of the 30-meter resolution data (Redmond et al. 1997).

The analysis of the effects of the ongoing actions in this Biological Assessment followed direction in the Payette National Forest (PNF) Protocol for Lynx Analysis to use the best available information, a combination of PNF working groups and strata, LANDSAT imagery and ground verification. This habitat analysis was conducted using PNF working group and strata information when available. For those areas where working group and strata data were not available (wilderness areas) a combination of PVG and LANDSAT data were used. For more details on how these data sources were used see [Payette National Forest Lynx Analysis Protocol](#). Table 4 shows the amount of potential and suitable habitat found in each of the LAUs.

Table 4.—Potential and suitable lynx habitat by LAU in the SFSR and North Fork Payette Section 7 watersheds.

LAU	Total Acres	Potential Habitat Acres	Suitable Habitat Acres	Percent in Suitable Habitat
Blackmare-Fourmile	66,894	13,860	11,388	82 %
Buckhorn-Fitusm	60,600	7,796	7,748	99 %
Lower EFSF Salmon River	45,724	9,842	9,672	98 %
Lower Secesh	72,140	22,847	21,249	93 %
Lower South Fork Salmon River	92,492	15,060	12,035	80 %
Middle South Fork Salmon River	85,481	20,332	16,605	82 %
Stibnite	83,712	36,028	35,266	98 %
Upper Secesh	86,389	63,662	51,469	81 %
Kennally Creek	58,466	12,615	11,857	94%
Lake Fork	37,634	9,622	8,754	91%
Upper North Fork Payette	92,218	29,332	11,622	40%

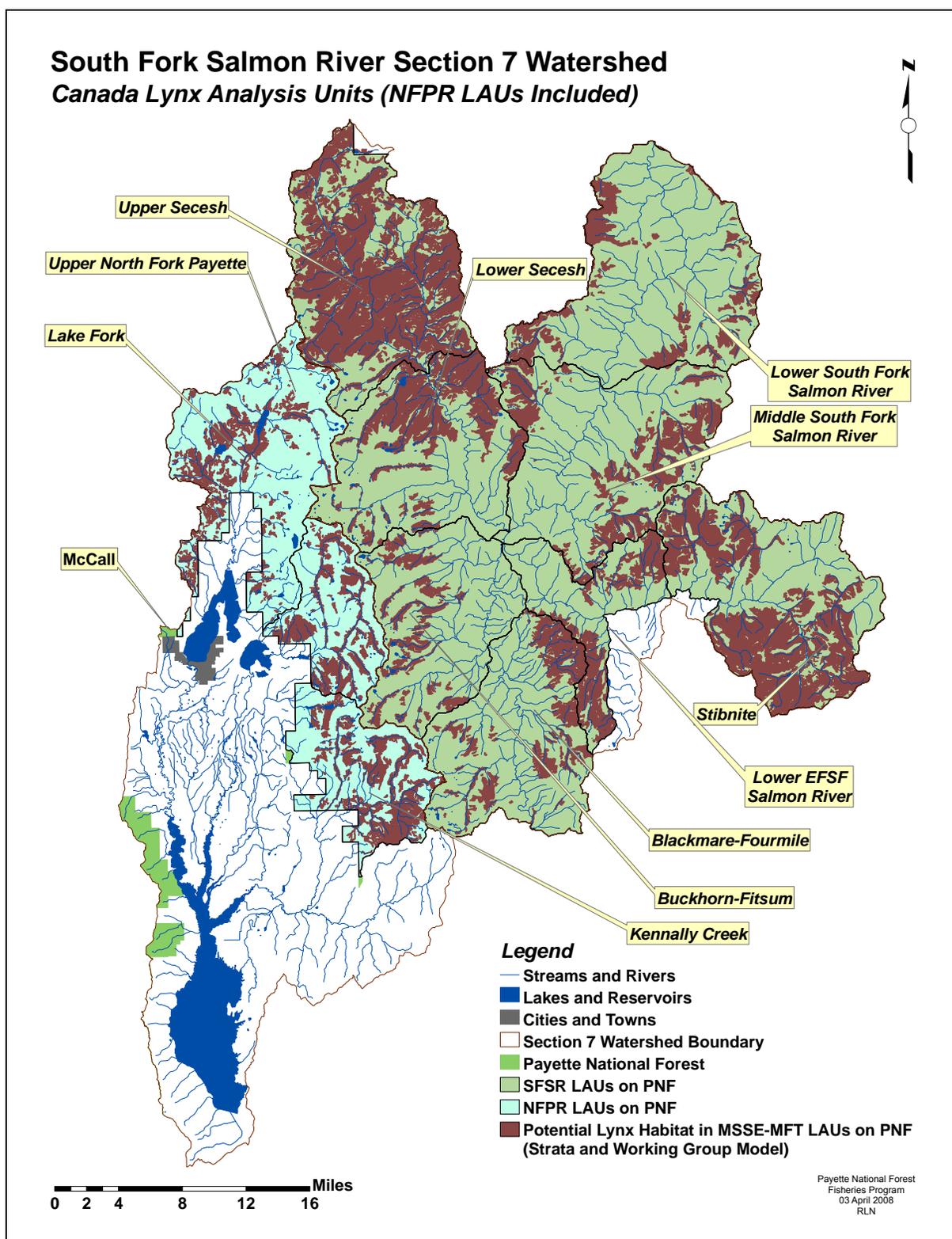


Figure 3.—Canada lynx analysis units and modeled potential habitat in the South Fork Salmon River and North Fork Payette Section 7 watersheds on the PNF.

III. SPECIFIC DESCRIPTION OF THE SUBWATERSHEDS (ENVIRONMENTAL BASELINE)

The South Fork Salmon River Section 7 Watershed is described in detail by subwatershed in the companion fish BA ([SFSR Volume 28](#)). The description of the North Fork Payette River Watershed occurs in a previous fisheries BA for the effects of ongoing actions ([NFPR Volume 2](#), Faurot and Burns 2001). Additional information pertinent to listed wildlife species is provided below for all subwatersheds combined.

A. CANADA LYNX

1. NATURAL PHYSICAL CHARACTERISTICS

The South Fork Salmon River and North Fork Payette Section 7 watersheds contain eleven lynx analysis unit (LAU). Lynx habitat is defined in the [Payette National Forest Lynx Analysis Protocol](#). The lynx is associated with boreal subalpine fir and lodgepole forested environments. They forage on snowshoe hare, mice, voles, squirrels, and birds. Lynx are not common in Idaho and are primarily restricted to northern Idaho. Primary criteria for lynx habitat are forested elevations above 5,000 feet composed of stands of spruce, subalpine fir and lodgepole pine. Primary foraging habitat is young pole stage lodgepole pine where they prey on snowshoe hare. Denning habitat is mature spruce and subalpine fir forest with extensive downfalls. The amount of potential and suitable lynx habitat is displayed in the Table 4.

2. HUMAN-CAUSED PHYSICAL CHARACTERISTICS

Current conditions of lynx habitat in the watershed have been somewhat affected by human-caused activities. Timber harvest has had relatively minor effects, given the small amount of activity that has occurred in high-elevation lodgepole pine and subalpine fir forests. Fire suppression has occurred for many decades over the entire Forest and resulted in changes to forest structure and composition, and an increase in fuels.

3. CUMULATIVE EFFECTS

Activities on and by state, county and private entities are cumulative to those actions being considered by the PNF. Activities authorized under this BA are designed to minimize effects of Forest management on lynx, thereby minimizing potential cumulative effects. Two actions that may contribute to the most cumulative effects on lynx habitat in the past are fire suppression and timber harvest. Fire suppression activities over the last 75-90 years have modified forest vegetation conditions towards "climax" conditions, although recent wildfires may be offsetting many of those effects.

Timber harvest over the same period of time has had a different set of effects. Harvest has generally converted older structural stages to younger ones and reintroduced seral species through reforestation. Harvest has also increased access, which has affected local populations of wildlife.

Hunting, trapping, livestock grazing, pesticide use, animal damage control, and firewood gathering have also adversely affected populations of some species. Overall, the combination of these and other effects mentioned previously have changed wildlife distribution and population from what they were before Euro-American settlement.

4. DESCRIPTION AND DISTRIBUTION OF THE LISTED SPECIES

The Idaho Conservation Data Center maintains statewide records of rare animal observations (ICDC 2002). There are 5 lynx records through 2002 on the Payette National Forest (Table 2).

5. HABITAT CONDITION, TREND AND LIMITING FACTORS

Much of the estimated lynx's habitat on the PNF has not been actively managed in the past, other than to suppress wildfires that would have otherwise altered age class, stand structure, and species composition. Large-scale management activities are not anticipated in lynx habitat; succession and fire will cause most of the vegetation changes over the long term as they have in recent years. Many areas that historically had patches of trees in mixed ages, sizes, and species have been replaced by larger stands of even-aged but older trees, in or approaching climax conditions. Long-term fire suppression has generally reduced lynx foraging habitat, but has likely benefited denning habitat.

Although a large amount of lynx habitat has burned within the last 35 years, it is estimated that 15-30 years may be needed for succession to advance before some of these recently burned areas turn into lynx foraging habitat (Ruediger et al. 2000). Recently burned areas are not considered suitable lynx habitat until they become re-established with sufficient vegetation to support lynx prey i.e. snowshoe hare, and cover for lynx. The SFSR and NF Payette watersheds have considerable amounts of lynx habitat as shown in Table 4 and Figure 3.

IV. DESCRIPTIONS OF PROPOSED ACTIONS

The proposed action descriptions occur in the companion fish BA ([SFSR Volume 28](#)). Additional descriptions and mitigation pertinent to wildlife occur here.

A. FEDERAL ACTION: MISCELLANEOUS FOREST PRODUCTS

DATES OF PREVIOUS CONCURRENCE: Sept. 12, 2000

DESCRIPTION:

See companion fish BA ([SFSR Volume 28](#)) for definition of action and general mitigations.

Lynx

- If more than 30 percent of lynx habitat within a LAU is currently in unsuitable condition no additional habitat may be changed to unsuitable habitat as a result of vegetative management projects (FP TEST15). This standard does not apply in the following: (FP TEST14)
 - Within 200 feet of Forest Service administrative sites, dwellings, and /or associated outbuildings as needed to reduce risk of loss from wildfire.
 - Research studies and genetics tests (i.e., performance test, long-term field test and realized gains trials) necessary to evaluate genetically improved reforestation stock.
 - Within the wildland urban interface in order to develop or maintain fuel profiles that are necessary to reduce the risk of wildfire.
 - Where outweighed by demonstrable short- or long- term benefits to lynx and its prey habitat conditions

B. FEDERAL ACTION: MISTLETOE CONTROL AND PRE-COMMERCIAL THINNING

DATES OF PREVIOUS CONCURRENCE: Sept. 12, 2000

DESCRIPTION:

See companion fish BA ([SFSR Volume 28](#)) for definition of action and general mitigations.

ADDITIONAL MITIGATIONS FOR WILDLIFE:

Lynx

- Within lynx habitat, pre-commercial thinning will be allowed only when stands no longer provide snowshoe hare habitat (e.g., self-pruning processes have eliminated snowshoe hare cover and forage availability during wine condition with average snow pack). (LCAS, p. 7-6).

C. FEDERAL ACTION: FIRE MANAGEMENT ACTIVITIES

DATES OF PREVIOUS CONCURRENCE: Sept. 12, 2000

DESCRIPTION:

See companion fish BA ([SFSR Volume 28](#)) for definition of action and general mitigations.

ADDITIONAL MITIGATIONS FOR WILDLIFE:

Lynx

Prescribed Fire

- All prescribed fire proposals in or near potential lynx habitat are to be coordinated with a journey level wildlife biologist

Wildland Fire Use

- A wildlife biologist will be involve in the development of the Wildland Fire Implantation Plan (WFIP) when fire occurs in, or has potential to enter lynx habitat

Wildland Fire Suppression

- A wildlife biologist will be involved in the development of the Wildland Fire Situation Analysis (WFSA) when fires occur in or have potential to enter lynx habitat.
- The use of backfires that may result in an LAU exceeding 30% unsuitable lynx habitat will be discussed with the USFWS.

D. FEDERAL ACTION: NOXIOUS WEED MANAGEMENT

DATES OF PREVIOUS CONCURRENCE: None

DESCRIPTION:

See companion fish BA ([SFSR Volume 28](#)) for definition of action and general mitigations.

ADDITIONAL MITIGATIONS FOR LYNX:

- No additional mitigation

E. FEDERAL ACTION: ROAD MANAGEMENT

DATES OF PREVIOUS CONCURRENCE: Sept. 12, 2000

DESCRIPTION:

See companion fish BA ([SFSR Volume 28](#)) for definition of action and general mitigations.

ADDITIONAL MITIGATIONS FOR LYNX:

- Within lynx habitat, minimize roadside brushing in order to provide snowshoe hare habitat (LCAS, p. 7-10).

F. FEDERAL ACTION: TRAILS, RECREATION, AND ADMINISTRATIVE SITE OPERATION AND MAINTENANCE

DATES OF PREVIOUS CONCURRENCE: Sept. 12, 2000

DESCRIPTION:

See companion fish BA ([SFSR Volume 28](#)) for definition of action and general mitigations.

ADDITIONAL MITIGATIONS FOR LYNX:

Lynx

- No additional mitigation

G. FEDERAL ACTION: TRAVEL PLAN

DATES OF PREVIOUS CONCURRENCE: Sept. 12, 2000

DESCRIPTION:

See companion fish BA ([SFSR Volume 28](#)) for definition of action and general mitigations. No change in winter travel has been decided at this time.

ADDITIONAL DESCRIPTION OF TRAVEL PERTINENT TO LYNX:

In addition to revision of the Travel Plan for designated roads and trails, as described in the Travel Plan FEIS (USFS 2007), the action as described in this BA includes the ongoing activity of dispersed recreation during snow-free seasons. Hiking, bird watching, fishing, berry picking, hunting, and camping are just a few of the many types of dispersed recreation activities that occur on the Payette National Forest. The vast majority of these activities occur within a short distance of existing roads and trails and during snow-free times of year. Winter camping, snowmobiling, backcountry skiing, and snowshoeing are types of activities that occur when snow is present, but only the winter travel activity of over-snow motor vehicle use (i.e., snowmobiling) is specifically addressed in the Travel Plan FEIS. The winter travel activity of over-snow motor vehicle use will be analyzed using a separate

consultation process and document. No ROD for winter travel will be issued until this separate consultation process is completed.

ADDITIONAL MITIGATION FOR WILDLIFE:

Lynx

- Manage recreational activities to maintain lynx habitat and connectivity (LRMP TEOB30)
- Minimize building of roads directly on ridgelines (LCAS, p. 7-10)
- Forest wildlife biologists would further analyze the projected main wildlife travel corridors and propose actions, if necessary, to promote their viability for use for lynx, wolverine, and other forest carnivores.

H. FEDERAL ACTION: LIVESTOCK GRAZING ALLOTMENTS.

DATES OF PREVIOUS CONCURRENCE: Sept. 12, 2000

DESCRIPTION:

See companion fish BA ([SFSR Volume 28](#)) for definition of action and general mitigations.

Lynx

- Delay livestock use in post fire and post harvest created openings in lynx habitat until successful regeneration of the shrub and tree components occurs. (LCAS, p. 7-11)
- Within lynx habitat, manage livestock grazing in riparian areas to maintain and achieve mid seral or higher condition. (LCAS, p. 7-11)

I. FEDERAL ACTION: POWER AND TELEPHONE LINE EASEMENTS ON FEDERAL LANDS.

DATES OF PREVIOUS CONCURRENCE: Sept. 12, 2000

DESCRIPTION:

See companion fish BA ([SFSR Volume 28](#)) for definition of action and general mitigations.

ADDITIONAL MITIGATIONS FOR LYNX:

- No additional mitigation

J. FEDERAL ACTION: BIG CREEK LODGE

DATES OF PREVIOUS CONCURRENCE: Sept. 12, 2000

DESCRIPTION:

See companion fish BA ([SFSR Volume 28](#)) for definition of action and general mitigations.

V. ANALYSIS OF POTENTIAL EFFECTS

A. EFFECTS OF MANAGEMENT DISTURBANCES

1. DIRECT AND INDIRECT EFFECTS OF MISCELLANEOUS FOREST PRODUCTS

Harvest of miscellaneous forest products includes firewood, post and poles, Christmas trees, small volumes of timber (less than 70 acres of green harvest of 250 acres of salvage in any analysis area annually), and mushrooms and other plants and seeds by permitted Forest users.

Lynx

Small Volume Timber Harvest

Additional Project Description Information Pertinent to Lynx Analysis.—The majority harvest of small volumes of timber (less than 70 acres) and salvage harvest (less than 250 acres) on the PNF occur in ponderosa pine and mixed conifer stand and are outside potential lynx habitat. For projects inside of potential lynx habitat, harvest will be not be allowed if more than 30% of lynx habitat within the LAY is currently in an unsuitable condition and management actions will not change ore that 15 % of lynx habitat within a LAU to an unsuitable condition within a 10-year period (LCAS, p. 3-5).

Effects Discussion.—LCAS Consistency: Harvesting in lynx habitat could temporarily disturb lynx that are using the area, although such use is highly unlikely. Harvesting occurs mainly during daylight hours. Temporal segregation likely minimizes any impact that disturbance would have on lynx.

Personal Use Firewood

Additional Project Description Information Pertinent to Lynx Analysis.—Approximately 4,500 cords of personal use firewood are sold each year on the 2.3 -million acre Payette National Forest. Firewood regulations require that only dead trees may be taken. Firewood permits designate areas that are unavailable for firewood collection. The permits include maps that specify practices and locations for removing forest products. Areas approved for personal use firewood collection are reviewed on an annual basis based on availability of wood, resource protection needs, and access.

Effects Discussion.—Firewood collection in lynx habitat could temporarily disturb lynx that are using the area, although it is highly unlikely that lynx occur in areas where most firewood collection occurs on the PNF. Firewood collection occurs mainly during daylight hours. Temporal segregation likely minimizes any impact that disturbance would have on lynx as discussed in the Lynx Conservation Assessment and Strategy (LCAS, p. 7-8). Additionally, western larch and Douglas-fir are preferred species for firewood and are not typically a major component of suitable lynx habitat. The low volume of firewood collected over the amount of area on the PNF does not result in conversion of suitable habitat to unsuitable habitat.

Personal Use Christmas Tree Sales

Additional Project Description Information Pertinent to Lynx Analysis.—Approximately 1,000 personal use Christmas tree permits are sold annually on the 2.3 -million acre Payette National Forest. The permits include maps and guidelines that specify authorized practices and locations for removing forest products. There is a limit of two trees per household. Permit holders are typically restricted by snow and road access as to where they can find a suitable tree.

Effects Discussion.—Personal use Christmas tree harvest does not result in the conversion of lynx habitat to an unsuitable condition or impact connectivity of habitat across the landscape. This is because the small number of trees harvested (estimated to be less than 2,000 trees) is generally removed from areas that are within 100-200 feet of an open road or groomed snowmobile route across the 2.3 million acre Forest. Removal of such small amounts does not result in conversion of suitable lynx habitat to unsuitable habitat and meets the direction in the LCAS and PNF Land and Resource Management Plan (LCAS, p. 7-3 and LRMP TEST 16).

Post and Poles

Additional Project Description Information Pertinent to Lynx Analysis.—Approximately 15 acres of green post and pole sales are sold each year on the 2.3 -million acre Payette National Forest. Trees are cut only in designated areas.

Effects Discussion.—Cutting of post and poles in lynx habitat could temporarily disturb lynx that are using the area, although such use is highly unlikely because currently lynx are considered rare on the PNF. Post and pole collection occurs mainly during daylight hours. Temporal segregation likely minimizes any impact that disturbance would have on lynx. Areas within lynx habitat will only be designated for cutting when removal of these trees does not increase unsuitable habitat above 30% of potential. Therefore, effects to lynx habitat are expected to be insignificant. This meets the LCAS and LRMP direction for protection of lynx habitat (LCAS, p. 7-3 and LRMP TEST16).

2. DIRECT AND INDIRECT EFFECTS OF MISTLETOE CONTROL AND PRE-COMMERCIAL THINNING

Mistletoe control and pre-commercial thinning occur as follow up activities to previous timber harvest or in other tree stands where stand density is too great to meet management objectives. Mistletoe control can involve the removal of any size tree infested with mistletoe. Pre-commercial thinning generally occurs 15-25 years after a timber sale to reduce stand density. Most stands to be thinned are plantations.

Lynx

Additional Project Description Information Pertinent to Lynx Analysis.—The majority of mistletoe control and pre-commercial thinning project on the PNF occur in ponderosa pine and mixed conifer stand and are outside potential lynx habitat. For projects inside of potential lynx habitat, pre-commercial thinning will be allowed only when stands no longer provide snowshoe hare habitat (e.g., self-pruning processes have eliminated snowshoe hare cover and forage availability during winter condition with average snow pack) (LCAS, p. 7-6).

Effects Discussion.—LCAS Consistency: Thinning in lynx habitat could temporarily disturb lynx that are using the area, although such use is highly unlikely. Thinning occurs mainly during daylight hours. Temporal segregation likely minimizes any impact that disturbance would have on lynx.

3. DIRECT AND INDIRECT EFFECTS OF FIRE MANAGEMENT ACTIVITIES

Lynx

Prescribed Fire

Additional Project Description Information Pertinent to Lynx Analysis.—The prescribed fire program on the Payette National Forest is designed to achieve and maintain desired vegetative condition and appropriate fuel levels. Fire operates within historical fire regime appropriate to the vegetation type and management objectives.

Effects Discussion.—The LCAS calls for fire to be restored as an ecological process: Use fires to move toward landscape patterns consistent with historical succession and disturbance regimes (LCAS, p. 7-8). The LRMP states “Use fire alone or with other management activities to maintain desirable plant community attributes including fuel levels, as well as ecological process”

These objectives drive all prescribed fire projects. For this reason, prescribed fire projects on the PNF are likely to benefit lynx habitat in the long term. In addition, LRMP standard TEST15 states “if more than 30 percent of lynx habitat within an LAU is currently unsuitable condition, no additional habitat may be changed to unsuitable habitat as a result of vegetative management projects. Application of this standard ensures that lynx habitat is maintained in the short and long term. The one exception is the wildland urban interface (WUI) projects are not bound by this standard. WUI projects are intended to maintain or reduce fuel profiles needed to reduce the risk of wildfire threats to wildland urban interface areas. WUI projects occur within the wildland urban interface generally within ¼ to ½ mile of

the urban areas. It is unlikely that these types of projects would affect lynx. Lynx would probably avoid the urban interface areas due to human disturbance, so therefore do not utilize this habitat.

Wildland Fire Use

Additional Project Description Information Pertinent to Lynx Analysis.—The wildland fire Use Program on the Payette NF focuses on restoring fire as an ecological process to Forest Service lands. Fires that are determined to be within the criteria outlined in the LMRP and the Forest Fire Management Plan are allowed to burn, as they would have historically.

Effects Discussion.—The LCAS calls for fire to be restored as an ecological process: “Use fires to move toward landscape patterns consistent with historical succession and disturbance regimes” (LCAS, p. 7-7). In some cases large fires may increase unsuitable lynx habitat above 30 percent in the short term. The LCAS state “periodic vegetation disturbances maintain the snowshoe hare prey base for lynx. In the period immediately following large stand replacing fires, snowshoe hare and lynx densities are low. Populations increase as the vegetation grows back and provide dense horizontal cover, until vegetation grows out of the reach of hares (LCAS, p. 7-7, 7-8). Therefore, in the long term, even large stand replacing fires, like those on which the landscape order will benefit lynx habitat.

Wildland Fire Suppression

Additional Project Description Information Pertinent to Lynx Analysis.—Fire, both prescribed and wildland is used as a tool to achieve and maintain vegetative condition and desired fuel levels. Fire plays a natural role where appropriate and desirable, but is actively suppressed where necessary to protect life, investments, and valuable resources. Fire operates within historical fire regimes appropriate to the vegetation type and management objectives. (LRMP, p. III-38)

Effects Discussion.—The LCAS states that in the event of a large wildfire, conduct a post-disturbance assessment prior to salvage harvest, particularly in stands that were formerly in late successional stages to evaluate potential for lynx denning and foraging habitat (LCAS, p. 7-7). A wildlife biologist will be involved in the development of the Wildland Fire Situation Analysis (WFSA) when fires occur in or have potential to enter lynx habitat. Backfires that create more than 30% unsuitable lynx habitat will be discussed with the FWS.

4. DIRECT AND INDIRECT EFFECTS OF NOXIOUS WEED MANAGEMENT

Lynx

Effects Discussion—As directed in the LCAS (p. 7-17) “Management activities should seek to minimize the loss or modification of lynx habitat as a result of the spread of non native invasive plant species (LCAS, p. 7-17). Control and eradication of noxious weeds will help maintain or improve lynx habitat. Therefore, the Noxious Weed Control program may benefit lynx. Such benefits are expected to be minor due to the low likelihood that lynx occur on the Forest and the small amount of acres treated each year cross the PNF, (generally less than a few hundred acres). Based on the analysis of effects of the noxious weed program on NIDGS (see Middle Fork Weiser Watershed BA) , it is extremely unlikely that small mammals would concentrate herbicides to any extent to cause 1) harm to the small mammal and 2) result in secondary poisoning of lynx that may prey upon the small mammals.

5. DIRECT AND INDIRECT EFFECTS OF ROAD MANAGEMENT

Lynx

Effects Discussion.—Preliminary information in the LCAS (p. 7-10) suggests that lynx may not avoid roads, except at high traffic volumes. Because of the lack of research on the effects of road density on lynx, the LCAS goes on to state: ‘therefore, at this time, there is no compelling evidence to recommend management of road density to conserve lynx’. The LCAS further states: Determine where high total road densities (2 miles per square mile) coincide with lynx habitat, and prioritize roads

for season restriction or reclamation in those areas, and: Minimize roadside brushing in order to provide snowshoe hare habitat. The analysis for the Travel Plan addresses the direction above. The description of the Road Management Action requires that roadside brushing be minimized. In addition, Road Management Objectives are established for every road in the Forest road system. Consideration of the LCAS recommendations will occur as appropriate when establishing or reviewing Road Management Objectives and in consideration with other resource needs and user safety. For these reasons, effects of road management on lynx and lynx habitat are expected to be negligible.

6. DIRECT AND INDIRECT EFFECTS OF TRAILS, RECREATION AND ADMINISTRATIVE SITE OPERATION AND MAINTENANCE

Lynx

Trail Management

Additional Project Description Information Pertinent to Lynx Analysis.—All 38 LAUS on the PNF have established trails. Trail maintenance activities generally include removing fallen trees from across the trail, pruning vegetation, tread and drainage maintenance of the trail itself, installing signs, and maintenance of bridges on the trail. Trails are generally less than 6 feet wide. All trails do not receive annual maintenance. The miles of trail maintained fluctuate yearly with annual budgets. This action includes “Replacement or moving of trail segments (to improve trail function, for resource protection or other management needs), if potential effects to stream channels are reduced or eliminated,” but does not include new trail construction.

Effects Discussion.—The LCAS does not identify specific threats to lynx from trails although it mentions it is possible that summer use of roads and trails through denning habitat, may have negative effects if lynx are forced to move kittens because of associated human disturbance (Ruggiero et al. 2000). Most, if not all, trail maintenance activities occur during the day. Disturbances associated with trail maintenance or segment replacement represent a very short term and localized disturbance. The abundance of diurnal security habitat in trailed areas, and temporal segregation of use, likely minimizes disturbance to lynx along trails. Trail width (6 feet) is not great enough to deter lynx movement throughout suitable habitat. It is unlikely that trails would affect lynx denning habitat. Lynx are believed to be extremely rare on the Payette NF and there are no known den sites, hence there is a low likelihood that a trail would be near any den sites.

Campgrounds and Administration Sites

Additional Project Description Information Pertinent to Lynx Analysis.—There are developed campgrounds and administration sites within suitable lynx habitat on the Forest. Most developed campgrounds have forested vegetation between and around each campsite. Trailhead sites exist adjacent to existing roads and some are located in suitable lynx habitat. Lookouts for fires suppression occur outside, but often adjacent to, lynx habitat. Some Forest Service winter rental facilities are located in suitable lynx habitat and are accessed by winter visitors by skiing, snowshoeing or snowmobiling, in accordance with the travel management plan. In addition to use of these areas, other activities that may occur in campgrounds and administrative sites include maintenance activities such as: painting, individual tree removal, grading and/or graveling roads in the site, replacement of camping structures (fire rings, picnic tables), and repair to comfort stations.

Effects Discussion.—Campgrounds and administrative sites on the PNF do not provide suitable lynx habitat although some are located within suitable lynx habitat. Developed campgrounds and administration sites generally do not provide suitable foraging or denning habitat because tree structure and down woody debris is not sufficient to either support a prey base or provide for denning. Habitat characteristics utilized by lynx and their primary prey species would typically not be found in campgrounds and administrative sites since these areas are not managed for dense, multi-layered vegetation that maximizes cover and browse and ground cover but usually as more open areas with larger, well-spaced trees with high crowns or in some cases (i.e., fire lookouts) the areas are managed

as completely open areas. It is anticipated that lynx will not utilize these sites to any degree because of the lack of foraging or denning habitat.

The maintenance and use of developed campgrounds and administrative sites is consistent with the LCAS because it “concentrates recreational activities within existing developed areas rather than developing new recreational areas in lynx habitat (LCAS, p.7-8).

For the reasons discussed above, the effects of trails, recreation, and administrative site operations and maintenance on lynx and lynx habitat are expected to be negligible.

7. DIRECT AND INDIRECT EFFECTS OF THE TRAVEL PLAN

Lynx

Roads, Trails, and Motorized Access during Snow-free Periods

Effects Discussion. —There is little information on the effects of roads and trails on lynx or their prey (Apps 2000, McKelvey et al. 2000). Construction of roads may remove lynx habitat; conversely, lynx may use less-traveled roads for travel and foraging if vegetation conditions provide good snowshoe hare habitat. Preliminary information indicates that lynx do not avoid roads except those with high traffic volume (Aubry et al. 2000, Ruggerio et al. 2000a) or when road use coincides with sensitive habitat such as denning habitat (Ruggerio et al. 2000b).

The likelihood of lynx encountering people has dramatically increased over the last few decades because of elevated levels of human access into lynx habitat. Roads and trails, snowmobiles, off-road vehicles, and ski area developments enable human access into historically remote forests, thereby increasing the likelihood of lynx being displaced from otherwise suitable habitats and increasing the vulnerability of lynx to human-induced mortality (Brittell et al. 1989, Koehler and Brittell 1990). Roads may also increase the vulnerability of lynx to hunters and trappers (Koehler and Aubry 1994).

Lynx avoid open areas and use mature forest or forest with dense cover, tall shrubs, and well-vegetated riparian areas as travel corridors. Lynx will use some types of roads for hunting and travel down old roads less than 50 feet wide with good cover along both edges (Koehler and Brittell 1990) and cross openings less than approximately 300 feet in width (Koehler and Aubry 1994). However, roads may disrupt lynx travel and hunting patterns. Koehler and Aubry (1994) concluded road construction and maintenance are important components of lynx habitat management because they both destroy and create prey habitat, but also make lynx more vulnerable to human-caused mortality.

The PNF Forest Plan (USDA Forest Service 2003) does not include a guideline or standard for road densities in relation to lynx habitat. The Lynx Conservation and Assessment Strategy (LCAS) recommends prioritizing roads for closure or seasonal restrictions in lynx habitat where road densities exceed two miles per square mile, but the Fish and Wildlife Service has concluded that roads, even with high traffic volume, constitute a low threat to lynx populations (USDI 2003). In all LAUs in the SFSR and NF Payette River watersheds, the densities of open motorized routes within lynx habitat are far less than 2.0 miles/square mile.

Refugia

Effects Discussion. —Research suggests that local refugia are critical for successful lynx reproduction and fitness (Ruediger et al. 2000). “Refugia” are large areas of high quality habitat relatively secure from human exploitation, habitat degradation, and disturbance. The minimum size of refugia for lynx is unknown, but a study in north-central Washington found that a 448,000-acre area is sustaining lynx populations (Koehler 1990), but this area is also connected to lynx habitat and populations in Canada. The PNF has large blocks of relatively undisturbed areas or potential “refugia” in the Inventoried Roadless Areas (IRAs). All 22 IRAs on the PNF contain potential lynx habitat. About 69 percent (638,924 of 926,600 acres) of potential lynx habitat on the PNF outside of Wilderness occurs in IRAs. Cumulatively, additional refugia are provided outside the Travel Plan project area in the FC-RONR Wilderness. The wilderness contains 770,700 acres of LAUs with 488,700 acres of potential lynx habitat.

Based upon the current and historic status of lynx in Idaho, there is a low probability of lynx occurrence on the Forest. In the SFSR and NF Payette Watershed, the Travel Plan will have a limited effect on lynx habitat during snow-free months. The Travel Plan action was designed to ensure consistency with Forest Plan direction for protection of lynx and lynx habitat. Specifically, the standard *TEST12* states: “*minimize or avoid management actions within known nest or denning sites of TEPC species if those actions would disrupt reproductive success during the nesting or denning period. During project planning, determine sites, periods, and appropriate mitigation measures to avoid or minimize effects.*” Although lynx denning habitat exists throughout the Forest, no actual lynx dens are known to be present on the Forest. Denning habitat occurs in dense timber stands with an abundance of fallen logs. The Travel Plan does not allow for off-road travel and continues to protect IRAs from motorized use, thereby minimizing potential impacts to lynx denning habitat.

Non-motorized Dispersed Recreation

Effects Discussion. —The frequency of use of dispersed trail sites and the numbers of individuals using dispersed sites and participating in dispersed activities is unknown. Dispersed recreation during snow-free times of the year is not expected to greatly influence lynx behavior and/or use of suitable lynx habitat. The LCAS does not identify specific threats to lynx from trails or trail use although it mentions it is possible that summer use of roads and trails through denning habitat, may have negative effects if lynx are forced to move kittens because of associated human disturbance (Ruggiero et al. 2000). Since most trail use occurs during the day, disturbances associated with trail use represent a temporary and localized disturbance and any effects are expected to be insignificant. The abundance of diurnal security habitat in trailed areas, and temporal segregation of use, is expected to minimize disturbance to lynx along trails. It is recognized not all studies have shown lynx activity to be correlated only with nocturnal or crepuscular activity and that Apps (2000) hypothesized that weather may be the factor that determines when lynx are most active. Given the large home range of the species and the opportunity to avoid temporary disturbances from recreationists, disturbance to lynx in the vicinity of dispersed recreation sites is expected to be minimal and will have very little effect on diurnal security. Other dispersed recreation activities (berry picking, fishing, bird-watching, camping, etc.) during snow-free periods are expected to have similar effects as described for trail use.

Winter dispersed recreation (motorized and non-motorized) will be addressed in the separate consultation for winter travel.

Habitat Connectivity

Effects Discussion. —Habitat connectivity is also an important component of habitat conservation for lynx. Providing for habitat connectivity in order to promote wildlife movement and genetic interaction benefits lynx populations by maintaining secure habitat in dispersal routes used by juvenile animals and for breeding activities. Areas with high road densities and/or human use patterns can interrupt habitat connectivity and fragment lynx habitat (Ruediger et al. 2000). The LCAS discourages the building of motorized routes on ridge tops as this might interfere with lynx habitat connectivity. Forest Plan direction on this topic is broader (TEOB30) and states: “Manage recreational activities to maintain lynx habitat and connectivity.” Based upon the current and historic status of lynx in Idaho, there is a low probability of lynx occurrence on the Forest. The Travel Plan in snow-free periods will have a limited effect on lynx habitat connectivity. Existing roads in the watersheds occur generally near waterways (as opposed to ridge tops) and no cross-country OHV travel is allowed. Areas and corridors that could provide habitat connectivity for lynx were identified during the Travel Plan analysis. No effects to these areas are anticipated in relation to travel during snow-free months in the SFSR or North Fork Payette River watersheds.

8. DIRECT AND INDIRECT EFFECTS OF LIVESTOCK GRAZING

Effects Discussion. —Five sheep allotments occur within lynx habitat in the North Fork Payette River Section 7 Watershed (No livestock allotments occur in the SFSR watershed). Livestock grazing was determined consistent with the LCAS if vegetation is moving towards or meets the desired vegetative status of the LCAS. The LCAS specifically requires that livestock use not be allowed in openings created by fire or areas where timber harvest has occurred such that grazing would delay successful

regeneration of the shrub and tree components (LCAS, p. 7-11). The concern is for the development and maintenance of habitat for lynx prey (snowshoe hare). The LCAS also directs livestock grazing within riparian areas in lynx habitat to provide conditions for lynx and lynx prey (LCAS, p. 7-11) and to ensure that ungulate grazing does not impede the development of snowshoe hare habitat in natural or created openings within lynx habitat (LCAS, p. 7-11).

On the PNF, management of allotments within LAUs is consistent with LCAS direction to maintain habitat for lynx prey. Specifically, grazing is excluded in timber harvest or fire areas when it would delay successful vegetation regeneration and grazing is managed to protect riparian areas (P. Grinde pers. commun.) In addition, as part of permit administration, permittees are given instructions about the protected status of lynx.

Effects to lynx on the PNF from livestock grazing are expected be negligible. This is because evaluations show allotments are being managed to be consistent with the LCAS and because allotment management meets other conservation measures (described above).

9. DIRECT AND INDIRECT EFFECTS OF POWER AND TELEPHONE LINE EASEMENTS ON FEDERAL LAND

Effects Discussion —This action has very little potential to affect lynx. Negligible effects are expected because falling trees and brushing powerline corridors will yield little ground disturbance and such activities will occur in areas that have previously been disturbed (when the lines were initially constructed.)

10. DIRECT AND INDIRECT EFFECTS OF BIG CREEK LODGE

Effects Discussion —This permit allows activities in winter that may result in snow-compaction such as cross-country ski trails, snowmobiling, and snowshoeing. Snow compaction from these activities may provide routes for lynx predators and/or competitors. These activities as permitted do not increase the amount of play areas or groomed snowmobile trails above the baseline established at the time lynx were listed. Since no additional snow compacting activities are involved, the action meets direction in the LRMP (TEST 33) and LCAS (p.7-10). In addition, most of the human activity occurs during the daylight, so there is likely temporal segregation of these activities from any lynx activity in the area.

VI. MITIGATION MEASURES

No additional mitigation measures are needed other than those specified in the descriptions of the proposed actions.

VII. MONITORING AND EVALUATION

No additional monitoring is proposed beyond what is described in the descriptions of the specific actions. The status of monitoring required of ongoing actions is displayed in Table 4.

VIII. DETERMINATIONS

Table 5.— Determinations for ongoing actions.

Federal Action	Lynx Effects Determination	Expiration Date
Miscellaneous Forest Products	NLAA	Dec. 31, 2017
Mistletoe Control and Precommercial Thinning	NLAA	
Noxious Weed Control	NLAA	
Fire Management	NLAA	
Road Management	NLAA	
Trails, Recreation and Administrative Site Operation and Maintenance	NLAA	
Travel Plan	NLAA	
Livestock Grazing	NLAA	
Power & Telephone Line Easements	NLAA	
Big Creek Lodge	NLAA	

¹ NLAA means the Federal action is not likely to adversely affect the listed species.

² May... and Will not... means the federal action may or will not (respectively) make irreversible or irretrievable commitments of resources or foreclose on the development of any reasonable and prudent alternatives should the action be carried out before the completion of consultation.

A. RATIONALE

1. MISCELLANEOUS FOREST PRODUCTS

The considered action is **not likely to adversely affect** lynx. These activities are expected to yield negligible effects to lynx or their habitat because required mitigation measures meet direction in the LCAS for protection of lynx. For a complete discussion see effects analysis above.

2. MISTLETOE CONTROL AND PRE-COMMERCIAL THINNING

The considered action is **not likely to adversely affect** lynx. These activities are expected to yield negligible effects to lynx or their habitat because required mitigation measures meet direction in the LCAS for protection of lynx and maintain suitable amounts of habitat for lynx prey. For a complete discussion see effects analysis above.

3. FIRE MANAGEMENT ACTIVITIES

The considered action is **not likely to adversely affect** lynx. The federal action discussion provides direction that address potential effects. In addition, direction to see that fire personnel are briefed and familiar with fire management guidelines in this BA, and oversight and continued education/briefing of fire personnel on fires by resource advisors will be implemented. This action is expected to have negligible effects due to implementation of mitigation measures and guidelines, continued education of fire personnel, and use of wildlife biologists as resource advisors. For a complete discussion see effects analysis above.

4. NOXIOUS WEED MANAGEMENT

The considered action is **not likely to adversely affect** lynx. Mitigation measures are expected to minimize effects, including potential sub-lethal effects, to negligible levels. For a complete discussion see effects analysis above.

5. ROAD MANAGEMENT

The considered action is **not likely to adversely affect** lynx. Mitigations described in the Federal action (e.g., minimize roadside brushing in order to provide snowshoe hare habitat) will insure that any temporary degrading effects are negligible. For a complete discussion see effects analysis above.

6. TRAILS, RECREATION, AND ADMINISTRATIVE SITE OPERATION AND MAINTENANCE

The considered action is **not likely to adversely affect** lynx. Mitigations described in the Federal action will insure that any temporary degrading effects are negligible. For a complete discussion see effects analysis above.

7. TRAVEL PLAN

The considered action is **not likely to adversely affect** lynx. The considered action is **not likely to adversely affect** lynx in part because only very few roads occur in lynx habitat in the watersheds. The Travel Plan addresses habitat connectivity within and between lynx habitat areas. The Travel Plan in snow-free periods will have a limited effect on lynx habitat connectivity and lynx refugia. For a complete discussion see effects analysis above.

8. LIVESTOCK GRAZING ALLOTMENTS

The considered action is **not likely to adversely affect** lynx. Negligible effect is expected due to mitigation measures that include the delay of livestock use in post fire and post harvest created openings in lynx habitat until successful regeneration of the shrub and tree components occurs. Within lynx habitat, manage livestock grazing in riparian areas to maintain and achieve mid seral or higher condition. For a complete discussion see effects analysis above.

9. POWER AND TELEPHONE LINE EASEMENTS ON FEDERAL LAND

The considered action is **not likely to adversely affect** lynx. Negligible effects are expected because falling trees and brushing powerline corridors will yield little ground disturbance at existing disturbed sites. For a complete discussion see effects analysis above.

10. BIG CREEK LODGE

The considered action is **not likely to adversely affect** lynx. Negligible effects are expected because no additional snow compacting activities are involved. Most if not all human activity occurs during the daylight, so there is temporal segregation of these activities and most lynx activity. For a complete discussion see effects analysis above.

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