Wildlife Existing Conditions and Environmental Consequences

Introduction

The Clearwater National Forest (CNF) provides habitat for 350 species of wildlife (Clearwater Forest Plan, FEIS p. III-20), many of which occur on the Lochsa Ranger District and within the North Lochsa Face project area. The presence or absence of these various wildlife species depends on the amount, distribution and quality of each animal's preferred habitat. In addition, to habitat, some of these animals are affected by hunting or trapping. This analysis focuses on describing the existing condition of specific wildlife species and the direct, indirect and cumulative effects of the various alternatives.

Analysis Methods

Wildlife species selected for detailed analysis are: management indicator species, threatened, endangered, and proposed species and sensitive species. The "NLF SEIS – MIS & TES Wildlife and Plants Resources Status Report" (included in the North Lochsa Face SEIS Project File) provides more detail regarding the analysis process and findings (see project file). The following analysis is based on detailed information in the project file, including queries, summaries, data analysis, references and consultation with other agencies. Table 3-30 displays the organization of the wildlife analysis.

Table 3-30: Wildlife Analysis Sections and Species Discussed

Wildlife Analysis Sections	Species
Management Indicator Species (MIS)	Elk Moose White-tailed deer Pileated woodpecker Goshawk (covered under sensitive species) Pine marten Belted king fisher
Threatened, Endangered or Proposed Species	Gray wolf (endangered) Grizzly bear (threatened) Bald eagle (threatened) Lynx (threatened)
Sensitive Species	Black-backed woodpecker Coeur d'Alene Salamander Fisher Flammulated Owl Northern Goshawk Harlequin Duck Northern Leopard Frog Townsend's Big-eared Bat Western Toad Wolverine

Management Indicator Species

Regulatory Framework and Other Direction: The Clearwater Forest Plan (Forest Plan, p. II-24, and Forest Plan FEIS, p. III-21) designated management Indicator Species (MIS). Each MIS species represents a group of species that share common habitat components required for sustained growth and successful reproduction. The following analysis evaluates the effects of the alternatives on MIS species.

Elk

There are two main habitat components for elk, elk summer range and elk winter range. Within the NLF approximately 70 percent is classified as summer range and 28 percent as winter range. This analysis evaluates each critical habitat component and the effects of the alternatives on each component.

Elk Summer Range: Existing Conditions

Forest Plan Direction: The CNF Forest Plan direction is to "Provide the proper mix of hiding and thermal cover, forage, and protection from harassment during critical periods on big-game summer range (primarily elk), in accordance with criteria contained in the "Guidelines for Evaluating and Managing Summer Elk Habitat in Northern Idaho" (Forest Plan, p II-24). Three primary management areas are located in elk summer range. See Table 3-31 for description.

Table 3-31: Management Area Direction for Elk Summer Range

Management Area	Forest Plan Direction
C6	Goal: rehabilitate big-game habitat for cover and forage as needed to provide optimum habitat conditions (Forest Plan, p. III-50). Manage elk habitat potential at 100 percent (Forest Plan Record of Decision, p. 30).
C8S	Goal: Manage these areas to maintain high quality wildlife and fishery objectives while producing timber from productive lands (Forest Plan, p. III-53). Manage elk habitat potential at 75 percent (Forest Plan Record of Decision, p. 30).
E1	Goal: provide optimum, sustained production of wood products. Manage viable elk populations within areas of historic elk use based on physiological and ecological needs (Forest Plan, p III-57). Manage elk habitat potential at 25 percent (Forest Plan Record of Decision, p. 30).

Analysis Process: The analysis for elk summer range focuses on vegetative conditions and habitat security (habitat effectiveness). The analysis area is the NLF area because it is large enough to contain the summer and winter components for a large number of elk, the Clearwater Forest Plan directs that elk analysis be assessed per established methods (Servheen, 1997) and the Clearwater Forest Plan has established standards, by management area for elk summer habitat. Vegetative conditions are evaluated over the entire NLF area. Habitat effectiveness or security is evaluated by looking at smaller areas of land, so that adequate security is provided throughout the entire NLF area.

Existing Vegetative Condition: Approximately 70 percent of the 128,000 acre NLF is considered elk summer range. In the NLF, the best elk summer range (Servheen, 1997) typically occurs on gentle terrain above 4000 feet elevation and is located on old surfaces (80's landtype associations (LTAs)). Features include gentle terrain, abundant water and cooler daytime temperatures. Even on these LTAs, elk use is not distributed uniformly. Forage availability and seclusion are other variables that are critical to habitat selection.

Essentially all LTAs in the NLF support some level of summer elk use. However, the areas of preferred use are more associated with micro-site conditions (benches or small flats in proximity to water, forage and cover) than macro-site conditions (i.e., features typical of the LTA). The greatest concentrations of summer elk use occur where an area contains abundant forage, easy access to water, and adjacent cover and secluded from human disturbance.

Habitat Effectiveness: A mathematical model, developed for northern Idaho elk habitat is used to predict how well elk can use available summer habitat. The model uses standard elements to estimate impacts to elk summer habitat. These elements include: 1) affects of roading; 2) adequacy of cover; and 3) impacts from other human disturbances. Elk summer habitat effectiveness is estimated using the *Interagency Guidelines (i.e., "Interagency Guidelines") for Evaluating and Managing Elk Habitats and Populations in central Idaho* (Servheen, et. al., 1997).

Elk summer range within the NLF is divided into 19 elk analysis areas (EAAs). These range in area from 3,300 to 7,400 acres. EAAs were developed per guidance in the *Interagency Guidelines* and remain constant in area and location. EAAs typically range in area between 3,800 and 5,000 acres (approximating the area of an elk summer home range). Variations in EAAs larger or smaller than this range were the result of site-specific mapping considerations to accommodate terrain and habitat features. Elk winter range is not included within the summer range EAAs.

Table 3-32 displays the EAAs, and their associated acreages and the management area within the EAA. The current habitat effectiveness is based on the model described above.

The analysis has been updated from what was presented in the Final EIS. Updates include:

- Recalculating estimates based on improved/refined use of the available geographic information system technology and CNF forest stand data base;
- Refined estimates of treatment areas acreages;
- Updated road access prescriptions, as described in the *Recreation and Access Management Record of Decision (April 2000)*; and 4) Applying prescriptive opening/forage area determinations based on current stand data.

Table 3-32: Elk Summer Habitat Effectiveness by Elk Analysis Area, NLF

Elk Analysis Area	Area (acres)	Management Area	Elk Analysis Area Objective (%)	Current Habitat Effectiveness (%)
Alder Creek	4600	C6	100*	80
Bimerick Meadows	5600	C8S	75	80
Boundary Peak	4100	C8S	75	96
Bowl Butte	5900	C6	100*	100
Bridge Creek**	2000	E1	25	55
Canyon East***	3900	E1	25	39
Canyon West***	5200	E1	25	49
Ceanothus Creek	6000	C6	100*	85
Deadman East	5800	C8S	75	75
Deadman West	3300	E1	25	52
Fish Butte	7400	C8S	75	90
Frenchman Creek	3800	C8S	75	80
Gass Creek	6700	C6	100*	85
Glade Creek	3200	E1	25	45
Obia Creek	6100	C6	100*	85
Upper Fish Creek	4400	C8S	75	80
Walde Creek***	3600	E1	25	43
WF Pete King	3600	E1	25	43
Willow Ridge	5600	C6	100*	100

*The CNF Plan directs that elk summer habitat potential in Hungery Creek and middle Fish Creek (CNF MA C6) be managed at 100 percent. Although these areas do not have a habitat effectiveness of 100 percent, they are still providing 100 percent habitat potential as required by the Forest Plan. See the discussion following Table 3-33 for further detail.
** Only a portion of the Bridge Creek EAA is within the NLF. This EAA is too small to effectively use the 'Interagency Guidelines'. The values in this table are presented for comparison only.
***Several EAAs are affected to some degree (generally minor) by unauthorized cattle use. This occurs on an intermittent basis, usually for only short periods and not every year. The analysis recognizes and accounted for some livestock effects where use has been reported. Also, two EAAs are partly or wholly within an active grazing allotment.

Table 3-33 depicts estimated elk habitat effectiveness by Forest Plan management area (MA). These estimates were derived using the weighted averages for the combined EAAs within a given MA (refer to Table 3-31 for EAAs that would be analyzed together).

Table 3-33: Estimated Current Elk Summer Habitat Effectiveness by Forest Plan Management Area

Forest Plan Management Area (MA)	Area (mi2)	Elk Habitat Effectiveness Standard (%)	Elk Habitat Effectiveness Current Condition (%)
E1	39	25	46
C8S	49	75	84
C6	55	100	88*

*Meets Forest Plan requirement (see below for further clarification)

The CFP Record of Decision (p. 30), September 1987, describes the habitat requirements for management area C6. The plan states "Potential elk habitat refers to habitat quality, 100 percent potential means that a site has the optimum amount of habitat factors,

including security, to permit elk use at the maximum potential for the site." As depicted in Table 3-33, elk habitat effectiveness (as estimated using the 'Interagency Guidelines) is below 100 percent in MA C6. The model did not calculate habitat effectiveness at 100 percent because of roads on the perimeter of the EAAs. These roads include the Lolo Motorway Road 500, Middle Butte Road 483, and Boundary Peak Road 485. The roads were constructed prior to completion of the Clearwater Forest Plan. There are no roads or motorized system trails (and few Forest Service system trails) within the interior of these EAAs.

As described earlier in this section, preferred elk summer habitat is associated benches or small flats in proximity to water, forage and cover. The greatest concentrations of summer elk use, therefore, occur where gentle terrain, abundant forage (near to cover and easy access to water) and seclusion from human disturbance combine to optimize habitat suitability. TheLolo Motorway, Middle Butte and Boundary Peak roads are located on relatively cold and dry lands within elk summer range. Though elk use cold, dry lands they do not provide the optimum elk summer habitat features characteristic of preferred habitats.

The 'Interagency Guidelines' model automatically reduces habitat effectiveness due to roads, even on the perimeter of the EAAs (such as the above named roads), regardless of elk summer habitat suitability or preference. Elk security area in the interior of these EAAs is essentially unaffected by motorized activity on these roads (as noted in Table 3-35 by the relatively high percentages (73 percent)). These EAAs otherwise provide excellent cover and isolation (security) from human disturbance to permit elk use at the maximum potential for the site. The intent of the CNF to achieve full (i.e., 100 percent) habitat potential, therefore, is achieved. Table 3-34 depicts the percent of each that currently qualifies as elk security habitat.

Table 3-34: Elk Security Area (%) by Management Area

Management Area	Elk Habitat Effectiveness Objective	Elk Analysis Areas	Total Area (ac)	Security Area (ac)	Security Area (%)
E1	25	Bridge Creek, Canyon East, Canyon West, Deadman West, Glade Creek, Walde Creek, West Fork Pete King	25,000	9,800	39
C8S	75	Bimerick Meadows, Boundary Peak, Deadman East, Fish Butte, Frenchman Creek, Upper Fish Creek	31,100	19,200	62
C6	100	Alder Creek, Bowl Butte, Ceanothus Creek, Gass Creek, Obia Creek, Willow Ridge	35,000	25,500	73
Winter Range	N/A		35,900	24,100	67

Elk Summer Range: Environmental Consequences

The following analysis focusing on the effects of the alternatives on elk summer range habitat effectiveness and a general discussion of the effects to vegetative conditions. Calculations to estimate elk summer habitat effectiveness were done for all NLF EAAs by alternative. Table 3-35 depicts the elk summer habitat effectiveness by alternative for the 19 EAAs within the NLF.

Table 3-35: Estimated Elk Habitat Effectiveness (%) by EAA, by Alternative NLF SEIS

Elk Analysis Area (EAA)	Desired Levels	Alt 1	Alt 2	Alt 3	Alt 3A	Alt 4/4a	Alt 5	Alt 6
Alder Creek	100	80	80	80	80	80	80	80
Bimerick Mdws	75	80	71	71	71	80	80	71
Boundary Peak	75	96	96	96	96	96	96	96
Bowl Butte	100	100	100	100	100	100	100	100
Bridge Creek	25	55	51	51	51	51	51	51
Canyon East	25	39	39	39	39	39	39	39
Canyon West	25	49	49	49	49	49	49	49
Ceanothus Creek	100	85	85	85	85	85	85	85
Deadman East	75	75	75	75	75	75	75	75
Deadman West	25	52	50	50	50	50	50	50
Fish Butte	75	90	90	90	90	90	90	90
Frenchman Creek	75	80	70	70	70	70	70	70
Gass Creek	100	80	75	75	80	80	75	75
Glade Creek	25	45	43	43	43	43	43	45
Obia Creek	100	85	80	80	85	85	80	80
Upper Fish Creek	75	80	70	70	70	70	70	70
Walde Creek	25	43	39	39	39	39	39	41
W. F. Pete King	25	43	43	43	43	43	43	43
Willow Ridge	100	100	100	100	100	100	100	100

Table 3-36 depicts changes in elk habitat effectiveness by management area, by alternative. The estimates in Table 3-36 were derived from weighted averages, which quantified the summer habitat objective, by EAA, compared to the habitat effectiveness standards.

Table 3-36: Elk Summer Habitat Effectiveness (%) by Alternative

Management Area (MA)	Forest Plan Standard	Alt 1	Alt 2	Alt 3	Alt 3a	Alt 4/4a	Alt 5	Alt 6
E1	25	46	44	44	44	44	44	45
C8S	75	84	79	79	79	80	80	81
C6	100	88	87	87	87	87	87	87

1/ Weighted average was calculated by: 1) Multiplying elk habitat effectiveness x EAA area (to estimate acres of full habitat effectiveness were included in each EAA); 2) Totaling the results of these calculations for all EAAs within the given management area; and 3) Dividing by the total area of the EAAs within the given management area to arrive at the mean habitat effectiveness value (%).

Direct and Indirect Effects

Alternative 1: achieves the highest elk habitat effectiveness. No management actions would occur along roads; hiding cover would not be decreased and elk summer habitat effectiveness would be unchanged from current conditions. Unneeded forest roads would be unaffected, with some possibly providing motorized access into otherwise suitable habitat.

In the short-term Alternative 1 would neither enhance nor decrease elk summer habitat productivity. The best summer habitats (available lush forage near water and on gentle terrain, largely occurring on old surfaces dominated by grand fir habitats) would be unaffected. Here, quality forage is available in openings occurring alder glades, meadows, riparian areas and grand fir mosaics. In the long-term, however, summer habitats that provide forage only during the early stages of succession (old surfaces dominated by cedar habitats) would also decline with time, as trees crowd out grasses, forbs and certain palatable shrubs. Spring habitats, characterized by certain lush grasses and forbs growing in open sunlight, would also decline in the long term. This would reduce elk calving habitats as green forages preferred by lactating cows declines.

Larger patches of older forest would be expected to develop, increasing hiding cover at the expense of declining forage, particularly on spring and fall habitats. Increased risk of large fires (due to increasing development of larger patches of older forest) could increase the occurrence of large patches of forage with little cover. Excesses of hiding cover or forage areas are undesirable conditions for sustained availability of quality elk spring, summer and habitats.

Precluding vegetative disturbance in habitats that developed with fire would ultimately decrease elk summer and spring/fall habitat quality, productivity and populations. Elk populations would be expected to undergo extreme population fluctuations, resulting in cycles of “boom and bust”.

Alternatives 2, 3, 3a: reduce elk summer habitat effectiveness by 1 to 5 percent for each of the three MAs. This is due to planned actions converting ‘cover’ along existing or planned roads to ‘opening’. Treated areas would be considered ‘openings’ until young trees reforesting the sites grow sufficiently tall and dense to restore elk hiding cover. In NLF habitats, this period is typically 15 to 25 years following disturbance.

Estimated declines in elk summer habitat effectiveness occur in Upper Fish Creek and Frenchman Creek EAAs (10%); Bimerick Meadows (9%); Gass Creek and Obia Creek (5%); Bridge Creek, Deadman West, Glade Creek, Walde Creek and West Fork Pete King EAAs (2 to 4%).

Desired habitat effectiveness levels are met in all EAAs except Bimerick, Frenchman Creek and Upper Fish. Habitat effectiveness in these areas are lower than desired,

although the habitat effectiveness for MA C8S is within Forest Plan standard across the entire NLF area. The declines are primarily the result of decreased cover along sections of some existing roads. Also, planned vegetative treatments are relatively large (compared to historic Forest management practices), causing some deduction in habitat quality (per the *"Interagency [Elk Summer Range] Guidelines"*) due a perception that large openings would be created. The applications of silvicultural and planned fire prescriptions, however, are designed to retain standing dead and live trees within treatment units. These practices, coupled with stream buffering, are expected to actually improve distribution of quality forage, intermixed among larger patches of suitable cover within adjoining treatment areas. These prescriptions would result in improved elk summer habitat, including some spring/fall habitats important for calving or foraging to store fat reserves for approaching winter.

Habitat effectiveness in Gass and Obia EAAs would be reduced 5 percent from existing levels. Mixed severity burns and underburns that are prescribed within these EAAs cause this reduction. The prescribed burning would improve vegetative conditions for elk by improving the distribution of quality forage and cover. The model assumes all acres are treated equally and does not account for the variability that results from these prescriptions. The management objective in Gass and Obia Creek is to maintain habitat at 100 percent of potential. Alternatives 2, 3, and 3a achieve this objective because no new roads are constructed, the interior of these EAAs do not contain roads and are considered secure habitat and habitat conditions are improved to provide for optimum habitat conditions.

Alternative 4/4a: reduces elk summer habitat effectiveness by 1 to 4 percent for each of the three MAs. This is due to planned actions converting 'cover' along existing or planned roads to 'opening'.

Estimated declines in elk summer habitat effectiveness occur in Upper Fish Creek and Frenchman Creek EAAs (10%); Bridge Creek, Deadman West, Glade Creek, Walde Creek and West Fork Pete King EAAs (2-4%).

Desired habitat effectiveness levels are met in all EAAs except Frenchman Creek and Upper Fish. Habitat effectiveness in these areas are lower than desired, although the habitat effectiveness for MA C8S is within Forest Plan standard across the entire NLF area. Vegetative conditions in Frenchman Creek and Upper Fish however would be improved as described under Alternatives 2, 3 and 3a.

Alternative 4 does not prescribe any vegetative management (mixed severity burns or underburns) in Obia or Gass Creek EAAs. As in Alternative 1, in the short term this would neither enhance nor decrease elk summer habitat productivity. In the long-term precluding vegetative disturbance in habitats that developed with fire would ultimately decrease elk summer and spring/fall habitat quality, productivity and populations in this area.

Alternative 5: reduces elk summer habitat effectiveness by 1 to 4 percent for each of the three MAs. This is due to planned actions converting 'cover' along existing or planned roads to 'opening'.

Estimated declines in elk summer habitat effectiveness occur in Upper Fish Creek and Frenchman Creek EAAs (10%); Bimerick Meadows (9%); Gass Creek and Obia Creek (5%); Bridge Creek, Deadman West, Glade Creek, Walde Creek and West Fork Pete King EAAs (2 to 4%).

Desired habitat effectiveness levels are met in all EAAs except Frenchman Creek and Upper Fish. Habitat effectiveness in these areas are lower than desired, although the habitat effectiveness for MA C6 is within Forest Plan standard across the entire NLF area. Vegetative conditions in Frenchman Creek and Upper Fish however would be improved as described under Alternatives 2, 3 and 3a.

Habitat effectiveness in Gass and Obia EAAs would be reduced 5 percent from existing levels. Mixed severity burns and underburns that are prescribed within these EAAs cause this reduction. As noted in Alternatives 2, 3 and 3a prescribed burning would result in long-term improvement of vegetative conditions for elk in these areas.

Alternative 6: reduces elk summer habitat effectiveness by 1 to 3 percent for each of the three MAs. This is due to planned actions converting 'cover' along existing or planned roads to 'opening'.

Desired habitat effectiveness levels are met in all EAAs except Bimerick, Frenchman Creek and Upper Fish. Habitat effectiveness in these areas are lower than desired, although the habitat effectiveness for MA C8S is within Forest Plan standard across the entire NLF area. Vegetative conditions in Frenchman Creek and Upper Fish however would be improved as described under Alternatives 2, 3 and 3a.

Habitat effectiveness in Gass and Obia EAAs would be reduced 5 percent from existing levels. Mixed severity burns and underburns that are prescribed within these EAAs cause this reduction. As noted in Alternatives 2, 3 and 3a prescribed burning would result in long-term improvement of vegetative conditions for elk in these areas.

Summary: Because of numerous variables influencing elk summer habitat and populations, NLF management actions in the short-term, are not expected to substantially effect trends in elk summer habitat quality, habitat effectiveness or populations. In the long-term, however, forest disturbance (Alternatives 2 through 6) is needed to maintain or enhance long-term elk summer habitat and populations.

All alternatives maintain elk security area as the result of implementing the management actions approved in the *North Lochsa Face Recreation and Access Management Record of Decision (April 2000)*. Motorized access impacts on elk summer range would be maintained via access restrictions and road obliteration. Access restrictions and policies are expected to achieve the predicted elk summer habitat effectiveness estimates, as depicted with the action alternatives. Alternatives 2 through 6 would obliterate or place unneeded roads into long-term maintenance, thereby reducing human access into

otherwise suitable habitat.

Cumulative Effects: The geographic boundary for assessing cumulative effects of each alternative on elk summer range is the NLF study area. The cumulative effects boundary is based on: 1) habitat effectiveness standards have been established in the CFP for elk summer range by MA; 2) NLF is sufficiently large to meet the habitat and home range needs for the elk population residing in the analysis area; and 3) Achieving elk habitat effectiveness standards for specific NLF MAs implies the cumulative effects of planned actions are meeting CFP standards for elk summer habitat. Projects outside, but in proximity of the NLF, must also meet standards by EAA and MA. Including elk habitat effectiveness determinations from EAAs outside this analysis area are irrelevant to assessing the effects of planned actions on NLF elk summer habitat. Present and foreseeable future management actions and natural events within the NLF analysis area include: 1) District timber salvage program; 2) Changes in big hunting regulations; 3) Lewis and Clark Bi-centennial celebration; 4) Re-introduction of wolf; 5) Elk herd declines as the result of severe winters; and 6) Large wildfires and wildfire suppression. The time frame for the cumulative effects assessment is 2012 (last planned timber harvest plus two years to complete the burning of the logging slash).

With respect to cumulative effects, there are no known or suspected substantive differences between alternatives. All alternatives meet the CFP objectives for elk summer habitat for each of the three MAs (E1, C8S and C6). With all alternatives, the District timber salvage harvest program is not expected to significantly affect large expanses of hiding cover, forage area or restricted motorized access during hunting season.

The Lewis and Clark Bi-centennial celebration is expected to peak in 2005 and 2006. Steep, remote terrain and dense vegetation are expected to largely confine the human impacts of this celebration to the major ridges traversed by the Lolo Motorway (Road 500). Elk typically do not select the dry, relatively sterile forests along this route as preferred habitat. Elk summer habitat effectiveness, as interpreted using the "Interagency Guidelines", would not decline from current estimates.

Wolf populations in or near the NLF and are expected to increase. Their impact on elk populations is largely speculative. Though elk predation by wolves may increase, the interaction of wolves on other predators (and possibly declines in elk predation by these species) is difficult to predict, in terms of having a greater/lesser/neutral effect on elk population trends.

Predation, hunting regulations and severe winters are beyond the control of the Forest Service. Wildfires in the developed (roaded) portions of the NLF are unlikely in the short term due to fire suppression effectiveness. Large wildfires in the undeveloped portions of the NLF (i.e., the upper Fish and Hungery Creek watersheds) would be beneficial in providing additional spring, summer and fall forage.

Forest Plan Consistency: All action alternatives are consistent with the Clearwater Forest Plan. 100 percent habitat potential is maintained in MA C6 even though habitat effectiveness is below 100 percent. As noted earlier, elk security area in the interiors of

the Alder, Ceanothus Creek, Gass Creek and Obia Creek EAAs is essentially unaffected by motorized activity on roads at their margins. These EAAs provide excellent cover and security from human disturbance to permit elk use at the "…maximum potential for the site".

Calculations of EHE for MA C6, per the 'Interagency Guidelines", indicates 1 percent decline (for 88 percent down to 87 percent). As noted, this is below the below the 100 percent EHE for MAC6. As explained earlier, the reason for the EHE being below 100 percent is the presence of forest roads (such as the Lolo Motorway and Boundary Peak) that occur on the perimeter of MA C6. These roads typically are located on ridges that are relatively low quality elk summer habitat (due to water not being close proximity and forage availability dependent upon fire disturbances). These roads also have little affect on elk security (as noted by 60 percent or more of the individual EAAs providing security habitat). The best elk summer habitat (water and forage available throughout the summer) in the individual EAAs in MAC6 is unaffected by roads. In addition the interior of these EAAs do not contain roads and are considered secure habitat and habitat conditions are improved to provide for optimum habitat conditions.

Elk Winter Range: Existing Conditions

Forest Plan Direction: The CNF Forest Plan directs projects to "Rehabilitate key big-game winter range to meet elk population goals" (Forest Plan p II-23). Two primary management areas are located in elk winter range. See Table 3-37 for descriptions.

Table 3-37: Management Area Direction for Elk Winter Range

Management Area	Forest Plan Direction
C3	Goal: Provide winter forage and thermal cover for big game (Forest Plan, p. III-43).
C4	Goal: Manage big-game winter range to provide sufficient forage and cover for existing and projected big-game populations and achieve timber outputs (Forest Plan, p. III-47).

Approximately 15 to 25 percent of the elk winter range landscape should be in shrub-dominated stages. This is based on historic and desired age class distribution for the breaklands (see vegetation section).

Analysis Process: The analysis for elk winter range focuses on availability of forage because it is the most limiting factor for elk in the analysis area. The CNF Forest Plan Record of Decision, p 31 recognized this condition "winter range capacities have been decreasing over the last 20-30 years as the Forest has grown older and the brush fields, which resulted from the massive fires in the early part of the 20th century, have begun to convert to trees. Our analysis has indicated that winter range is the major limiting factor on elk in the Clearwater".

The analysis area is the NLF area because it is large enough to contain winter habitat for a large number of elk and the NLF essentially comprises the "lower Lochsa drainage", as described by Hash (1972).. Vegetative conditions are evaluated over the entire NLF area and by major watershed.

Existing Condition: Elk winter habitat conditions are based on descriptions provided by Leege and Hickey (1977). The NLF study area includes approximately 36,000 acres (28

percent of the NLF) of elk winter range. The winter range is characterized by 50 to 70 percent slopes from 1500 to 4200 feet in elevation, largely on southerly exposures. These conditions occur in the NLF on LTAs 21, 23, 61 and 63. Approximately 19,000 acres of winter range lay between Big Hill and the mainstem of Deadman Creek; another 11,000 acres on the breakland face drainages; and 6000 acres in the Fish Creek watershed.

Most high elk use on winter range occurs on south slopes and gentle, major ridges. Unless browse forage quality is high and easily available, elk use on north slopes is typically less than other terrain within the winter range elevation. Although some of browse forage on winter range in the NLF can be attributed to timber harvest, most areas of shrubs are the result of large wildfires in the early 1/3 of the 20th century (Orme and Leege, 1975). Ecologically, the preferred browse species (redstem ceanothus, mountain maple, service berry and scouler willow) are adapted to propagate following relatively frequent, dry-season fire.

Beginning in the 1950's, the Idaho Department of Fish and Game and the Forest Service jointly conducted winter range improvement projects to promote winter browse forage production. Early efforts included the application of herbicides to crown kill shrubs and promote sprouting. This practice was soon discontinued because is determined the herbicides were lethal to preferred browse species. In the mid-1960's, prescribed fire was used to improve browse production by killing the above ground portions of the shrubs to promote sprouting from the root crown.

Approximately 4,800 to 5,300 acres of the NLF were treated in this manner (4,000 to 4,500 using prescribed fire; 500 to 600 acres were timber harvested to improve winter range; and approximately 400 acres burned by wildfire). Observations of field biologist determined that the quality and quantity of browse production on elk winter range, following logging and/or prescribed burning, has not developed where or when spring burning has occurred. The result is that limited browse production, complicated by remaining logging slash, are not attracting much winter elk use.

Currently, approximately 3,360 acres (9 percent of the winter range in the NLF) of browse forage are younger than 20 years. Available winter browse less than 20 years since disturbance is declining each year due to the lack of fire propagating new browse production. Winter forage within the NLF is distributed mostly within the Pete King Creek watershed the southwest portion of the analysis area. This is attributed to more active prescribed fire and timber harvest to benefit elk winter range than elsewhere in the NLF.

Forage production in Fish & Hungery Creek is particularly short. Winter conditions are generally harsher, soil productivity (and therefore, forage) lower, and available browse plants older (when compared to the winter habitat conditions in Pete King and Canyon Creek).

Table 3-38: Available Winter Forage by Major Watershed

Major Watersheds	Winter Range in Watershed (acres)	Available Winter Forage in Watershed (acres)	Percent of Winter Range in Available Forage (%)
Pete King & Rye Patch	9,800	1,250	13
Canyon, Deadman, Apgar, Glade & Bimerick	9,200	790	9
Fish & Hungery	5,800	650	11
Face	11,100	670	6
Totals	**35,900**	**3,360**	**39**

Elk Winter Range: Environmental Consequences

Analysis Process: Vegetative management practices were reviewed to determine their effects on winter range forage. This information was summarized for each alternative and compared to the desired conditions.

Regeneration harvest and mixed severity burns were considered to improve winter browse. These practices involve the use of more intense, uniformly burned areas than the practices associated with underburning. These practices, therefore, more reliably improve browse forage production, including quality, quantity and distribution over the treated area. As a result, the browse plants germinating or sprouting from regeneration and mixed severity burns would be more productive and long lasting.

Browse produced by 'underburning' is considered beneficial but inconsequential in increasing winter forage. Underburning typically does not produce the quality, quantity or distribution of preferred browse species. Also, shrubs germinated or sprouted by this practice have to compete with much larger conifers, occupying much of the patch, for nutrients, moisture and sunlight. Shrubs in this condition neither produce the quality nor quantity of similar sites treated by regeneration harvest and mixed severity burns. This practice, though relatively inconsequential in producing browse (compared to mixed severity burns) would, however, result in some increased browse production.

Planned timber harvest and prescribed fire treatments on elk winter range would occur on the more productive lands within the elk winter range. Prescribed fire prescriptions would favor, though not be restricted to, dry-season fire to favor winter browse production. These practices would significantly improve the availability winter browse, interspersed among patches of suitable hiding and thermal cover. Multiple land management objectives would be accomplished simultaneously on elk winter range.

The alternatives would implement a staged prescribed burn sequence. First areas that have too much biomass to safely meet resource objectives would be burned in the spring to reduce biomass to levels in which fire can be controlled more safely. These areas would be reburned at a later date during the dry season to meet the ultimate resource objective of reintroducing fire on the landscape. This staged burning would not produce

as much forage as a one-entry burn, but are necessary to not have adverse effects on other resources. Once the biomass has been reduced, and fire reintroduced it is more likely that future burning can meet resource objectives.

Desired vegetation conditions on elk winter range indicate that 15 to 25 percent of the landscape should be in shrub dominated stages. Table 3-39 depicts the estimated amount of forage available by alternative. The table also summarizes the total acres of winter range improved by regeneration and mixed severity burns. Table 3-40 depicts the estimated amount of winter range forage available by major watershed, compared to the desired conditions.

Table 3-39: Available Elk Winter Forage Less Than 20 Years Old

Major Watershed	Alt 1 (ac)	Alt 2 (ac)	Alt 3 (ac)	Alt 3a (ac)	Alt 4/4a (ac)	Alt 5 (ac)	Alt 6 (ac)
Pete King & Rye Patch	1,250	2,170	2,090	2,170	2,080	2,080	2,170
Canyon, Deadman, Apgar, Glade & Bimerick	790	1,590	1,520	1,580	1,250	1,250	1,400
Fish & Hungery	650	730	730	650	650	730	730
Face	670	2220	2070	2070	670	1540	2070
Totals.... Available Forage (ac)	**3,360**	**6,710**	**6,410**	**6,470**	**4,640**	**5,600**	**6,370**
Area treated (ac)	**0**	**3,350**	**3,050**	**3,110**	**1,280**	**2,240**	**3,010**
Winter Forage (%)	**9**	**19**	**18**	**18**	**13**	**16**	**18**

Table 3-40: Available Elk Winter Forage Versus Desired Conditions

Major Watersheds	Forage Acreage to Achieve Desired Condition (15-25%) (ac)	Alt 1 (ac)	Alt 2 (ac)	Alt 3 (ac)	Alt3a (ac)	Alt 4/4a (ac)	Alt 5 (ac)	Alt 6 (ac)
Pete King & Rye Patch	1500 - 2500	1,250	2,170	2,090	2,170	2,080	2,080	2,170
Canyon, Deadman, Apgar, Glade & Bimerick	1400 - 2300	790	1,590	1,520	1,580	1,250	1,250	1,400
Fish & Hungery	900 - 1500	650	730	730	650	650	730	730
Face	1700 - 2800	670	2,220	2,070	2,070	670	1,540	2,070
Entire Winter Range	**5400 - 9000**	**3,360**	**6,710**	**6,410**	**6,470**	**4,640**	**5,600**	**6,370**

Direct and Indirect Effects

Alternative 1: would not implement any projects on elk winter range. This alternative would not increase browse production into the range (i.e., 15 to 25 percent of the winter

range) of the desired condition. The declining trend in winter forage production would continue unabated, relying only on unplanned, major wildfires to improve elk winter habitat conditions. Unneeded forest roads would be unaffected and would remain as access into otherwise suitable habitat.

Alternative 2: would improve browse production on approximately 3,350 acres of winter range. This alternative would increase browse production into the mid-range (i.e., 19 percent of the winter range) of the desired conditions. The most winter range improvement (approximately 900 and 1500 acres) would occur in the 'Face' and in Pete King; the least in Fish Creek (80 acres). Browse would be still be less than desired levels in Fish Creek and within the desired levels for the remaining areas.

Alternatives 3,3a and 6: would improve browse production on approximately 3,000 to 3,100 acres of winter range. These alternatives would increase browse production into the mid-range (i.e., 18 percent of the winter range). The most winter range improvement (approximately 1750 to 2000 acres) would occur in the 'Face' and in Pete King; the least in Fish Creek. Browse would be still be less than desired levels in Fish Creek and within the desired levels for the remaining areas.

Alternative 4/4a: would improve approximately 1,280 acres of winter range. This alternative would not increase browse production into the range (i.e., 13 percent of the winter range) of the desired condition. The most winter range improvement (approximately 450 and 800 acres) would occur in the 'Face' and in Pete King; none in Fish Creek or the Face watersheds. Browse would be less than desired levels in all areas except for Pete King and Rye Patch Creek.

Alternative 5: would improve approximately 2,260 acres of winter range. This alternative would increase browse production beyond the lower range (i.e., 16 percent of the winter range) of the desired conditions. The most winter range improvement (approximately 750 and 900 acres) would occur in the 'Face' and in Pete King; none in Fish Creek. Browse would be still be less than desired levels in Fish Creek and within the desired levels for the remaining areas.

Summary: Alternatives 2 through 6 would achieve the mid-range for available winter range desired condition in the Pete King & Rye Patch watersheds. Alternatives 2 through 3a would achieve the low-range for available winter range desired condition in the Canyon, Deadman, Apgar, Glade and Bimerick watersheds. None of the alternatives meet the minimum desired conditions in the Fish and Hungery Creek watershed. Alternatives 2 through 3a, 5 and 6 would achieve the mid-range for available winter range desired condition in the 'Face' watersheds. Alternatives 2 through 6 would obliterate or place unneeded roads into long-term maintenance, thereby reducing human access into otherwise suitable habitat.

All alternatives except Alternatives 1 and 4, improve elk range over existing conditions. The trend in winter forage, though substantially boosted by most action alternatives, would continue to decline with advancing plant succession. Alternatives 1 and 4, would likely limit the recovery of elk populations due to the reducing availability of winter

browse occurring faster than additional winter forage created by implementing Alternative 4.

Noxious weeds (particularly spotted knapweed) are expected to increase distribution in association with planned NLF vegetative management practices occurring on winter range. Knapweed is present below and within forest patches that would be treated. This species is spreading into shrubfields and forested patches that have not experienced recent disturbance. Field biologists' observations have not noted reductions in shrub density in the Lochsa River basin due to competition from knapweed. No reduction in browse production or winter range quality is expected, due to knapweed.

Cumulative Effects: The geographic boundary for assessing cumulative effects on elk winter range is the NLF study area. The cumulative effects analysis for elk winter habitat is based on: 1) The desired conditions for the availability of browse forage needed to sustain elk winter range have been documented per the DFCs; 2) The DFCs for winter range are consistent with the disturbance regimes for winter range landtypes; 3) NLF winter range is sufficiently large to meet the winter habitat and home range needs for the elk population residing in the analysis area.

Reasonably foreseeable future vegetation management projects outside, but in proximity of the NLF, are either not on winter range or on winter range and would be complete before activity in NLF is initiated (i.e., East Bridge Timber Sale and prescribed burning). Snowmobile and planned recreation developments are either restricted on winter range or not located on winter range.

With respect to cumulative effects for Alternatives 2, 3, 3a, 5 and 6, there are no known or suspected substantive differences. Each of these alternatives at least minimally meets the desired conditions for winter forage production. With all alternatives, the District timber salvage harvest program is not expected to improve winter browse production. Predation, hunting regulations and severe winters are beyond the control of the Forest Service. Wildfires in the developed (roaded) portions of the NLF are unlikely due to fire suppression effectiveness.

Large wildfires in the undeveloped portions of the NLF would be beneficial in providing additional winter browse forage. The possibility of large wildfires on winter range by 2012 is not probable (due to fire suppression effectiveness and the limited availability of expanses of large, dead wood necessary to promote large fires). Weather events, such as lightning storms during an extended drought, accompanied by strong winds, could create large wildfires. It is unlikely, however, that sufficient area of winter range would be burned to reverse or stabilize downward trends winter range forage production.

Wolf populations are known to occur in or near the NLF and are expected to increase. Their impact on elk summer habitat and elk populations is largely speculative. Though elk predation by wolves will increase, the interaction of wolves on other predators (and possibly declines in elk predation by these species) is difficult to predict, in terms of having a greater/lesser or neutral effect on elk population trends.

Forest Plan Consistency: All alternatives, except alternative 1 and to some degree Alternative 4/4a are consistent with the Forest Plan. Alternative 2, 3, 3a, 5, and 6 improve forage conditions, at least in the short-term. Periodic disturbances in the future are needed to maintain forage conditions. Alternative 1 and 4/4a would not improve forage conditions that are on a declining trend. This is inconsistent with the Forest Plan goals and objectives for winter range.

Moose: Existing Conditions

Forest Plan Direction: The Clearwater Forest Plan includes a forest-wide goal to provide habitat for viable populations of all indigenous wildlife species (Forest Plan, p. II-2).

Existing Condition: The moose population in the NLF has increased significantly in the last two decades. This is believed largely the result of increased forage resulting from timber harvest following by prescribed fire to treat logging slash. Forest succession in young forest plantations has advanced to a condition where many logged stands have reforested with dense saplings and now contain a significant shrub/browse component. Moose populations in the NLF, based on sightings and habitat use, are believed highest in upper Canyon/Glade Creeks (including Walde Mountain area) and upper Pete King (above Rd 101). Much of this area was extensively roaded and logged over a period of 40 to 50 years. Moose habitat has improved in these areas as the result of significant increases in young forest stands, adjacent to mature forest stands, that provide dense hiding cover, overhead cover and abundant browse. Dense cover and abundant forage, coupled with increase access restrictions, is believed to provide excellent moose habitat throughout the areas managed for timber in the NLF. Additional timber harvest and prescribed fire, coupled with more access restrictions for elk habitat, should benefit moose habitat and moose.

Moose: Environmental Consequences

Moose and moose habitat are not considered significant issues to related to NLF (40 CFR 1501.7(3). Their populations appear to be increasing, habitat quality in NLF is excellent, and planned actions in the NLF would only improve moose habitat. Moose habitat, for these reasons, was not modeled for the NLF analysis.

Direct and Indirect Effects of No Action: There are no direct effects resulting from no action. Indirect effects include advancing forest succession. Habitat conditions would decrease in the long-term as vegetative succession continues and forage decreases.

Direct and Indirect Effects of Action Alternatives: Habitat effects for moose are expected to parallel that of elk summer habitat. Access restrictions and vegetative disturbances that benefit elk would also benefit moose. Retention of mature and old forest conditions would retain multi-storied late mature forest conditions for moose winter range (particularly pacific yew wood habitats) in deep snow areas. Road obliteration would decrease human the risk of human disturbance into otherwise suitable habitat. The

effects of noxious weed expansion, control or eradication are expected to have little to no effect on the habitats of moose.

Cumulative Effects: The geographic boundary for assessing cumulative effects to moose is the NLF study area. The time frame for the cumulative effects assessment is 2012. Present and foreseeable future management actions or natural events within the NLF study area include: 1) Salvage harvest implemented through the Ranger District small timber sale program; 2) Lewis and Clark Bi-centennial celebration; 3) Re-introduction of wolf; 4) Large or severe wildfires; and 5) Advancing forest succession;

Habitat conditions for moose would be improved throughout the NLF. Habitat is most productive when a variety of vegetative conditions, such as those proposed in the NLF, are easily accessed and widely available across the landscape. Salvage harvest would not substantially alter vegetative conditions; therefore it would not contribute to cumulative effects. The Lewis and Clark Bi-centennial celebration is not expected to affect habitat or populations of moose. Improved habitat conditions would favor population thereby improving the prey base for wolf. Precluding vegetative disturbance in habitats that developed with fire would ultimately decrease moose habitat quality, productivity and populations.

Summary: NLF management actions in the short-term are not expected to substantially effect trends in habitat quality or populations. In the long-term, however, forest disturbance is needed to maintain or enhance long-term populations and habitat productivity.

Forest Plan Consistency: All alternatives are consistent with Forest Plan direction for moose.

White-tailed Deer: Existing Conditions

Forest Plan Direction: The Clearwater Forest Plan includes a forest-wide goal to provide habitat for viable populations of all indigenous wildlife species (Forest Plan, p. II-2).

General Description: White-tailed deer are widely distributed in northern Idaho. Throughout most of the year they subsist primarily on browse, constituting more than 60 percent of their summer diet and nearly a 100 percent through the fall and winter (Jageman, 1984). Southwest slopes just above the river bottom are preferred winter habitats. During the coldest months, white-tailed deer typically select habitats for their cover value, eating whatever is available. Under milder conditions, forage areas are probably more important than cover in determining habitat selection. While old forest stands may be preferred in some areas, white-tailed deer also select young forests stands that intercept snow and provide forage. In summer, they prefer dense cover types, showing a preference for north and east facing slopes of cedar habitats.

White-tailed deer are particularly vulnerable to highway accidents where roads traverse frequently used lowland and riparian habitats. Snowmobile traffic is known to disturb and

temporarily displace white-tailed deer. Displacement of deer on poor range or during severe winters could be detrimental to their energy budget.

Forest disturbances that benefit white-tailed deer summer range include those practices creating canopy openings (in conjunction with fire). Forest debris (i.e., logging slash) should not exceed 12 inches in depth. To provide suitable summer and winter forage habitats, approximately 20 to 30 percent of the landscape should in early succession (openings). Low to mixed severity fire and restricted motorized access on winter range is expected to benefit this species.

White-tailed Deer: Environmental Consequences

Direct and Indirect Effects of No Action: There are no direct effects resulting from no action. Indirect effects include advancing forest succession. Habitat conditions would decrease in the long-term as vegetative succession continues and forage decreases.

Direct and Indirect Effects of Action Alternatives: Habitat effects for white-tailed deer are expected to parallel that of elk summer habitat. Access restrictions and vegetative disturbances that benefit elk would also benefit white tailed deer. All planned vegetative disturbances are expected to improve white-tailed deer habitat. Road obliteration would decrease human the risk of human disturbance into otherwise suitable habitat. The effects of noxious weed expansion, control or eradication are expected to have little to no effect on white-tailed deer habitat.

Cumulative Effects: The geographic boundary for assessing cumulative effects of each alternative for white-tailed deer is the NLF study area. The time frame for the cumulative effects assessment is 2012. Present and foreseeable future management actions or natural events within the NLF study area include: 1) Salvage harvest implemented through the Ranger District small timber sale program; 2) Lewis and Clark Bi-centennial celebration; 3) Re-introduction of wolf; 4) Large or severe wildfires; and 5) Advancing forest succession.

Habitat conditions for white-tailed deer would be improved throughout the NLF. Habitat is most productive when a variety of vegetative conditions, such as those proposed in the NLF, are easily accessed and widely available across the landscape. Salvage harvest would not substantially alter vegetative conditions; therefore it would not contribute to cumulative effects. The Lewis and Clark Bi-centennial celebration is not expected to affect habitat or populations of white-tailed deer. Improved habitat conditions would favor populations thereby improving the prey base for wolf. Precluding vegetative disturbance in habitats that developed with fire would ultimately decrease habitat quality, productivity and populations.

Pileated Woodpecker: Existing Conditions

Forest Plan Direction: The Clearwater Forest Plan, p II-23 requires projects to provide for snag-dependent indicator species (pileated woodpecker and goshawk) in accordance with guidelines in Appendix H. Appendix H contains the old growth and snag habitat management guidelines to be used on the CNF. Appendix H identifies preferred habitats

for pileated woodpecker as old growth (mature and late mature) forests. The Plan directs that "In each 10,000 acres of suitable habitat, a 300 acre stand should be managed as old growth for pileated woodpeckers…it is acceptable to divide the 300 acres into not more than three 100 acre areas as long as the areas are within 2 square miles". The Plan also directs that these 100+ acre stands be wider than 200 yards at any one point.

General Description: Source habitats for pileated woodpeckers are characterized as "…old-forest single and multi-strata stages of grand fir, interior Douglas fir, western larch, western white pine, western red cedar-hemlock…" (Wisdom, et. al., Vol. 2-46). They depend on snags greater than 21" DBH for nesting and large, hollow trees for roosting. They are known to forage on large snags and down dead wood. They feed principally on carpenter ants (Warren, et. al., 1990). In the NLF, Douglas fir, western red cedar, larch, and large, decaying grand fir (dead or alive) are heavily used for foraging. Pileated woodpeckers appear to avoid open areas for foraging, preferring forests with significant old-growth component and high basal area.

In high quality habitats in the northern Rockies, breeding densities of one pair per 500 acres are typical. Nesting pairs often cover 500-1000 acres in their daily feeding activities. At least 100 acres of (contiguous) breeding habitat is necessary to provide an opportunity for nesting. Feeding habitat should also be available with the 1000-acre home range surrounding the nesting core. Accelerated development of late-seral conditions in lower montane and montane forests and retention of large snags and down dead wood in all forest stages is expected to benefit this species (Wisdom, et. al., Vol. 2-46).

Existing Condition: Currently suitable and potentially capable habitat was evaluated for the NLF analysis area. Habitat conditions were determined based on field reviews of the proposed project and through an evaluation of timber stand information. In addition old growth was evaluated and is displayed by Old Growth Analysis Units (OGAUs). (See Old Growth Section in the SEIS).

The best habitats for pileated woodpeckers on the CNF are generally associated with warm, moist habitats and old land surfaces. Approximately 114,000 acres (90 percent of the NLF) of the NLF analysis area is potentially capable of providing forest conditions suitable for pileated woodpecker habitat.

?? 114,000 acres potentially capable habitat
?? 27,500 acres currently suitable habitat

Stands suitable for pileated nesting and foraging generally occur in forest stands at 125 years or older, with a canopy closure greater than 40 percent. These stands typically contain larger, older trees; snags and large, down wood for breeding and foraging. An estimated 27,500 acres of stands in the NLF currently meet criteria suitable for either pileated woodpecker nesting or foraging habitats. Note, not all currently suitable habitat is classified as old growth. Many patches are in late successional stages but do not have the age or habitat conditions of old growth.

Available nesting habitat could accommodate an estimated 40 to 50 breeding pairs. An average of 3 to 4 patches of suitable nesting habitat occur in most old growth analysis units. Pileated woodpecker habitat in the NLF is widely available in the headwaters of major drainages (Pete King, Canyon, Deadman, Fish and Hungery Creeks). Much of the area burned by the large, intense fires of the early 20th century, however, is too young to provide pileated woodpecker large snags and down wood habitat components. Contiguous patches exceeding 100 acres of suitable pileated woodpecker habitat are widespread in the headwaters of these drainages, but limited in lower Fish and Hungery Creeks.

Pileated Woodpecker: Environmental Consequences

Analysis Process: Suitable and potentially capable habitat was used in the determination of effects. In addition, the effects to old growth were evaluated. Direct effects would be the loss or change of suitable habitat or direct mortality. Indirect effects are based on the changes in suitable habitat through time. The cumulative effects area for these species covers the entire North Lochsa area, including the past, present, and reasonably foreseeable actions within the seven major watersheds within the area.

The effects analysis for pileated woodpecker considered all planned NLF vegetation management activities within the species' habitat. Databases were queried (per criteria listed the NLF SEIS – MIS & TES Wildlife and Plant Resources Report, March 7, 2001). Activities likely to directly impact or benefit a species' habitat were summed. The results of the summations are presented in Table 3-59.

Planned silvicultural treatments that could affect pileated woodpecker habitat include regeneration harvest, off-site conversion, commercial thin, and salvage harvest. It is uncertain whether patches treated by commercial thin and salvage harvest would eliminate nesting habitat conditions for pileated woodpeckers. For the purposes of this analysis, however, it is assumed that commercial thin and salvage would alter patch structure sufficient to discontinue as potential pileated woodpecker nesting habitat.

Prescribed fire is expected to have mixed results on pileated woodpecker habitat. Though mixed severity fire could reduce nesting habitat, both mixed severity fire and underburns are expected to significantly increase snag habitat for foraging. These conditions, coupled with retention of mature forest within riparian areas, may allow nesting to continue in patches treated with prescribed fire. Patches treated by prescribed fire also are expected to continue to provide foraging habitat for pileated woodpeckers. Mixed severity fire is expected to have a neutral effect, while underburns would improve habitat conditions. This determination is based on prescribe fire 1) retaining a substantial amount of live mature trees; 2) retaining and creating large snags and down deadwood (per snag retention guidelines); and 3) retaining mature conifers in riparian habitats.

Road obliteration and noxious weed treatment were determined to have no effect to pileated woodpecker habitat because they do not change the vegetative conditions that pileated woodpeckers require.

Table 3-41: Direct Effects of Planned Activities on Pileated Woodpecker Habitat

Species	Regeneration Harvest (RG)	Off-site Conversion (CN)	Commercial Thin (CT)	Salvage (S)	Mixed Severity Burn (MSB)	Underburn (UB)
Pileated Woodpecker	Habitat Reduction[1/]	Habitat Reduction	Habitat Reduction	Habitat Reduction	Neutral (No Impact)[2/]	Habitat Improvement[3/]

1/ Habitat reduction = Suitable habitat characteristics are altered by the planned action sufficient to classify the habitat unsuitable for preferred habitation until habitat features are restored via forest succession
2/ Neutral (No Impact) = Suitable habitat characteristics (specifically denning or nesting habitat) for this species may be reduced by the planned action, while other habitat characteristics (specifically prey or foraging habitats) for this species would be improved by the planned action
3/ Habitat Improvement = Suitable habitat characteristics (generally prey or foraging habitats) are increased by the planned action while no substantive deterioration in other habitat characteristics (such as denning or nesting habitats) is suspected.

Table 3-42: Estimated Suitable Pileated Woodpecker by Alternative

	Alt 1	Alt 2	Alt 3	Alt 3a	Alt 4	Alt 5	Alt 6
Acres Reduced	0	3,200	2,900	3,200	2,400	2,400	1,600
Acres Remaining	27,500	24,300	24,600	24,300	25,100	25,100	25,900
Percent Reduced	0	12	11	12	9	9	6

Table 3-43: Old Growth Habitat Reductions

Old Growth Analysis Unit (OGAU)	Alt 1 (%/Ac)	Alt 2 (%/Ac)	Alt 3 (%/Ac)	Alt 3a (%/Ac)	Alt 4 (%/Ac)	Alt 5 (%/Ac)	Alt 6 (%/Ac)
Upper Hungery Cr (01)	0	0	0	0	0	0	0
Lower Hungery Cr (02)	0	0	0	0	0	0	0
Willow Cr (03)	0	0	0	0	0	0	0
Black Cany'n Face (09)	0	0	0	0	0	0	0
Lower Fish Cr (10)	0	0	0	0	0	0	0
Upper Fish Cr (11)	0	0	0	0	0	0	0
West Canyon (12)	0	3/390	3/390	3/390	3/390	3/390	0
Canyon/Glade (13)	0	1/150	1/150	1/150	1/150	1/150	0
Deadman (14)	0	1/30	1/30	1/30	1/30	1/30	0
Bimerick Cr (15)	0	1/50	1/50	1/50	1/50	1/50	0
East Pete King (20)	0	2/160	2/160	2/160	2/160	2/160	0
West Pete King (21)	0	0/10	0/10	0/10	0/10	0/10	0

Direct and Indirect Effects

Alternative 1: would cause no direct effects to pileated woodpecker habitat. Natural disturbance factors (insects, disease, wind and fire) would continue to influence and shape habitat distribution and availability. Natural succession of potentially capable habitat would continue and would result in increases in suitable habitat over time. Previously harvested areas would eventually develop with advancing forest succession, providing nesting and foraging habitats. Alternative 1 would retain an estimated 24 percent (27,500 acres) within the range of potential pileated woodpecker habitat (114,000 acres) in the NLF.

Alternatives 2 and 3a: would reduce currently suitable pileated woodpecker nesting habitat by approximately 3,200 acres (12 percent reduction). The largest reductions in pileated woodpecker habitat would occur in old growth analysis units (OGAUs) 512, 513 and 520. (See Appendix A for a map showing the locations of these areas). This general area contains the highest concentration of suitable pileated woodpecker nesting habitat in the NLF and is sufficient to accommodate an estimated 25 to 30 breeding pairs. Planned actions could reduce potential nesting habitat in the vicinity of Walde Mountain and Canyon Junction by 2 to 5 breeding territories. Together, these OGAUs (512, 513 and 520) would retain sufficient habitat to meet the Forest Plan Appendix H standards and continue to support an estimated 20 to 25 breeding pairs.

Snag and live tree guidelines cannot be achieved in the upper reaches of the Bimerick Creek watershed. Here, because of the reforestation practices of planting off-site ponderosa pine, the trees are often not large enough to meet diameter or height guidelines for snags. Likewise, retention of live ponderosa pine, because of their origin, is discouraged. It is expected that essentially all dead ponderosa pine would be retained (though they would likely be burned down with planned prescribed fire). Larger, live trees within the upper Bimerick Creek watershed are expected to only occur within the riparian areas.

In the long term, with all alternatives, pileated woodpecker nesting habitat is expected to increase within most of the major watersheds (Pete King, Deadman, Bimerick, Fish, Hungery and Willow Creeks, and the Lochsa River face between Bimerick and Fish Creeks) due to advancing forest succession. Pileated woodpecker nesting habitat in the Canyon Creek watershed, however, is likely to decline as forest age classes are moved toward the historic conditions. Prescribed silvicultural practices would promote more rapid tree growth (diameter and height) in younger stands of dense forest. In the long-term, vertical diversity (multi-storied canopy, snags, down logs, etc.) would be expected to increase, improving pileated woodpecker nesting and foraging habitat. Available pileated woodpecker habitat would mirror changes in forest succession.

Ecosystem management practices are expected to promote increasing larger patches of older forest. Young to middle-aged conifers largely dissect patches of older forest in the upper, developed watershed of the NLF. Retaining larger patches of existing older forest

(where forest health allow stands to survive) and allowing young stands adjoining them to mature, would eventually restore these larger patches.

There would be a short-term decrease in the number of breeding pairs the area can support. In the long-term habitat conditions would improve and increase and larger patches of older forest develop in suitable LTA's, primarily in the lower Fish Creek watershed and Deadman Creek watershed east.

Alternative 3: would decrease habitat by approximately 2,900 acres (11 percent of current available habitat). Approximately 24,600 acres of currently suitable habitat would be retained. Alternative 3 has similar effects to old growth as Alternatives 2 and 3a.

Alternatives 4/4a and 5: would decrease habitat by approximately 2,400 acres (9 percent of current available habitat). Alternatives 4/4a and 5 would retain approximately 25,100 acres and these alternatives have the same effects to old growth as Alternatives 2 and 3a.

Alternative 6: would decrease pileated woodpecker habitat by approximately 1,600 acres (6 percent of current available habitat). Alternative 6 would retain approximately 25,900 acres. Since alternative 6 does not harvest old growth it affects the least amount of habitat of all action alternatives. Alternative 6 would decrease potential pileated nesting habitat throughout the entire NLF area by and estimated 1 to 3 breeding territories. Approximately 35-45 breeding territories would be retained.

Alternative 6 would result in a short-term decrease in habitat to support breeding pairs. In the long-term habitat conditions would improve and increase as noted in the previous discussion.

Cumulative Effects: The geographic boundary for assessing cumulative effects is the NLF study area. Several timber harvest projects are adjacent to the NLF analysis area but are not included in the cumulative effects analysis. The NLF analysis area is large enough to evaluate the effects of NLF activities on pileated woodpeckers, in addition to other actions within the area. In addition projects adjacent to the analysis area must also meet Forest Plan direction for providing pileated woodpecker habitat.

The time frame for the cumulative effects assessment is 2012. Present and foreseeable future management actions and natural events in the NLF study area which could effect this species include: 1) salvage harvest implemented through the Ranger District small timber sale program; 2) large or severe wildfires; and 3) advancing forest succession. Grazing, and the Lewis and Clark Bicentennial activities would not effect pileated woodpecker habitat therefore they are not considered cumulative actions.

All timber harvest activities are likely to locally reduce suitable nesting habitat for the pileated woodpecker. Though treated stands would retain large trees and snags, they are not expected to provide nesting habitat conditions for at least 75 years. Advancing forest succession, particularly in those habitats burned by extensive wildfires in the early 1900’s, would continue to improve the distribution of potential habitat.

The greatest increase in both habitat availability, distribution and breeding territories is

be expected to occur on breaklands, as forest patches created by the large fires in the mid-20th century age and expand. Aging and older forest stands throughout the NLF are expected increase fuel loading as forest succession advances, trees die and wildfires are suppressed. In the long term, without vegetative disturbances (either planned or unplanned), the risk of larger patches of older trees being lost as pileated woodpecker habitat, due to wildfire, is expected to increase.

Forest Plan Consistency: All alternatives meet the Forest Plan standards for pileated woodpecker habitat for within all OGAUs except Willow Creek (#503). None of the alternatives affect pileated woodpecker habitat in Willow Creek. Though planned disturbances would convert potential pileated woodpecker nesting and foraging habitats to openings, habitat quality would continue to meet or exceed CFP standards. Advancing forest succession promoting larger patches of older forest would continue to restore potential breeding habitats in forestlands burned extensively in the early 1900's. Suitable nesting habitat in the NLF would be retained under all alternatives to support an estimated 40 to 45 breeding pairs of pileated woodpecker.

American Marten (Pine Marten): Existing Conditions

Forest Plan Direction: Preferred habitats for American pine marten, or pine marten, are old growth (mature and late mature) forests. Standards or direction pertaining to American marten habitat are incorporated (by association) into Forest Plan standards and guidelines for old growth and snags. Additionally, per the Forest Plan, Appendix H, American marten habitat is favored by: 1) retaining large patches of mature and late mature forest; and 2) assuring the presence of large standing and down wood for denning and foraging.

General Description: Optimal habitat for American marten has been described as mature/old-growth spruce-fir forest with at least 30 percent canopy cover, plentiful down wood, stumps and an understory of shrubs and forbs (USDA, 1998, # 410). Source habitats for American marten are characterized as montane and subalpine community groups of late-seral and/or unmanaged young forest stands which contain large-diameter snags and down dead wood (Wisdom, et. al., Vol. 2-46). Habitats include alpine forests (particularly when adjacent to dense, mature forest types at lower elevations), moist habitats of mature lodgepole pine and dense cedar-grand fir forests at lower elevations (USDA, 1998, # 410). Down wood that provides habitat for many of their prey, is likely the key component of American marten foraging areas. Snags provide rest and den sites. American martens usually avoid openings and open sapling stands, especially in winter. Home ranges for males have been reported (Buskirk and Ruggerio, unknown date) to range between ½ to 6 mi^2 (0.8-15.7 km^2).

Existing Condition: Current and potentially suitable habitat was evaluated for the NLF analysis area. Habitat conditions were determined based on field reviews of the proposed project and through an evaluation of timber stand information.

- ?? 46,900 acres potentially suitable habitat
- ?? 15,600 acres currently suitable habitat
- ?? Winter habitat limiting factor

The best habitats for American marten on the CNF are generally associated with cool, moist habitats at mid- to high elevations. Based on habitat needs winter habitat appears to be the limiting factor for American marten. Available pine marten habitat in the NLF was modeled based on winter habitat preferences (conifer stands greater than 100 years or older, containing greater than 30 percent canopy cover). Approximately 46,900 acres (37 percent) of the NLF analysis area are potentially capable of providing forest conditions suitable for American marten winter habitat. An estimated 15,600 acres of forest stands within the NLF meet the winter habitat criteria for suitable American marten habitat. A significant amount of this habitat occurs within Riparian Habitat Conservation Areas (RHCAs) protected by default PACFISH buffers.

No surveys have been conducted for American marten nor have there been reports of sightings in or near the analysis area. American marten have been observed in habitats similar (based on elevation, forest types and landtypes) to those in much of the NLF. There is a high probability that American marten exists at the upper elevations of the analysis area due to availability of habitat.

American Pine Marten: Environmental Consequences

Analysis Process: Suitable and potentially capable habitat was used in the determination of effects. Direct effects would be the loss or change of suitable habitat or direct mortality. Indirect effects are based on the changes in suitable habitat through time. The cumulative effects area for the pine marten covers the entire North Lochsa area, including the past, present, and reasonably foreseeable actions within the seven major watersheds within the area.

All vegetative actions were evaluated to determine what effects the actions would have on American marten habitat. Table 3-44 describes the effects that would result from the different vegetative management actions. Databases were queried based on habitat criteria (see the North Lochsa Face SEIS Project File, “MIS & TES Wildlife and Plants Resources Status Report” for more details). Activities likely to affect or benefit a species were summed. The results are presented in Table 3-59.

Planned silvicultural treatments expected to effect to current American marten habitat include regeneration harvest, off-site conversion, and commercial thin harvest prescriptions. It is uncertain whether patches treated by commercial thin would eliminate denning and foraging habitat conditions for American martens. For the purposes of this analysis, however, it is assumed that commercial thin would alter patch structure sufficient to discontinue as denning habitat.

Salvage harvest, prescribed fire and underburn are expected to have mixed results on American marten habitat. Though preferred habitat could potentially be reduced by these

practices, treated patches are expected to increase standing dead and down wood for some prey species. Although live trees and snags would be retained in these stands, the value of these stands to American marten would be reduced from current conditions.

Prescribed fire practices, however, are expected to improve rodent habitat. Rodent populations should locally increase as forest canopies are opened, promoting shrub and young tree growth. These conditions, coupled with retention of mature forest within riparian areas, may allow habitat use to continue. Salvage prescribed fire practices would have neutral effect on American marten habitat because they 1) retain a substantial amount of live mature trees; 2) retain large snags and down deadwood (per snag retention guidelines) within these patches; and 3) retain mature conifers in riparian habitats.

Road obliteration and noxious weed treatments were determined to have no effect on American marten habitat therefore they are not considered further.

Table 3-44: Direct Effects on American Pine Marten Habitat

Species	Regeneration Harvest (RG)	Forest Type Conversion (CN)	Commercial Thin (CT)	Salvage (S)	Mixed Severity Burn (MSB)	Underburn (UB)
American Marten	Habitat Reduction	Habitat Reduction	Habitat Reduction	Neutral (No Impact)	Neutral (No Impact)	Neutral (No Impact)

1/ Habitat reduction = Suitable habitat characteristics are altered by the planned action sufficient to classify the habitat unsuitable for preferred habitation until habitat features are restored via forest succession
2/ Neutral (No Impact) = Suitable habitat characteristics (specifically denning or nesting habitat) for this species may be reduced by the planned action, while other habitat characteristics (specifically prey or foraging habitats) for this species would be improved by the planned action
3/ Habitat Improvement = Suitable habitat characteristics (generally prey or foraging habitats) are increased by the planned action while no substantive deterioration in other habitat characteristics (such as denning or nesting habitats) is suspected.

Table 3-45: Available American Pine Marten Habitat

	Alt 1	Alt 2	Alt 3	Alt 3a	Alt 4	Alt 5	Alt 6
Acres Affected	0	1,200	1,000	1,200	1,200	1,200	1,000
Acres Remaining	15,600	14,500	14,600	14,500	14,500	14,500	14,600
Percentage Affected	0	8	7	8	8	8	7

Direct and Indirect Effects

Alternative 1: would cause no direct effects to American marten habitat. Natural disturbance factors (insects, disease, wind and fire) would continue to influence and shape habitat distribution and availability. Previously harvested areas would eventually develop with advancing forest succession, providing denning and foraging habitats. Alternative 1 would retain an estimated 15,600 (33 percent) within the range of potential pine marten habitat (46,900

Alternatives 2, 3a, 4 and 5: would decrease pine marten habitat by approximately 1,200 acres (8 percent of current available habitat). Alternatives 2, 3a, 4 and 5, would retain

approximately 14,500 (31 percent) acres of the potential winter habitat. Potential winter habitat is only reduced by 2 percent.

In the long term pine marten habitat is expected to increase due to advancing forest succession. Prescribed silvicultural practices would promote more rapid tree growth (diameter and height) in younger stands of dense forest. In the long-term, vertical diversity (multi-storied canopy, snags, down logs, etc.) would be expected to increase, improving American marten habitat. Available American marten habitat would mirror changes in forest succession.

Aging and older forest stands throughout the NLF are expected increase fuel loading as forest succession advances, trees die and wildfires are suppressed. In the long term, without vegetative disturbances (either planned or unplanned), the risk of larger patches of older trees being lost as American marten habitat, due to wildfire, is expected to increase.

Alternatives 3 and 6: would decrease American marten habitat by approximately 1,000 acres (7 percent). Alternatives 3 and 6 would retain approximately 14,600 (31 percent) acres within the range of potential American marten habitat in the NLF.

All action alternatives maintain at least 92 percent of the existing winter habitat and only reduce potential habitat by 2 percent (33 to 31 percent). There is adequate habitat available currently and in the future to provide for viable American marten populations in the future.

Cumulative Effects: The geographic boundary for assessing cumulative effects is the NLF study area. The NLF is sufficiently large to meet the habitat and home range needs for American martens residing in the analysis area. In addition, vegetation management projects outside (but in proximity) of the NLF either do not occur in American marten potential habitat or would be complete before activity in NLF is initiated. The time frame for the cumulative effects assessment is 2012.

Present and foreseeable future management actions and natural events in the NLF study area that could affect this species include: 1) salvage harvest implemented through the Ranger District small timber sale program; 2) snowmobile use and summer recreation; 3) large or severe wildfires; and 4) advancing forest succession.

The timber sale salvage program could locally reduce suitable denning and foraging habitat for American marten; however the amount of habitat that is currently providing winter habitat and the amount of potential winter habitat would not substantially change. Snowmobile use and summer recreation use may increase on existing travel routes within American marten habitat. However this use would not affect denning or foraging habitat. Since these activities neither influence the current availability of denning or foraging habitats, their cumulative effect on American marten habitat is expected to be nil.

Aging and older forest stands throughout the NLF are expected increase fuel loading as forest succession advances, trees die and wildfires are suppressed. In the long term, without vegetative disturbances (either planned or unplanned), the risk of larger patches

of older trees being lost as American marten habitat, due to wildfire, is expected to increase.

In the long term, with all alternatives, American marten habitat is expected to increase due to advancing forest succession. Prescribed silvicultural practices would promote more rapid tree growth (diameter and height) in younger stands of dense forest. In the long-term, vertical diversity (multi-storied canopy, snags, down logs, etc.) would be expected to increase, improving American marten habitat. Available American marten habitat would mirror changes in forest succession.

Belted Kingfisher: Existing Conditions

Forest Plan Direction: There is no specific Forest Plan direction related to the belted kingfisher.

General Description: Kingfishers are a predator of small fish. They hunt by perching over or along the stream and, therefore, restrict most of their activities to major stream courses. Clear water, without significant emergent vegetation is a habitat requirement for this bird (USDA, 1998, #157). Another habitat requirement appears to be stream courses sufficiently wide and open to allow unrestricted flight above the stream. On the Clearwater the king fisher has not been observed in stream habitats where there is dense vegetation over the stream.

Existing Condition: An estimated 30 to 40 miles of open riparian habitat along major streams in the NLF are available to the belted king fisher. Habitat quality has not been reduced from what was available historically and is readily available in the project area.

This species is common along lower Pete King, lower/mid-Fish/Hungery Creeks and the mainstem Lochsa River and appears to be quite common along major streams in central Idaho. No formal inventories have been conducted for the belted kingfisher because it is quite common. The species, however, is included in neotropical bird and breeding bird census efforts. It is believed a good indicator of stream quality (USDA, 1998, #157).

Belted Kingfisher: Environmental Consequences

Analysis Process: A qualitative analysis was conducted for the belted kingfisher to determine if nesting and perching habitat along larger fish bearing streams would be retained and whether fish bearing streams would continue to be productive for fish. If these two components were maintained then the species would continue to be maintained.

Direct and Indirect Effects Alternative 1: Alternative 1 would have no direct effects on nesting and perching habitat within the NLF area. Fish bearing streams would continue to produce fish, however sedimentation is likely to continue because of roads located in high landslide risk areas. See effects analysis for no action under the Fisheries section for further details.

Action Alternatives: Nesting and perching habitat along larger fish bearing streams would be retained since there would be no vegetative management activities within 300

feet of these streams. Fish bearing streams would continue to be productive fisheries (see Fisheries section of the Supplemental EIS). Road obliteration would improve prey (fish) habitat for kingfishers by reducing instream sedimentation. The effects of noxious weed expansion, control or eradication are expected to have little to no effect on the habitats of the belted kingfisher.

Cumulative Effects: The geographic boundary for assessing cumulative affects on the kingfisher is the NLF study area. The time frame for the cumulative effects assessment is 2012. Present and foreseeable future management actions and natural events within the NLF study area include: 1) salvage harvest implemented through the Ranger District small timber sale program 2) Lewis and Clark Bi-centennial celebration; 3) re-introduction of wolf; 4) large or severe wildfires and 5) advancing forest succession.

There are no expected cumulative effects (beneficial or detrimental) to kingfisher. Stream buffers would be applied as necessary to salvage harvest, thereby retaining nesting and perching habitat. The Lewis and Clark Bi-centennial, nor the reintroduction of the wolf would affect any of the habitat components needed for this species. Large or severe wildfires that consume much of the habitat adjacent to large streams is unlikely due to the moister regimes and location near roads (easy access for firefighters). Advancing forest succession would only improve habitat conditions.

Threatened and Endangered Species

The USF&WS species list of March 2001 (from Bi-annual Forest-wide Species List, 1-4-01-SP-312), identified gray wolf, grizzly bear, bald eagle water howellia, Ute ladies'-tresses and lynx. This report has been updated to reflect the legal status of Canada lynx, which was listed as a ‘Threatened’ species on March 24, 2000.

Gray Wolf: Existing Conditions

Forest Plan Direction or Other Regulatory Direction: A strategy to protect and recover populations in Idaho is outlined in the Northern Rocky Mountain Wolf Recovery Plan (USFWS 1987) and EIS for Reintroduction of Gray Wolves to Yellowstone National Park and Central Idaho (USFWS 1994). The USFWS has designated reintroduced Central Idaho wolves as "non-essential, experimental" population south of Interstate 90 and east of US Highway 95.

The Clearwater Forest Plan established a goal to “Manage habitat to contribute to the recovery of each threatened and endangered species on the Forest.” In addition, the Plan standard (II-24) states the CNF will "Cooperate with future recovery efforts on behalf of the gray wolf...[and] Establish specific population or habitat recovery objectives for T&E species when sufficient biological information is available to do so (FSM 2621.2.). No critical habitat for wolves designated under the ESA in the northern Rocky Mountains.

General Information: Source habitats for wolves span a broad elevation range and include all (native) terrestrial community groups (Wisdom, et. al., Vol. 2-88). Key components (source habitats) of wolf habitat include: 1) Sufficient year-round prey base of ungulates and alternate prey; 2) Suitable somewhat secluded denning an rendezvous

sites; and 3) Sufficient space with minimal exposure to humans (USDA, 1998, #403). Home ranges (pack territories) typically include 50-200 mi^2 (USDA, 1998, #403) and typically include both summer and winter habitats of their primary prey base. In the Rocky Mountains wolves prey primarily on elk, white-tailed deer, moose and small mammals. Inadequate or deteriorated big game winter range can limit prey populations and effect wolves.

Wolf dens are usually located on moderately steep slopes with southerly aspects and well-drained soils usually within close proximity to surface water and at an elevation overlooking surrounding low-lying areas. Rendezvous sites are typically complexes of meadows that have adjacent hillside forest and nearby water. On old surfaces, slopes in the analysis area are relatively gentle, particularly on the major ridges. On these main ridges, deep soils and occasional rock outcrops are present; water is abundant. The deep soils, moist climate and abundant water encourages a mixture of young, dense coniferous stands interspersed among patches of mixed shrubs (willow, mountain maple, ceanothus spp., etc) and small "bogs".

Existing Condition: The NLF provides a year-round habitat for the wolf's prey base. Calving and fawning areas, such as in lower Fish Creek, is important to wolves because they often prey upon newborn ungulates. Elk or deer habitats within the analysis area would not limit wolf recovery. Beaver inhabit most of the major streams within the NLF. Based on the physical features, relative isolation (i.e., rugged, remote terrain and limited access), and availability of ungulate prey, the NLF (particularly major ridges in MAs C8S and C6) are considered suitable for wolf denning and rendezvous.

The Fish and Hungery Creeks area appears to contain most, if not all, the best features of wolf habitat (denning, rendezvous site features; abundant ungulate prey, particularly during the elk calving period; isolation from human disturbance). The combined watersheds are approximately 100 mi^2 in area. Based on the habitat features and total area, it is reasonable to assume the Fish and Hungery Creek watersheds are capable to providing habitat for at least one wolf pack.

Reports of possible wolf sightings in the NLF have been isolated events (i.e., no patterns relating to frequency or distribution have been noted). Wolf tracks were observed in the winter ’98-’99 in upper Pete King Creek. Reports from mountain lion hunters each of the last three winters indicates at least one wolf periodically inhabiting a portion of the NLF. In fall 2000, two sets of wolf tracks were observed within two air miles of the NLF study area boundary. In addition a wolf was observed about the same period in the same general area as the track sightings.

The gray wolf has recently colonized portions of Region 1 in mountainous habitat. Currently there are several wolf packs known or suspected to occur on the CNF. No packs are currently known to reside within the NLF. No dens or rendezvous areas are known to exist. Based on the presence of confirmed or suspected wolf sightings, there is a high probability that wolf currently inhabit, at least incidentally, the analysis area.

Gray Wolf: Environmental Consequences

Analysis Process: The analysis process for wolf focuses on the effects to their prey base, primarily elk, deer and moose.

Direct and Indirect Effects

With all alternatives, there would be no direct to the gray wolf. The level of human activity is expected to decrease in the NLF from recent levels due to implementation of the *North Lochsa Face Recreation and Access Management Record of Decision (April 2000)* and road obliteration projects.

Alternative 1: would have no direct affect on the gray wolf. Ungulate foraging habitat is likely to decrease with advancing forest succession and would likely contribute to declines in ungulate populations in the NLF. In the long term, large intense fires are likely to occur, increasing ungulate habitat at the expense of significant reductions in hiding and thermal cover habitats. Ungulate populations would be expected to undergo extreme population fluctuations, resulting in cycles of "boom and bust" for wolf prey availability. Based on deteriorating or unpredictable ungulate habitat conditions (via decreased available habitats), sufficient prey would not be expected to be available to accommodate increased wolf prey populations. Unneeded forest roads would be unaffected and would remain as access into otherwise suitable habitat.

Alternatives 2, 3, 3a and 6, would improve ungulate habitat the most and, therefore, be beneficial to providing wolf prey. Based on improved ungulate habitat conditions (via access restrictions and increased available winter forage), sufficient prey is expected to be available to accommodate increased wolf populations. Unneeded forest roads would be obliterated or place in long-term maintenance, thereby reducing human access into otherwise suitable habitat.

Alternative 4: would improve the least of amount of elk winter habitat and, therefore, would be least beneficial to wolf prey.

Alternative 5: would be marginally improve ungulate habitat and wolf prey.

Cumulative Effects: The cumulative effects analysis for wolf evaluates activities across its recovery zone, but specifically focuses on activities adjacent to the NLF project area. The analysis evaluates those activities proposed to occur by 2012.

The following projects are considered for the wolf cumulative effects analysis because their home range requirements could extend beyond the NLF. Present and foreseeable future management actions within the vicinity of the NLF study area include: Knoll Creek Bugs and Four Dollar Salvage timber sales; Swan Creek Fuels; NiMiiPu Connector Trail construction; Snowmobile Trail Grooming Roads 500, 103, 104; pocket gopher poisoning in young forest plantations; cattle grazing; and Mex Mountain Work Center Winter Outfitter Rental.

The following discussion also recognizes that the possibility of significant increases in summer recreation use on the margins of the NLF on Road 500, in response to the approaching Lewis and Clark Bi-centennial celebration. Projects directly or indirectly associated with the bi-centennial include: Lolo Trail Portals and Resource Protection; Weitas Butte Loop Trails; and Smithsonian Lewis and Clark Outfitted Tours. Projects for which no specific proposal has been developed (Eldorado, Lolo and Knoll Camp EISs) will not be addressed in this analysis because they are speculative and have not been determined to be feasible therefore they are not considered reasonably foreseeable.

Planned Forest Service management practices are not expected to directly affect wolf habitat within the CNF. CNF elk habitat effectiveness standards would continue to be met for the NLF. The planned actions would not develop roads into non-roaded potential wolf habitat. Planned NLF actions are expected to improve elk winter range; retain or enhance moose winter range; and improve white-tailed deer foraging habitat.

Planned timber sales near the NLF analysis area are located in developed forest areas, near major forest roads. Because of their proximity to major forest roads, these timber sales are not expected to effect wolf habitats. Timber harvest (including the Knoll Creek Bugs and Four Dollar Salvage Timber Sales) is currently limited to developed (roaded) portions of the Forest. No road development into roadless areas is being considered or implemented. Motorized access has been restricted per the *North Lochsa Face Recreation and Access Management Record of Decision (April 2000)*. Road obliteration, though largely outside of suitable wolf would continue to benefit the restoration of forest health (via improved water quality, reforestation and decreased motorized access). Summer livestock grazing would continue in the upper elevations of the Pete King watershed. Extensive road access and human use factors in the upper elevations of the Pete King watershed would likely discourage wolf pack development or significant wolf habitat use in this area.

Winter recreation would largely occur above the upper elevations of big game winter range. Winter recreation is not expected to effect wolves or wolf habitat.

The potential to effect habitat for wolves due to the Lewis and Clark Trail bicentennial celebration is unclear at this time. The CNF is considering limiting access along this route for safety and resource protection. Steep, remote terrain and dense vegetation are also expected to largely confine the human impacts of this celebration to the major ridges traversed by the Lolo Motorway (Road 500). The dry, relatively sterile forests along this route are typically not selected by ungulate prey species as preferred habitat. It is likely that wolf would generally travel over this major ridge en route to preferred prey habitats below the ridge.

The effects on elk populations due to wolf re-introduction, is unclear. Large wildfires on elk winter range would help maintain or reverse declines in elk populations. Access restrictions and policies are expected to achieve the predicted elk summer habitat effectiveness estimates. Elk summer habitat would continue to improve, as large patches of cover are re-established on the landscape. Large wildfires, such as the 1994 Freezeout Complex, are likely to occur somewhere within the their respective recovery areas by

2012. Large wildfires in the undeveloped portions of the recovery area would be beneficial in providing additional spring; summer and fall forage for ungulate prey species. Severe winters would cause short-term availability of prey following significant winter mortality of ungulate prey. Prey availability, however, would be less in subsequent years, until ungulate prey populations recovered. Changes in big game hunting and fish regulations could be either beneficial or detrimental to the wolf, depending on influences on prey availability.

The concern for wolf, related to gopher control projects in or near the NLF, would be that a wolf would ingest one or more of the poisoned gophers. This is an unlikely event given the current distribution of wolves, the location of the treatment units, the method of treatment, the short time duration of the activity, the availability of other more preferred prey species and the relatively small acreage involved. It would require an adult wolf to eat several gophers to be killed or seriously harmed. Pups would be more easily affected. There are, however, no known or suspected active den sites near potential treatment areas. Young pups are less mobile than adults or sub-adults therefore the possibility is relatively remote. If a wolf is found within the project area, the Forest would immediately consult USFWS and take special measures in administering the baiting contract.

Forest Plan Consistency: All alternatives are consistent with the Clearwater Forest Plan because they provide adequate habitat conditions to contribute to the recovery of the gray wolf.

Grizzly Bear: Existing Conditions

Forest Plan and Regulatory Direction: The Clearwater Forest Plan established a goal to “Manage habitat to contribute to the recovery of each threatened and endangered species on the Forest.” The Bitterroot Grizzly Bear Recovery Area consists of the Selway-Bitterroot Wilderness and the Frank Church-River of No Return Wilderness. The NLF is not within the Bitterroot Grizzly Bear Recovery Area. Interim direction from Forest Supervisor James L. Caswell, states that "Projects outside the currently delineated boundary of the Bitterroot Ecosystem do not need to consider grizzly bear habitat as an issue in the NEPA process...In the interim, grizzly bear habitat would be incorporated into the effects analysis and management direction for big game habitat.”

General Information: Source habitats for grizzly bear span a broad elevation range and include all (native) terrestrial community groups. “Grizzly habitat selection is affected by: 1) abundance and quality of foods; 2) gender-specific orientation to different nutrients; 3) reproductive status of females and concerns about security of dependent young; 4) presence and identity of other bears, especially adult males; and 5) presence of humans and prior contact with humans” (Wisdom, et. al., Vol. 2, 88-89).

Habitat use by grizzly bears coincides with seasonal availability of food. After emerging from their den, bears travel to lower elevations, usually along major ridges. They seek out big game carcasses on winter range areas or visit traditional spring ranges to forage. Side hill parks, avalanche chutes, wet meadows and low gradient stream bottoms characterize

traditional spring ranges for grizzlies. With vegetative "green-up", grizzlies move to higher elevations.

Denning sites are commonly located on northern aspects above 6000 feet, at or above treeline. Big game fawning and calving areas (such as located on Fish and Hungery Creeks) are important foraging areas. Grizzly bears are sensitive to human activities and typically avoid areas used heavily by people. Home range may exceed 1000 mi^2 (Butterfield and Almack, 1985).

Existing Condition: No suitable denning areas, based on elevation and aspect, exist within the NLF. There are no recorded sightings of grizzly bears in or near the NLF. The presence of grizzly bears has not been confirmed on the CNF; no critical habitat has been designated. Based on the absence of confirmed grizzly bear sightings on the Forest, there is a low probability that grizzly bear currently inhabit the analysis area. No grizzly bears are known to currently live in the Bitterroot Mountains of Idaho (Wisdom, et. al., Vol. 2-92).

Grizzly Bear: Environmental Consequences

Analysis Process: Interim direction from Forest Supervisor James L. Caswell, states that "Projects outside the currently delineated boundary of the Bitterroot Ecosystem do not need to consider grizzly bear habitat as an issue in the NEPA process...In the interim, grizzly bear habitat would be incorporated into the effects analysis and management direction for big game habitat. Management practices that improve prey habitat and reduce human access into potential grizzly bear habitats would improve habitat suitability for grizzly bears (Wisdom, et. al., Vol. 2-93).

Suitable foraging habitat for grizzly likely occurs in the Fish/Hungery Creek watershed. Elk and deer habitat is declining, largely due to advancing forest succession reducing winter browse production; habitat for anadromous fish is expected to be maintained or improved. The Northern Region modeling rules for grizzly bear habitat were reviewed (USDA 1998 #408). The modeling rules focused on big game winter ranges and road density. Trends in big game winter range and road density are modeled for elk. Grizzly bear habitat features in the NLF, therefore, were modeled using elk habitat indicators. This analysis focused on elk summer habitat effectiveness, availability of quality elk winter range, and changes in motorized access within the NLF.

Direct and Indirect Effects

With all alternatives, there would be no direct effects to grizzly bear. The level of human activity is expected to decrease in the NLF from recent levels due to implementation of the *North Lochsa Face Recreation and Access Management Record of Decision (April 2000)* and road obliteration projects.

Alternative 1: would have no direct affect on existing grizzly bear habitat or population. Ungulate foraging habitat is likely to decrease with advancing forest succession and would likely contribute to declines in ungulate populations in the NLF. In the long term, large intense fires are likely to occur, increasing ungulate habitat at the expense of

significant reductions in hiding and thermal cover habitats. Ungulate populations would be expected to undergo extreme population fluctuations, resulting in cycles of "boom and bust" to grizzly bear prey availability. Based on deteriorating or unpredictable ungulate habitat conditions (via decreased available habitats), sufficient prey would not be expected to be available to accommodate increased grizzly bear populations. Unneeded forest roads would be unaffected and would remain as access into otherwise suitable habitat.

Alternative 2, Alternatives 3, 3a and 6: would improve ungulate habitat the most and, therefore, would be beneficial to grizzly bear prey. Based on improved ungulate habitat conditions (via access restrictions and increased available winter forage), sufficient prey is expected to be available to accommodate increased grizzly bear prey populations. Unneeded forest roads would be obliterated or place in long-term maintenance, thereby reducing human access into otherwise suitable habitat.

Alternative 4: would improve the least of amount of elk winter habitat and, therefore, would be least beneficial to grizzly bear prey.

Alternative 5: would be marginally beneficial to grizzly bear prey, due to limited ungulate habitat improvement.

Cumulative Effects: The cumulative effects analysis for grizzly bear evaluates activities across its recovery zone, but specifically focuses on activities adjacent to the NLF project area. The analysis evaluates those activities proposed to occur by 2012.

The following projects are considered for the grizzly bear cumulative effects analysis because their home range requirements could extend beyond the NLF. Present and foreseeable future management actions within the vicinity of the NLF study area include: Knoll Creek Bugs and Four Dollar Salvage timber sales; Swan Creek Fuels; NiMiiPu Connector Trail construction; Snowmobile Trail Grooming Roads 500, 103, 104; pocket gopher poisoning in young forest plantations; and Mex Mountain Work Center Winter Outfitter Rental. The following discussion also recognizes that the possibility of significant increases in summer recreation use on the margins of the NLF on Road 500, in response to the approaching Lewis and Clark Bi-centennial celebration. Projects directly or indirectly associated with the bi-centennial include: Lolo Trail Portals and Resource Protection; Weitas Butte Loop Trails; and Smithsonian Lewis and Clark Outfitted Tours. Projects for which no specific proposal has been developed (Eldorado, Lolo and Knoll Camp EISs) will not be addressed in this analysis.

Planned Forest Service management practices are not expected to directly affect grizzly bear habitat within the CNF. CNF elk habitat effectiveness standards would continue to be met for the NLF. The planned actions would not develop roads into non-roaded potential grizzly bear habitat. Planned NLF actions are expected to improve elk winter range; retain or enhance moose winter range; and improve white-tailed deer foraging habitat. Planned timber sales near the NLF analysis area are located in developed forest areas, near major forest roads. Because of their proximity to major forest roads, these

timber sales are not expected to effect grizzly bear habitat. Winter recreation would largely occur above the upper elevations of big game winter range.

Timber harvest (including the Knoll Creek Bugs and Four Dollar Salvage Timber Sales) is currently limited to developed (roaded) portions of the Forest. No road development into roadless areas is being considered or implemented. Motorized access has been restricted per the *North Lochsa Face Recreation and Access Management Record of Decision (April 2000)*. Road obliteration, though largely outside of suitable grizzly bear habitat, would continue to benefit the restoration of Forest health (via improved water quality, reforestation and decreased motorized access).

The potential to effect habitat for grizzly bear, due to the Lewis and Clark Trail bicentennial celebration is unclear at this time. The CNF is considering limiting access along this route for safety and resource protection. Steep, remote terrain and dense vegetation are also expected to largely confine the human impacts of this celebration to the major ridges traversed by the Lolo Motorway (Road 500). The dry, relatively sterile forests along this route are typically not selected by ungulate prey species as preferred habitat. It is likely that grizzly bear would generally travel over this major ridge en route to preferred prey habitats below the ridge.

The effects on elk populations due to wolf re-introduction, is unclear. Large wildfires on elk winter range would help maintain or reverse declines in elk populations. Access restrictions and policies are expected to achieve the predicted elk summer habitat effectiveness estimates. Elk summer habitat would continue to improve, as large patches of cover are re-established on the landscape. Large wildfires, such as the 1994 Freezeout Complex, are likely to occur somewhere within the their respective recovery areas by 2012. Large wildfires in the undeveloped portions of the recovery area would be beneficial in providing additional spring; summer and fall forage for ungulate prey species. Severe winters would cause short-term availability of prey following significant winter mortality of ungulate prey. Prey availability, however, would be less in subsequent years, until ungulate prey populations recovered. Changes in big game hunting and fish regulations could be either beneficial or detrimental to the grizzly bear, depending on influences on prey availability.

There is no evidence of grizzly bear utilizing the treatment areas or any area on the Clearwater National Forest.

Forest Plan Consistency: All alternatives are consistent with the Clearwater Forest Plan because they provide adequate habitat conditions to contribute to the recovery of the grizzly bear.

Bald Eagle: Existing Conditions

Forest Plan Direction: The Clearwater Forest Plan established a goal to "Manage habitat to contribute to the recovery of each threatened and endangered species on the Forest."

Existing Condition: The bald eagle is a winter resident and has been observed from September through April along the Middle Fork of the Clearwater and the lower Lochsa

Rivers. No bald eagle nesting occurs in the Middle Fork Clearwater River basin. US Highway 12 parallels winter habitat along the Lochsa River. Eagles hunt from perches in large trees along the river. They also roost in large trees along the river, typically within 200 yards of the riverbank. Eagles are routinely observed perched or flying from US Highway 12. Cold winter weather typically freezes much of the Lochsa River, precluding fishing by bald eagles. The primary food source for bald eagles wintering in this area, therefore, is largely carrion from road kills and drowned big game from falling through the ice. Carrion from wintering ungulates is believed to be the primary food source throughout most winters.

Bald Eagle: Environmental Consequences

Analysis Process: The Northern Region modeling rules for bald eagle habitat were reviewed. These rules, however, applied only to nesting habitat (USDA 1998 #64). Bald eagle winter habitat, therefore, was not modeled for the NLF analysis. Rather, this analysis focuses on modeling the availability of prey habitats and available perches within the NLF as the indicator of trends or suitability of bald eagle wintering habitat.

Direct and Indirect Effects

Alternative 1: Ungulate prey winter habitats would decline as forest succession advances. Decreasing ungulate prey populations would result in decreased highway road kills and winter drowning from deer and elk falling through the ice. Decreased availability of ungulate prey (carrion) would result in less opportunity for wintering bald eagles to use the maintstem of the lower Lochsa River. Perches would continue to be available for bald eagle roosting.

Alternatives 2 through 6: Ungulate prey winter habitats are expected to increase as elk and deer winter ranges are returned to more historic and stable conditions. Increasing ungulate prey populations would likely result in increased highway road kills and winter drowning from deer and elk falling through the ice. Increased availability of ungulate prey (carrion) would result in more opportunity for wintering bald eagles to use the maintstem of the lower Lochsa River. Since there is no harvest proposed adjacent to the river, bald eagle perches would continue to be available.

Lynx: Existing Conditions

Forest Plan and Regulatory Direction: The Clearwater Forest Plan established a goal to "Manage habitat to contribute to the recovery of each threatened and endangered species on the Forest."

On July 8, 1998, the US Fish and Wildlife Service published a proposal to list the lynx under the Endangered Species Act of 1973, as amended. On March 24, 2000 the lynx was listed as a threatened species. The Forest Service and US Fish and Wildlife Service signed a Conservation Agreement in February 2000 that provides direction for project and programmatic planning. In August 2000, the 2nd Addition of the Lynx Conservation Assessment and Strategy (LCAS) was issued. The LCAS was developed to provide a consistent and effective approach to conserve Canada lynx on federal lands in the

conterminous United States. The following analysis is based on information from the LCAS and Conservation Agreement (copies are located in the project file).

General Information: Although never abundant, lynx were distributed throughout northern Idaho in the early 1940's, occurring in 8 of the 10 northern and north-central counties. Much of the forests in Idaho are too dry to provide abundant lynx prey habitat. Lynx populations, therefore, were never large. Most current lynx sightings are made in Montana and northern Idaho. No current population estimates are available. Twelve lynx were reported harvested in Idaho between 1978 and 1991. Harvest records represent the primary source of information on lynx population numbers or trends in Idaho. The Idaho Department of Fish and Game does not monitor lynx populations in the State except through harvest records. Low population densities make effective monitoring efforts for lynx cost-prohibitive.

Lynx are believed to occupy habitats in Idaho at elevations above 4,000 feet elevation. They utilize Englemann spruce, sub-alpine fir or lodgepole pine habitats that provide a mosaic of forest age classes. They require early successional habitats for foraging and forested habitats for security, cover and denning. The lynx is a specialized predator and at a competitive disadvantage against other species. Lynx may be displaced or eliminated by bobcats or coyotes expanding into, and competing for, its range. There is probably limited overlap in the ranges of bobcats or coyotes with the range of lynx. However, as bobcats and coyotes expand their ranges because of forest alteration and other factors, the amount of overlap would likely increase. Where lynx and bobcat or coyote ranges overlap, their niches are typically only segregated by winter range conditions. Lynx are generally restricted to areas that receive deep snow cover, where they are more highly adapted than bobcats or coyotes. Lynx prefer forested cover for security and hunting and usually do not cross openings greater than 300 feet. Favored travel routes are forested areas along ridges and saddles.

They prey almost exclusively on snowshoe hares. Lynx hunting habitat largely depends on the availability of snowshoe hare habitat. Snowshoe hares require both forage and thermal cover within their typical 20 to 25 acre home range. The most productive snowshoe hare habitats occur where winter forage (willows, birch and conifers) and thermal cover (typically provided by a closed canopy of coniferous trees) are co-mingled. Thermal and security cover are so important that snowshoe hares may select this habitat even if forage is limited. In early forest succession stages in central Idaho, snowshoe hare thermal and security cover is characterized by dense stands of sapling size or larger conifers. Observations of snowshoe hare winter habitat use suggest they use nearly all forest succession stages, provided thermal cover is present, occurring on more gentle landscapes (which excludes most breaklands). Lynx denning habitat is characterized as occurring in moist, mature forests, on northerly aspects. Denning sites require a high density of down trees, 1 to 4 feet above the ground. Denning areas range from 1 to 5 acres, connected by mature forest travel routes accessing prey habitat.

Factors affecting lynx habitat are the alteration of forested habitats via timber management, roading, urbanization, ski development, motorized winter recreation and fire suppression. Loss of suitable habitat for lynx reduces the potential for population

growth or recolonization of the lynx and further confines lynx to smaller, more isolated habitat units. Forest fires historically created and maintained mosaics of early successional forest stands and mature conifer forest forming ideal snowshoe hare and lynx habitat. In Montana, 90 percent of locations of studied lynx were in dense stands of lodgepole pine that burned 67 years earlier. The lack of adequate hare habitat in southern latitudes may be partially a result of fire suppression over the past 50 years. Extensive forest fires occurred in Idaho during the early 1900's, and it is possible that fire suppression has allowed many of these burns to advance to older successional stages that are not conducive to supporting the landscape mosaic necessary for snowshoe hare and lynx populations.

Human access into lynx habitat has increased significantly over the last several decades. Increases roads, coupled with and the rapidly growing popularity of snowmobiles and other off-road vehicles has facilitated human access into historic lynx habitats. Increased human access presents a significant threat to lynx because of the increased likelihood of intentional or unintentional lynx mortality. Human access concerns are particularly important when or where lynx populations are low or are concentrated in localized refugia.

Trapping and hunting over harvest of lynx during the 1970's and 1980's, has reduced the potential for recovery of lynx populations. Lynx populations may have become so depleted that they cannot reach former densities even during the periods of abundant prey and maximum reproductive success. The threats to resident lynx from legal trapping for other species are reduced in many regions. Hunting seasons for bobcats may be a potential threat because of the difficulty in hunters distinguishing between bobcat and lynx. However, this potential threat may be less where the use of hounds for hunting is legal, because those hunters have a better chance of identifying the treed animal as a bobcat or a lynx. Dispersing lynx are also likely to increase their susceptibility to injury or mortality from legal trapping for other furbearers.

Forest management practices can be both beneficial and detrimental to lynx. Timber management and prescribed fire can be used to achieve the early successional stages of forest preferred by snowshoe hares. Timber harvest and fire suppression can also reduce cover, create unusable forest openings and develop undesirable monotypic stands. Assuring an appropriate mix of habitat conditions suitable for hunting, denning and cover are essential to re-establishing viable lynx populations.

Existing Condition: In conducting an assessment of lynx habitat, Lynx Analysis Units (LAU) were identified, per the guidelines described in the **"***Canada Lynx Assessment and Conservation Strategy***"** (pp 7-2 to 7-4). Two Lynx Analysis Units (LAUs) occur in the NLF and are located in Upper Fish Creek and Upper Hungery Creek (see map in map section of the project file). Quantifiable habitat features of these LAUs are depicted in Table 3-46. Generally, lynx conservation guidelines apply only to lynx habitat within LAUs, although considerations related to connectivity may be appropriate for other areas. Habitat data from the current CNF database is also provided in Table 3-46 for use in the cumulative effects analysis. In the Upper Fish Creek and Upper Hungery Creek LAUs, approximately 28,100 acres of potential available lynx habitat occurs in the NLF. Of this

amount, approximate 13,000 acres (46%) occurs as denning habitat and 14,700 acres (52%) as general habitat. An additional 300 to 400 acres (<2%) is considered unusable habitat within the combined LAUs. Unsuitable habitats are large meadows, lake/ponds, rock/talus outcrops.

Table 3-46: Lynx Habitat Features

Lynx Analysis Unit	LAU Area (ac & mi^2)	Not Habitat[1/]	Lynx Habitat within LAU[2/]	Denning Habitat (% LAU)	General Habitat (% LAU)	Unusable Habitat[3/] (%LAU)
Upper Fish Creek	17,200 ac (28 mi^2)	4900 ac (8 mi^2)	12,300 ac (20 mi^2)	7500 ac (61%)	4800 ac (39+%)	<100 ac (<1%)
Upper Hungery Cr	19,000 ac (30 mi^2)	3400 ac (5 mi^2)	15,600 ac (25 mi^2)	5500 ac (35%)	9900 ac (63%)	<300 ac (<2%)
NLF Totals	**36,400 ac (58 mi^2)**	**8300 ac (13 mi^2)**	**27,900 ac (45 mi^2)**	**13,000 ac (46%)**	**14,700 ac**	**<400 ac (<2%)**

1/ "Not habitat" are forest types that generally meet the elevation criterion are but are not generally acknowledged in the LCAS as suitable for lynx habitat. Forest types in this category on the CNF are typically western red cedar habitats.
2/ 'LAU area' minus 'not habitat' = 'lynx habitat within LAU'
3/ Unusable Habitat within LAU = (Total LAU Acreage – Large Meadows/Talus/Rock/Water Bodies) / Useable Habitat within LAU

There are approximately 20 miles of groomed snowmobile trail (Forest Road 500; (Lolo Motorway)) from Mex Mountain east (to 12 Mile Saddle), which transect the perimeters of the Fish Creek and Hungery Creek LAUs. The Clearwater County Groomer Advisory Board and Ridge Runners Snowmobile Club groom this trail (N. Johnson, pers. comm.). Grooming occurs 2 to 4 times per month, from early December to mid-April, depending on snow conditions (N. Johnson, pers. comm.). An additional 25 miles (estimated) of Forest Road (Mex Mountain to Fish Butte and Boundary Peak) in interior of these two LAUs are also available for snowmobiling. A "warming hut" is located at Beaver Dam Saddle (approximately 1 mile north Pete's Fork Junction). This warming hut is located at the junction of several groomed snowmobile trails and receives an estimated 1500 to 2000 snowmobile visitors per season. Two "play areas" (typically openings --- meadows, hillsides or ridges --- relatively unrestricted to snowmobile travel) occur in the headwaters of Obia Creek (Upper Hungery Creek LAU). These are Weitas Meadows and the "Fern Patch" (on Rocky Ridge below the Lolo Motorway).

The Mex Mountain (Forest Service) Work Center is under special use permit (late-December through February) for snowmobile outfitting. The special use permit allows up to eight overnight guests (plus outfitter employees). Use is limited to Friday through Sunday. Past annual use has totaled between 15 and 35 guests (C. Hennessey, Pers. Comm.) for the 2-3 month season. Snowmobile recreationists access Mex Mountain via approximately 20 miles of groomed snowmobile trail. Alternate access routes require approximately the same travel distance but are not over groomed trails. Snowmobile access from all points to Mex Mountain is outside of lynx habitat (as documented with the CNF LAUs).

Reported lynx sightings on the CNF are rare (23 reports on record since the early 1900's). ICDC records for the Lochsa Ranger District indicate there is one reported sighting of lynx in the NLF. Records of lynx sightings from the early 1900's indicated that three more confirmed sightings could be from within the NLF, but information is too general to confirm. Two un-confirmed, independent sightings were reported in late January 1993, near Lowell, Idaho, approximately 1 mile from the extreme western perimeter of the NLF. In the past ten years the Idaho Department of Fish and Game has recorded only two lynx, both harvested by trappers within the Clearwater and Nez Perce National Forests. Trappers using the NLF area have made no sighting reports. Although sighting reports are sporadic and inconclusive, the presence of suitable habitat in upper Fish and Hungery Creeks indicates a moderate probability that lynx inhabit the NLF.

Lynx: Environmental Consequences

Analysis Process: The following analysis is based on the habitat guidelines and strategies described in the LCAS. The LCAS directs that broad-scale assessments should maintain at least 85 percent of lynx habitat by: 1) Retaining at least 10 percent of an LAU in denning habitat in patches generally larger than 5 acres; 2) Maintaining or enhancing snowshoe hare habitat and red squirrel habitat (in proximity to denning habitat); 3) Designing vegetative management practices which are consistent with historic landscape patterns, forest succession and disturbance regimes; and 4) Maintaining habitat connectivity within and between LAUs.

Direct and Indirect Effects

Table 3-4 7 depicts changes in lynx habitat features within the NLF, by LAU, by alternative.

Table 3-47: Lynx Habitat by Alternative

Lynx Analysis Unit		Alt 1	Alt 2	Alt 3	Alt 3a	Alt 4	Alt 5	Alt 6
Fish Creek LAU	Denning Habitat	7500 ac 61%	6620 ac 54%	6620 ac 54%	7330 ac 60%	7270 ac 59%	6620 ac 54%	6620 ac 54%
	Snowshoe Hare Habitat	**1/**	2000 ac[2/]	2000 ac	750 ac	860 ac	2000 ac	2000 ac
Hungery Creek LAU	Denning Habitat	5500 ac 35%	4580 ac 29%	4580 ac 29%	5220 ac 33%	5500 ac 35%	4580 ac 29%	4580 ac 29%
	Snowshoe Hare Habitat	**1/**	2450 ac	2450 ac	500 ac	0 ac	2450 ac	2450 ac
Totals	**Denning Habitat**	**13K ac 46%**	**11.2K ac 40%**	**11.2K ac 40%**	**12.6K ac 45%**	**12.8K ac 45%**	**11.2K ac 40%**	**11.2K ac 40%**
	Snowshoe Hare Habitat	1/	4450 ac	4450 ac	1250 ac	860 ac	4450 ac	4450 ac

1/ No estimates developed for available snowshoe habitat
2/ Estimated increased snowshoe hare habitat as the result of NLF management practices within the LAU

Alternative 1: would cause no direct effects to lynx habitat (denning or prey). An estimated 61 percent of the Fish Creek LAU and 35 percent of the Hungery Creek LAU would retain lynx denning habitat features. In the long term, lynx denning habitat would be expected to increase and decrease snowshoe hare habitat (both habitat changes due to advancing forest succession in the Fish and Hungery Creek LAUs). Also, in the long term, large intense fires are likely to occur, the reverse in lynx habitat conditions would occur (increased snowshoe hare habitat at the expense of significant reductions in denning habitat). Unneeded forest roads in the Upper Fish Creek LAU would be unaffected and would remain as access into otherwise suitable habitat.

Alternatives 2, 3, 5 and 6: decrease lynx denning habitat by approximately 1,800 acres and increase in available snowshoe habitat by approximately 4,400 acres. An estimated 54 percent of the Fish Creek LAU and 29 percent of the Hungery Creek LAU would retain lynx denning habitat features. Total available denning habitat would exceed an estimated 11,200 (40%) acres of the nearly 28,000 acres of suitable lynx habitat within the NLF LAUs. Of all action alternatives, these alternatives would cause the largest decrease in denning habitat and the largest increase in snowshoe hare habitat.

Alternative 3a: would decrease lynx denning habitat by approximately 450 acres in the Fish Creek LAU. Available snowshoe habitat would increase by approximately 1,250 acres. An estimated 60 percent of the Fish Creek LAU and 34 percent of the Hungery Creek LAU would retain lynx denning habitat features. Total available denning habitat would exceed an estimated 12,600 (45%) acres of the nearly 28,000 acres of suitable lynx habitat within the NLF LAUs.

Alternative 4: would decrease lynx denning habitat by approximately 170 acres in the Fish Creek LAU. Available snowshoe habitat would increase by approximately 860 acres. An estimated 59 percent of the Fish Creek LAU and 35 percent of the Hungery Creek LAU would retain lynx denning habitat features. Total available denning habitat would exceed an estimated 12,800 (45%) acres of the nearly 28,000 acres of suitable lynx habitat within the NLF LAUs. Of all action alternatives, this alternative would cause both the smallest decrease in denning habitat and the smallest increase in snowshoe hare habitat.

Summary: Within each LAU, patches of denning habitat (greater than 5 acres in area) would be retained on most north aspects and moist habitats. Fire intensity on these north aspects is expected to be low or extinguished, due to moist fire fuel conditions. Denning habitats would continue to be interspersed and connected via general habitats (forest patches capable of providing cover that adjoin) and retention of default PACFISH buffers. Available snowshoe hare habitat would be increased and interspersed within denning and general habitats. Available red squirrel habitat would increase with advancing succession within those portions of the LAUs extensively burned by wildfire in the early 1900's. All planned NFL vegetative management practices within LAUs have been designed and selected to emulate historic landscape patterns, forest succession and disturbance regimes. No new roads or trail would be constructed in these LAUs. Alternatives 2 through 6 would obliterate or place unneeded roads into long-term maintenance in the Upper Fish Creek LAU, thereby reducing human access into otherwise suitable habitat. In all alternatives, the combination of denning, general and snowshoe hare habitat would exceed 97 percent of each LAU as useable habitat.

Prescribed silvicultural practices would promote more rapid tree growth (diameter and height) in younger stands of dense forest. In the long-term, vertical diversity (multi-storied canopy, snags, down logs, etc.) would increase and provide denning, resting, nesting and foraging habitat for prey species. The action alternatives would decrease lynx habitat potential in the NLF very slightly. No detectible effect on lynx populations or its respective habitat is expected.

Cumulative Effects: The measures of cumulative effects on lynx are: 1) Compliance with LCAS in assuring denning habitat availability; and 2) Trends in maintaining or improving the sustained availability of a productive prey base. The geographic boundary for assessing cumulative effects of each alternative on lynx are the LAUs within and adjoining the North Lochsa Face project area. The time frame for the cumulative effects assessment is 2012.

The following projects are considered for the lynx cumulative effects analysis because their home range requirements could extend beyond the NLF. Present and foreseeable future management actions within the vicinity of the NLF study area include: Knoll Creek Bugs and NiMiiPu Connector Trail construction; Snowmobile Trail Grooming Roads 500, 103, 104; and Mex Mountain Work Center Winter Outfitter Rental. The following discussion also recognizes that the possibility of significant increases in summer recreation use on the margins of the NLF on Road 500, in response to the approaching Lewis and Clark Bi-centennial celebration. Projects occurring in potential

lynx habitat and directly or indirectly associated with the bi-centennial include: Lolo Trail Portals and Resource Protection; Weitas Butte Loop Trails; and Smithsonian Lewis and Clark Outfitted Tours. Projects for which no specific proposal has been developed (Eldorado, Lolo and Knoll Camp EISs) will not be addressed in this analysis.

Timber harvest is currently limited to developed (roaded) portions of the Forest. The Knoll Creek Bugs timber sale is immediately adjacent to a major road. No road development of designated roadless areas is being considered or implemented. Planned trail management practices are directed at maintaining existing trails and not constructing new trails. Motorized and snowmobile trail access may increase in some areas, due to improved maintenance and Forest Service administrative decisions to approve theses use on some trails. Likewise, as with some portions of the NLF, motorized access may be restricted due to resource conflicts and trail suitability for safe motorized travel. Road obliteration, though largely outside of suitable lynx habitat, would continue to benefit the restoration of Forest health (via improved water quality, reforestation and decreased motorized access).

The potential to affect lynx habitat, due to the Lewis and Clark Trail Bicentennial celebration is unclear at this time. The Clearwater National Forest is considering limiting access along this route for safety and resource protection. It is anticipated that increased human disturbance from this activity would be limited to the immediate trail corridor from July through September. The effect of current or future snowmobile access and winter recreation on lynx and lynx habitat on the CNF is unclear at this time. Actions within the NLF would not alter current conditions or management actions related to snowmobile and other winter recreation on the CNF.

Cyclic snowshoe hare populations resulting in reduced availability of this critical lynx prey would likely reduce lynx populations on the CNF. Lynx populations would be expected to recover as the snowshoe hare populations "cycle up". Severe winters would cause short-term availability of prey immediately following significant winter mortality of ungulate prey. Prey availability, however, would be less in subsequent years, until ungulate prey populations recovered. Changes in trapping regulations could impact lynx either through additional protection or increased vulnerability.

Potential gopher poisoning projects would occur outside of NLF LAUs. Only a few observations of lynx have been made on the CNF. The likelihood that a lynx, therefore, would actually encounter and consume a poisoned gopher is remote. If a lynx is discovered within the project area, the Forest would immediately consult USFWS and take special measures in administering the baiting contract.

Forest Plan/Regulatory Consistency: All alternatives comply with the Lynx Conservation Strategy Agreement by: 1) Maintaining at least 85 percent of lynx habitat in suitable conditions; 2) Retaining at least 10 percent of each LAU in denning habitat generally larger than 5 acres in area; 3) Maintaining or enhancing snowshoe hare habitat and red squirrel habitat, in proximity to denning habitat (consistent with historic landscape patterns, forest succession and disturbance regimes); and 4) Maintaining

habitat connectivity within and between LAUs, both within the NLF and adjoining the NLF to the north and east.

Sensitive Species

Sensitive species are determined by the Regional Forester (FSM 2670) and are those species for which population viability is a concern. The "sensitive" determination on individual species is based on "significant current or predicted downward trends" in 1) population numbers or density or 2) habitat capable of supporting viable population thus affecting species distribution (USDA Forest Service, 1991, FSM 2670). An updated listing of all sensitive fish and wildlife species known to occur on National Forests of Idaho within the Northern Region was issued June 1, 2001. The species list was used to help determine what species may be present in the project area or its area of influence for this project.

The following effects analysis for sensitive wildlife species addresses all planned NLF vegetation management activities within each species' habitat. Table 3-48 summarizes the findings for sensitive species based on direct, indirect and cumulative effects of the North Lochsa Face vegatative and aquatic restororation proposal.

Forest Plan Direction for Sensitive Species: The Clearwater Forest Plan includes a forest-wide goal to provide habitat for viable populations of all indigenous wildlife species (Forest Plan, p. II-2).

Status of Species within the Project Area: Table 3-48 summarizes the status of species in the project area. Those species that are not suspected because neither suitable habitat, nor species presence have been recorded are dropped from further consideration in this Supplemental EIS. The "NLF SEIS – MIS & TES Wildlife and Plants Resources Status Report" dated March 26, 2001 provides more detail on these species including habitat needs and location of habitat and populations in relation to the NLF analysis area.

Table 3-48: Status of Sensitive Species in North Lochsa Face Project Area

Sensitive Species	Status Within Project Area	Habitat Summary
Black-backed woodpecker	Suspected	Suitable habitat identified in the project area. No documented sightings in NLF.
Coeur d'Alene Salamander	Known	Suitable habitat identified in project area. Species is present
Fisher	Known	Suitable habitat identified in the project area. Sightings have been recorded.
Flammulated owl	Known	Suitable habitat identified in the project area. Sightings have been recorded.
Harlequin duck	Known	Suitable habitat identified in the project area. Sightings have been recorded.
Northern goshawk	Suspected	Suitable habitat identified in the project area. Sightings limited.
Western boreal toad	Suspected	Suitable habitat exists in the project area. Suspected

Sensitive Species	Status Within Project Area	Habitat Summary
		occurrences on the Clearwater NF.
Wolverine	Known	Suitable habitat identified in the project area. Sightings have been recorded.
Northern leopard frog	Not suspected	No suitable habitat in project area. No known or suspected occurrences on the Clearwater NF.
Townsend's big-eared bat	Not suspected	No suitable habitat in project area. No known or suspected occurrences within or adjacent to NLF or on the Clearwater NF

Black-backed Woodpecker: Existing Conditions

General Information: This year around forest resident is uncommon, even in it's preferred habitat. Source habitats include old forest stages of subalpine, montane and lower montane forests, riparian woodlands, and managed and unmanaged stands of lodgepole pine (Wisdom, et. al., Vol. 2, 57). Habitat selection relies on tree mortality and is opportunistic (i.e., the birds can occur anywhere across the landscape, during or following tree mortality events). There is no information to indicate this species is associated with specific LTAs. Burned conifer forests and other insect infested forests provide key conditions necessary for both nesting and foraging. Following fire in the northern Rocky Mountains, abundance is best correlated to the number of small snags remaining after fire.

Habitat requirements for nesting include mature and old trees infested with disease, heart rot, or in early stages of decay. Nest trees are typically dead less than 5 years, range 11" to 17" in diameter and approach 50' tall. Black-backed woodpeckers typically forage in conditions that produce both bark and wood boring beetle habitats. Both live and dead trees are used for foraging. Populations are eruptive in response to bark beetle outbreaks in recently fire-killed stands or where trees become susceptible to bark beetle attacks to maturity. Nests are typically located in stands exceeding 50 trees per acre (117 trees/ha, USDA 1998, #168).

Existing Conditions: The NLF analysis area contains limited burned or epidemic conifer insect infestations. In the absence of these features, windthrow and small patches of dead or dying trees provide habitat for this species. The NLF area, by virtue of the fire history, is capable of providing more suitable habitat for this species. Because of the nature of endemic habitats (scattered windthrow, wide variation in tree mortality from year to year and place to place), estimates of available habitat are not feasible to develop. Stands over 75 years old are likely to contain dead or dying trees meeting diameter and height features to provide endemic levels of black-backed woodpecker habitat. At least 40 percent or more of the NLF is currently suitable to support endemic populations of black-backed woodpeckers based on goshawk habitat criteria. Habitat for this species appears to be most limited (as the result of the large fires in the early 1900's) on breakland habitats in middle Pete King Creek and lower Fish Creek.

There have been no field surveys for black-backed woodpecker conducted in the NLF.

Black-backed woodpeckers are known to inhabit the Clearwater Forest. Idaho Conservation Data Center (ICDC) records for the Lochsa Ranger District indicate there are no documented sightings of black-backed woodpeckers in the NLF. This species, however, was observed in the lower Selway River drainage in 1993 (approximately 5 air miles south of, and in similar LTAs to, the NLF). Because of the presence of likely habitat and sightings on adjacent Ranger Districts, there is a high probability that black-backed woodpeckers inhabit suitable habitats within the NLF.

Black-backed Woodpecker: Environmental Consequences

Analysis Process: The effects to black-backed woodpecker were analyzed for the entire NLF analysis area. The effects are based on how various management practices affect habitat conditions. Table 3-49 describes the habitat and vegetative practices relationship.

Mixed severity burns and underburns would improve both nesting and foraging habitat by killing trees to create fire-killed snags. Nesting habitat would be retained in riparian areas and adjoining untreated patches. Except in the event of mixed to severe fire, there are no significant opportunities to improve black-backed woodpecker habitat.

Regeneration harvest, commercial thinning and off-site conversion projects would reduce endemic habitat for this species due to the removal of dead or dying trees although some snags would be retained to meet CFP standards. Nesting and foraging would be provided in default PACFISH buffers within units. Potential nesting and foraging habitat in these areas, however, would decline below current conditions.

Table 3-49: Effects on Black-backed Woodpecker Habitat

Species	Regeneration Harvest (RG)	Off-site Conversion (CN)	Commercial Thin (ST/CT)	Salvage (S)	Mixed Severity (MSB)	Underburn (UB)
Black-Backed Woodpecker	Habitat Reduction[1/]	Habitat Reduction	Habitat Reduction	Habitat Reduction	Habitat Improvement[2/]	Habitat Improvement

1/ Habitat reduction = Suitable habitat characteristics are altered by the planned action sufficient to classify the habitat unsuitable for preferred habitation until habitat features are restored via forest succession

2/ Habitat Improvement = Suitable habitat characteristics (generally prey or foraging habitats) are increased by the planned action while no substantive deterioration in other habitat characteristics (such as denning or nesting habitats) is suspected.

3/ Neutral (No Impact) = Suitable habitat characteristics (specifically denning or nesting habitat) for this species may be reduced by the planned action, while other habitat characteristics (specifically prey or foraging habitats) for this species would be improved by the planned action

4/ N/a = Area considered within existing or potential habitat for this species

Direct and Indirect Effects

Table 3-50: Available Black-backed Woodpecker Habitat

	Alt 1	Alt 2	Alt 3	Alt 3a	Alt 4	Alt 5	Alt 6
Acres Affected		+12,600	+12,600	+7,700	+700	+12,600	+12,900
Acres Remaining	1/	12,600	12,600	7,700	700	12,600	12,900
Percent Increase in Suitable Habitat		10	10	6	1	10	10

1/ Existing habitat is not modeled because estimates of available habitat are not feasible to develop due of the nature of endemic habitats (scattered windthrow, wide variation in tree mortality from year to year and place to place).

Alternative 1: would cause no direct effects to black-backed woodpecker habitat. Natural disturbance factors (insects, disease, wind and fire) would continue to influence and shape habitat distribution and availability. Advancing forest succession, increasing forest and understory density, would continue to increase endemic habitat suitability for both nesting and foraging. Alternative 1 would rely on wildfire to provide concentrated black-backed woodpecker habitat. Where wildfire is inconsequential in providing black-backed woodpecker habitat, snags created by insects, disease or tree crowding, would continue to support endemic populations.

Alternatives 2 and 3: would increase suitable black-backed woodpecker habitat by an estimated 12,600 acres through mixed severity burns and underburns. This would increase preferred snag habitat on approximately 10 percent of the NLF.

Though habitat improvement should increase local black-backed woodpecker populations, the lack of statistically sound population data would not allow detectible effects to be measured.

In the long term, with all action alternatives, black-backed woodpecker habitat is expected to increase due to planned actions. Vertical diversity (multi-storied canopy, snags, down logs, etc.) would be expected to increase, improving black-backed woodpecker habitat. Available black-backed woodpecker habitat would mirror changes in forest succession.

In the long term, without vegetative disturbances (either planned or unplanned), larger patches of older trees would increase endemic black-backed woodpecker habitat. Increased wildfire frequency and scale in the NLF would also increase suitable black-backed woodpecker habitat. Fires similar to those that burned much of the NLF in the early 1900's, though creating a pulse in available black-backed woodpecker habitat, would be unwanted events. Large-scale, infrequent wildfires would contribute to extended periods of little available habitat (endemic or episodic) due to the significantly reduced availability of snags dead less than 5 years preferred for nesting.

Alternative 3a: would increase suitable black-backed woodpecker habitat by an estimated 7700 acres through mixed severity burns and underburns. This would increase

preferred snag habitat on approximately 6 percent of the NLF.

Alternative 4: would increase suitable black-backed woodpecker habitat by an only 700 acres through mixed severity burns and underburns. This would increase preferred snag habitat on approximately 1 percent of the NLF.

Alternative 5: would increase suitable black-backed woodpecker habitat by 12,600 acres through mixed severity burns and underburns. This would increase preferred snag habitat on approximately 10 percent of the NLF.

Alternative 6: would increase suitable black-backed woodpecker habitat by 12,900 acres through mixed severity burns and underburns. This would increase preferred snag habitat on approximately 10 percent of the NLF.

Cumulative Effects: The geographic boundary for assessing cumulative effects of each alternative on blacked-backed woodpecker habitat is the NLF study area. The cumulative effects analysis boundary is based on: 1) The DFCs for blacked-backed woodpecker habitat are consistent with the disturbance regimes for potential habitats in the NLF; and 2) the NLF is sufficiently large to meet the habitat and home range needs for blacked-backed woodpecker habitat residing in the analysis area. The time frame for the cumulative effects assessment is 2012.

Present and foreseeable future management actions and natural events in the NLF study area which could effect this species include: 1) Salvage harvest implemented through the Ranger District small timber sale program; 2) Large or severe wildfires; and 3) Advancing forest succession.

Salvage timber harvest, though required to retain snag densities similar to that planned for NLF projects, would decrease endemic black-backed woodpecker habitat within treated patches. Large fires occurring within developed (road lands) is unlikely due to road access and forest fire fuel breaks created by timber harvest and roads. Small fires, however, could occur in the NLF in by 2012. It is likely that most fire-killed trees in these areas would be harvested, therefore, the black-backed woodpeckers would not benefit. Wildfires of any size, in unroaded landscapes, would benefit this species.

As tree density increases within patches, competition for growing space (nutrients, water and sunlight) would stress trees causing them to be more susceptible to insects and disease. Increased tree density and advancing tree age would promote forest conditions that increase insect, disease and tree death episodes. These conditions would improve endemic habitat conditions black-backed woodpeckers.

Based on the availability of current, potentially altered and developing habitats (within the range of desired forest conditions), the NLF is expected to remain suitable for black-backed woodpecker populations to continue to use existing habitats and thrive in burned forest patches.

Coeur d'Alene Salamander: Existing Conditions

General Information: Coeur d'Alene salamanders are typically associated with disjunct coastal biota of the Rocky Mountains primarily north of the Salmon River (Cassier et. al., 1994). This salamander is most often found in moist, forested areas at moderate elevations below 5000 feet elevation. They occur in wet, humid and cool micro-habitats where precipitation exceeds 20 inches per year. Typical habitat features are fractured bedrock or gravel, often under a dense tree canopy, near cascading water. Coeur d'Alene salamanders feed primarily on aquatic and semi-aquatic insects and are most often found in moist talus, rocky seeps, the spray zone of falls and occasionally rocky areas adjacent to small streams.

Local populations represent the most southern distribution of Coeur d'Alene salamanders. These salamanders are found generally below 2500 feet elevation in three main habitats; spring seeps, waterfall spray zones and banks of small cascading creeks. In the NLF, these salamanders are associated with the breaklands adjacent to the Lochsa River.

Existing Condition: ICDC records for the Lochsa Ranger District indicate there are numerous documented sightings of Coeur d'Alene salamanders along the Lochsa River corridor between river miles 17 and 21. This area is entirely within the NLF and the Lochsa Wild and Scenic River corridor, paralleled by US Hwy 12. One monitoring site (T34N R8E) is within the NLF and is being monitored annually (as outlined in the Conservation Strategy). While no current population levels can be set, the ongoing monitoring indicates a stable population.

Coeur d'Alene Salamander: Environmental Consequences

Direct and Indirect Effects: All alternatives, including Alternative 1, would protect riparian habitats. No direct or indirect effects to Coeur d'Alene salamanders or its habitat are expected with any alternative. Coeur d'Alene salamander habitat is not expected to benefit from, or be affected by, road obliteration and noxious weed control efforts.

Cumulative Effects

Riparian habitats where the animals might reside are fully protected from vegetative disturbance. The risk of these habitats being affected by large or severe fires by 2012 is unlikely. There are, therefore, no cumulative effects on Coeur d'Alene salamander related to NLF vegetative management, road obliteration or noxious weed control.

Fisher: Existing Conditions

General Information: Fishers are usually found in coniferous forests including diverse habitat types and successional stages. Fishers select moist habitats; characterized by dense canopy cover, in mature or late mature stands of lodgepole pine, spruce, subalpine fir grand fir or cedar. Fisher habitat use is associated (typically less than 400 m from perennial streams) with forested riparian areas (USDA, 1998, #411), often in proximity to alder glades and small meadows. They appear to prefer low gradient, north facing riparian habitats. Source habitats for fisher is characterized as montane or late-seral

coniferous forests and/or unmanaged young forest stands that contain large diameter snags and down dead wood (Wisdom, et. al., Vol. 2-46). Clearings may be used where a shrub layer is available and sufficient to provide cover. Most studies suggest that fishers are tolerant of moderate levels of human activity and that populations may be indirectly affected by removal or fragmentation of habitat. Potential effects of management activities on fisher include increased human disturbance associated with direct risk of mortality. Males typically maintain larger home ranges, encompassing one or more smaller female home ranges. Home range estimates range from 1-15 mi^2 (2.7 to 40.8 km^2) for females and 5-30 mi^2 (15.0 to 85.2 km^2) for males (Heinemeyer and Jones, 1994).

Existing Condition: Available habitat was determined fore NLF study area. The study area is sufficiently large to contain habitat for a number of fisher home ranges. The best fisher habitats on the CNF are generally associated with relatively gentle terrain, containing "low gradient" streams and riparian habitats, occurring at mid- to low elevations. Approximately 75,100 acres (60 percent of the NLF) of potentially suitable habitat occurs within the NLF analysis area.

?? 75,100 acres of potential habitat
?? 21,400 acres of existing habitat

Available fisher habitat in the NLF was modeled based on habitat preferences for conifer stands greater than 125 years or older, containing greater than 40 percent canopy cover. These stands typically contain large, old trees; snags and large, down wood for denning and hunting. An estimated 21,400 acres of stands in the NLF meet those criteria and are considered suitable fisher habitat. A significant amount of this habitat occurs within RHCAs currently managed per default PACFISH buffer guidelines.

Fisher habitat, in the NLF, is widely available in the headwaters of Canyon, Deadman and Hungery Creeks). In the Middle Butte and mid- to upper Fish and Hungery Creeks areas, however, stands affected by the large, intense fires of the early 20th century are too young to provide the large down wood associated with fisher habitat. A Forest Service survey in 1993 found multiple sets of fisher tracks in the head of Fish Creek/Mex Mountain area. However the survey was negative for fisher in the upper Canyon and Deadman Creeks area. An adult fisher was observed in the late 1980s on the watershed divide between Deadman and Fish Creeks. ICDC records for the Lochsa Ranger District indicate there are 13 documented sightings of fisher in the NLF. Most sightings have originated from fur trapper reports. Many of the reports were from incidental trap captures at lower elevations within the Lochsa River Canyon.

Fisher: Environmental Consequences

Analysis Process: The effects to fisher habitat were evaluated based on how vegetative management would affect habitat conditions. Table 3-51 describes how each treatment would affect habitat.

Fisher habitat is favored by:

- Retaining large patches of mature and late mature forest;
- Assuring the presence of large standing and down wood for denning and hunting; and
- Assuring habitats are connected by forested riparian habitat.

Planned silvicultural treatments expected to effect to current fisher habitat included regeneration harvest, off-site conversion, and commercial thin harvest prescriptions. It is uncertain whether patches treated by commercial thin would eliminate denning and foraging habitat conditions for fishers. Although live trees and snags would be retained in these stands, the value of these stands to fisher would be reduced from current conditions. For the purposes of this analysis, however, it is assumed that commercial thin would alter patch structure sufficient to discontinue as denning habitat.

Salvage harvest, mixed severity burns and underburn are expected to have mixed results on habitat. Though preferred habitat could potentially be reduced by these practices, treated patches are expected to increase standing dead and down wood for some prey species. Prescribed fire practices, however, are expected to improve rodent habitat. Rodent populations should locally increase as forest canopies are opened, promoting shrub and young tree growth. These conditions, coupled with retention of mature forest within riparian areas, may allow habitat use to continue. These practices are expected to have neutral effects because: 1) A substantial amount of live mature trees would be retained; 2) Large snags and down deadwood (per snag retention guidelines) would be retained within these patches; and 3) mature conifers in riparian habitats would be retained.

Table 3-51: Direct Effects on Fisher Habitat

Species	Regeneration Harvest (RG)	Off- Site Conversion (CN)	Commercial Thin (ST/CT)	Salvage (S)	Mixed Severity Burns (MSB)	Underburn (UB)
Fisher	Habitat Reduction	Habitat Reduction	Habitat Reduction	Neutral (No Impact)	Neutral (No Impact)	Neutral (No Impact)

1/ Habitat reduction = Suitable habitat characteristics are altered by the planned action sufficient to classify the habitat unsuitable for preferred habitation until habitat features are restored via forest succession

2/ Habitat Improvement = Suitable habitat characteristics (generally prey or foraging habitats) are increased by the planned action while no substantive deterioration in other habitat characteristics (such as denning or nesting habitats) is suspected.

3/ Neutral (No Impact) = Suitable habitat characteristics (specifically denning or nesting habitat) for this species may be reduced by the planned action, while other habitat characteristics (specifically prey or foraging habitats) for this species would be improved by the planned action

4/ N/a = Area considered within existing or potential habitat for this species

Table 3-52: Available Fisher Habitat

	Alt 1	Alt 2	Alt 3	Alt 3a	Alt 4	Alt 5	Alt 6
Acres Affected	0	2,700	2,500	2,700	2,300	2,300	2,200
Acres Remaining	21,400	18,700	18,900	18,700	19,100	19,100	19,200
Percent Affected	0	13	12	13	11	11	10

Direct and Indirect Effects

Alternative 1: would cause no direct effects to fisher habitat. Natural disturbance factors (insects, disease, wind and fire) would continue to influence and shape habitat distribution and availability. Previously harvested areas would eventually develop with advancing forest succession, providing denning and foraging habitats.

Alternatives 2 and 3a: would decrease fisher habitat by approximately 2,700 acres (13 percent of current available habitat) and would retain approximately 18,700 acres of suitable habitat. Planned disturbances would convert potential fisher denning and foraging habitats to openings. Advancing forest succession promoting larger patches of older forest would continue to restore potential denning and foraging habitats in forests burned extensively in the early 1900's. Based on the availability of current, potentially altered and developing habitats (within the range of desired forest conditions), fisher habitat in the NLF is expected to remain suitable for fisher populations to continue to thrive within existing and developing habitats. Habitat would continue to be connected because of no harvest within the riparian areas. No detectable changes on fisher populations would be noted because of the amount of existing and developing habitat remaining.

Current road and trail access restrictions and planned road obliteration have and would reduce road density in the NLF well below that of the late 1990's. The influence of human disturbance and risk of direct fisher mortality would likewise decrease.

In the long term, fisher habitat is expected to increase due to advancing forest succession. Prescribed silvicultural practices would promote more rapid tree growth (diameter and height) in younger stands of dense forest. In the long-term, vertical diversity (multi-storied canopy, snags, down logs, etc.) would be expected to increase, improving fisher habitat. Available fisher habitat would mirror changes in forest succession.

Aging and older forest stands throughout the NLF are expected increase fuel loading as forest succession advances, trees die and wildfires are suppressed. In the long term, without vegetative disturbances (either planned or unplanned), the risk of larger patches of older trees being lost as fisher habitat, due to wildfire, is expected to increase.

Alternatives 3: would decrease fisher habitat by approximately 2,500 acres (12 percent) and would retain approximately 18,900 acres of suitable habitat. Alternative 3 would have similar effects as alternatives 2 and 3a.

Alternatives 4/4a and 5: would decrease fisher habitat by approximately 2,300 acres

(11 percent) and would retain approximately 19,100 acres of suitable habitat. Alternatives 4/4a and 5 would have similar effects as alternatives 2 and 3a.

Alternatives 6: would decrease fisher habitat by approximately 2,200 acres (10 percent) and would retain approximately 19,200 acres of suitable habitat. Alternative 6 would have similar effects as alternative 2 and 3a although Alternative 6 does not harvest old growth therefore would retain all current old growth patches.

Cumulative Effects: The geographic boundary for assessing cumulative effects of each alternative on fisher habitat is the NLF study area. The cumulative effects area is based on: 1) The DFCs for fisher habitat are consistent with the disturbance regimes for potential habitats in the NLF; and 2) NLF is sufficiently large to meet the habitat and home range needs for fishers residing in the analysis area. Vegetation management projects outside, but in proximity of the NLF, either do not occur in fisher potential habitat or will be complete before activity in NLF is initiated.

Present and foreseeable future management actions and natural events in the NLF study area which could effect this species include: 1) Salvage harvest implemented through the Ranger District small timber sale program; 2) Snowmobile use and summer recreation; 3) Large or severe wildfires; and 4) Advancing forest succession.

The timber sale salvage program could locally reduce suitable denning and foraging habitat for fisher. Retention of PACFISH buffers and advancing forest succession, particularly in those habitats burned by extensive wildfires in the early 1900's, would continue to provide more fisher habitat. Snowmobile use and summer recreation use may increase on existing travel routes within fisher habitat. Since these activities neither influence the current availability of denning or foraging habitats, their cumulative effect on fisher habitat is expected to be nil.

Planned Forest Service management practices are not expected to measurably effect the distribution or availability of denning habitat, or prey availability in the NLF. Timber harvest is currently limited to developed (roaded) portions of the Forest. No road development of designated roadless areas is being considered or implemented. Planned trail management practices are directed at maintaining existing trails and not constructing new trails. The decision to restrict motorized access *(North Lochsa Face Recreation and Access Management Record of Decision, April 2000)* is being implemented. Road obliteration would benefit the restoration of Forest health (via improved water quality, reforestation and decreased motorized access).

Flammulated Owl: Existing Conditions

General Information: Flammulated owls are typically associated with large ponderosa pine and Douglas fir trees on south and western slopes. Suitable habitat varies from open, large ponderosa pine (with little under-story) to multi-layered, closed-canopy mixed Douglas fir and ponderosa pine, to mature forests. This owl preys only on insects and typically forages in the edge habitats between forest and grassland, as well as in forests of low or moderate density. Roost sites are typically in mixed conifer stands, avoiding open

stands of ponderosa pine. Breeding territories are typically located near open areas, including old burns, grassy hillsides, natural clearings and logged areas.

Flammulated owls are obligate secondary cavity nesters nesting in enlarged common flicker and pileated woodpecker cavities. Home range size appears to be influenced by the availability of forest patches that contain over-story trees and a variety of tree age classes in the understory. Topography and juxtaposition of neighboring suitable habitat influences the shape of home ranges. Territorial males have been reported to congregate in "quasi-colonies" ("clumped distribution"), leaving apparently suitable habitat vacant (USDA, 1998, #411).

?? 1,900 acres of suitable habitat
?? 22,000 acres of potentially suitable habitat

Existing Condition: Approximately 22,000 acres of the NLF is classified as high (solar) energy, thin soil breaklands. In the NLF, these sites are typically below 4,500 feet elevation and are characterized by stands of ponderosa pine and Douglas fir with inclusions of grand fir and cedar. Approximately 1,900 acres (9 percent of the high energy, thin soil breaklands in the NLF) are considered as currently suitable (mature and late mature forest types) for flammulated owl habitat. The most likely suitable flammulated owl habitats in the NLF occur in the lower 1/3 of the Canyon Creek watershed and the Lochsa River breaks from Apgar Creek to Bimerick Creek. The lack of large, old trees and/or a dense conifer understory on the preferred landtypes currently limits habitat within most of the flammulated owl's NLF range.

The lower Lochsa drainage probably represents the eastward limit of flammulated owls in the Clearwater drainage. Historically the bulk of the habitat was probably on what are now state and private lands farther downstream. The only available ICDC record indicates an "unsolicited territorial call" recorded in 1992, near Van Camp Point. Flammulated owl surveys conducted from the Van Camp Trail documented of 1 to 6 birds 1994 and 1995; none in 1996. No nests were located.

Flammulated Owl: Environmental Consequences

Analysis Process: The analysis evaluated the effects of vegetative activities on habitat needs for the flammulated owl.

Regeneration harvest and off-site conversion activities would reduce habitat for this species due to the removal of 2/3 or more of all large trees. Retention of default PACFISH buffers, however, would allow nesting and foraging to continue in these areas. Patches treated by regeneration harvest and off-site conversion projects are not expected to be suitable for potential nesting habitat.

Planned silvicultural treatments expected to effect to improve flammulated owl habitat include and commercial thin and salvage harvest, and prescribed and underburn prescriptions. Patches treated by these practices are expected to provide foraging habitat by opening forest understory and canopy. Though regeneration timber harvest is the most

intense disturbance, stand density may be too sparse for either flammulated owl nesting or foraging. This practice, therefore, was considered to reduce suitable flammulated owl habitat. Nesting habitat would be retained in riparian areas and adjoining untreated patches due to retention of: 1) A substantial amount of live mature trees within treated patches; 2) Large snags and down deadwood (per snag retention guidelines) within these patches; and 3) Retention of mature conifers in riparian habitats.

Table 3-53: Effects on Flammulated Owl Habitat

Species	Regeneration Harvest (RG)	Off-site Conversion (CN)	Commercial Thin (ST/CT)	Salvage (S)	Mixed Severity Burn (MSB)	Underburn (UB)
Flammulated Owl	Habitat Reduction	n/a[4/]	Habitat Improvement	Habitat Improvement	Habitat Improvement	Habitat Improvement

1/ Habitat reduction = Suitable habitat characteristics are altered by the planned action sufficient to classify the habitat unsuitable for preferred habitation until habitat features are restored via forest succession

2/ Habitat Improvement = Suitable habitat characteristics (generally prey or foraging habitats) are increased by the planned action while no substantive deterioration in other habitat characteristics (such as denning or nesting habitats) is suspected.

3/ Neutral (No Impact) = Suitable habitat characteristics (specifically denning or nesting habitat) for this species may be reduced by the planned action, while other habitat characteristics (specifically prey or foraging habitats) for this species would be improved by the planned action

4/ N/a = Area considered within existing or potential habitat for this species

Table 3-54: Available Flammulated Owl Habitat

	Alt 1	Alt 2	Alt 3	Alt 3a	Alt 4	Alt 5	Alt 6
Acres Affected	0	+3,500	+3,600	+4,200	+300	+3,400	+3,700
Acres Remaining	1,900	5400	5500	6100	2200	5300	5600
Percent Affected	0	+180	+190	+220	+16	+180	+195

Direct and Indirect Effects

Alternative 1: would cause no direct effects to flammulated owl habitat. Natural disturbance factors (insects, disease, wind and fire) would continue to influence and shape habitat distribution and availability. Advancing forest succession, increasing forest and understory density, would continue to decrease habitat suitability for foraging. Alternative 1 would provide an estimated 1900 of suitable habitat.

Alternative 2: would result in a net increase in currently suitable flammulated owl habitat by approximately 3,500 acres by reducing the understory and creating conditions suitable for nesting and foraging. These treatments would increase currently suitable habitat to approximately 5,400 acres out of the 22,000 acres of potential habitat. This is a 25 percent increase in patches that are suitable for flammulated owls.

Planned disturbances would improve potential flammulated owl nesting and foraging habitats by retaining default PACFISH buffers, large trees, and open understories. Habitat

quality would be substantially increased in habitats that are commercially thinned, salvaged or burned. Advancing forest succession promoting denser patches of young forest would continue to reduce habitat for this species. Based on the availability of current, potentially altered and developing habitats (within the range of desired forest conditions), the NLF is expected to remain suitable for flammulated owl populations to thrive in treated patches.

In the long term, with all action alternatives, flammulated owl habitat is expected to increase due to planned actions. Prescribed silvicultural practices would promote more rapid tree growth (diameter and height) in younger stands of dense forest. In the long-term, vertical diversity (multi-storied canopy, snags, down logs, etc.) would be expected to increase, improving flammulated owl habitat. Available flammulated owl habitat would mirror changes in forest succession.

In the long term, without vegetative disturbances (either planned or unplanned), the risk of larger patches of older trees decreasing flammulated owl habitat is likely. Also, due to Increased risk of severe wildfire, the risk of losing patches as suitable flammulated own habitat is also expected to increase.

Alternative 3: would result in a net increase suitable flammulated owl habitat by approximately 3,600 acres by reducing the understory and creating conditions suitable for nesting and foraging. These treatments would increase suitable habitat to approximately 5,500 acres out of the 22,000 acres of potential habitat.

Alternative 3a: would result in a net increase suitable flammulated owl habitat by approximately 4,200 acres by reducing the understory and creating conditions suitable for nesting and foraging. These treatments would increase suitable habitat to approximately 6,100 acres out of the 22,000 acres of potential habitat.

Alternative 4/4a: would result in a net increase suitable flammulated owl habitat by approximately 300 acres by reducing the understory and creating conditions suitable for nesting and foraging. These treatments would increase suitable habitat to approximately 2,200 acres out of the 22,000 acres of potential habitat.

Alternative 5: would result in a net increase suitable flammulated owl habitat by approximately 3,400 acres by reducing the understory and creating conditions suitable for nesting and foraging. These treatments would increase suitable habitat to approximately 5,300 acres out of the 22,000 acres of potential habitat.

Alternative 6: would result in a net increase suitable flammulated owl habitat by approximately 3,700 acres by reducing the understory and creating conditions suitable for nesting and foraging. These treatments would increase suitable habitat to approximately 5,600 acres out of the 22,000 acres of potential habitat.

Cumulative Effects: The geographic boundary for assessing cumulative effects of each alternative on flammulated owl habitat is the NLF study area. The cumulative effects analysis for flammulated owl habitat is based on: 1) The DFCs for flammulated owl habitat are consistent with the disturbance regimes for potential habitats in the NLF; 3)

NLF is sufficiently large to meet the habitat and home range needs for flammulated owl habitat residing in the analysis area. The time frame for the cumulative effects assessment is 2012.

Present and foreseeable future management actions and natural events in the NLF study area which could effect this species include: 1) Salvage harvest implemented through the Ranger District small timber sale program; 2) Large or severe wildfires; and 3) Advancing forest succession.

Salvage timber harvest in potentially suitable flammulated owl habitat would likely open the forest understory while maintaining large trees for nesting. If the purpose of the salvage were to harvest commercial timber following a fire, the availability of large, live trees would determine whether suitable habitat remained following the fire, to support flammulated owls. If the fire were low to mixed severity, the likelihood of flammulated own habitat be present is good. Timber salvage of dead trees could be expected to improve habitat. If large trees were absent or scarce following the fire, it is likely that suitable flammulated owl habitat is not present and timber salvage would have no impact on this species. Timber salvage is, however, expected to be limited on breakland habitats, as these habitats are typically managed with stand replacing or mixed severity treatments (northerly aspects) or low to mixed severity treatments (southerly aspects).

Large fires occurring within potential flammulated owl habitat by 2012 are possible. Existing fuel conditions, however, are not believed conducive to fires much larger than would have occurred under historic fire regimes. Fires that do occur, however, could possibly be more intense than historically occurred, due higher tree density than historically occurred. Small fires are likely to occur in the potential flammulated owl habitat by 2012. It is possible that some fire-killed trees in these areas would be harvested. Forest succession on untreated sites currently or potential suitable for flammulated owl habitat would advance under all alternatives. In most cases, forest overstories or understories are believed too dense for flammulated owls to be used as preferred foraging or nesting habitats. Advancing forest succession, without disturbance, is likely to degrade habitat suitability for this owl.

Harlequin Duck: Existing Conditions

Harlequin ducks are diving ducks that winter along the Pacific coast and migrate inland to nest along forested, mountain streams (Cassier and Groves, 1991).

These ducks prefer canyon channel types but also use meandering and braided channel types. The preferred dominant stream bank vegetation is typically willows or red osier dogwood. They are known to use streams where the dominant stream bank vegetation is primarily trees. Physical features such as stream bank vegetation and stream gradient are key to nesting and brood-rearing habitat. Undisturbed, pristine areas with these attributes are considered prime nesting and brood-rearing areas. Specific habitat requirements include streams with less than 3 percent gradient and more than 50 percent shrub cover along the stream. They nest in wood debris, logjams and root overhangs in stream banks.

ICDC records for the Lochsa Ranger District indicate there are numerous documented sightings of harlequins along the middle and upper Lochsa River. Harlequin pairs were confirmed along both streams. Since 1992, a number of sightings have been reported for the Forest on the Lochsa River and major tributaries including Fish Creek. The primary habitat and use, however, appears to be in the upper reaches of the Lochsa River habitats on the Powell Ranger District.

Forest road 462 (Lower Fish Creek Road) parallels the lower 1-mile of mainstem Fish Creek. The Fish Creek Trail (TR 224), parallels lower Fish Creek for approximately 7 miles, with approximately 30 to 50 percent of the trail being within 300' of the mainstem of Fish Creek. A fish trap has been annually placed across Fish Creek between April and June, approximately 1 mile from the confluence with the Lochsa River. This trap has been managed by the Idaho Department of Fish and Game. Fish and Game employees have observed harlequin ducks flying past the fish trap facility. Enroute to breeding habitats in central Idaho, they are known to migrate past eight hydroelectric dams and at least 17 highway bridges. Their migration route intersects major metropolitan areas and parallels portions of the interstate and federal highway systems. They are suspected to migrate at night and freely travel parallel to US Highway 12. In the spring, recreational boaters on the Lochsa River often observe them. Based on observations by field biologists it appears the birds has adapted to constant highway vehicle or recreation float boat traffic. They are, however, very wary and will usually fly to avoid humans who have stopped within view of the bird.

Human use along the mainstem of Fish Creek is considered light during May and early June, and is largely limited to hunters pursuing bear on the breaklands. The stream bank is densely vegetated with shrubs, restricting human passage (disturbance) and use during high water (May/June). White water kayaking has been reported to sporadically occur along the lower mile of mainstem Fish Creek. Fire rarely affects riparian habitat. With the exception of episodic events (floods, landslides and infrequent, but severe fires), habitats for the species are relatively stable.

Harlequin Duck: Environmental Consequences

Direct and Indirect Effects: All alternatives, including Alternative 1, would protect riparian habitats. No direct or indirect effects to Coeur d'Alene salamanders or its habitats are expected with any alternative. Planting conifers riparian areas along middle and lower Fish Creek could eventually improve nesting and brood rearing conditions for harlequin ducks. Harlequin duck habitat is not expected to benefit from, or be affected by, road obliteration and noxious weed control efforts. In the long-term, aging and older forest stands throughout the NLF are expected increase fuel loading as forest succession advances, trees die and wildfires are suppressed. In the long term, without vegetative disturbances (either planned or unplanned), the risk of large, intense fires killing most conifers in affected riparian habitats would be expected to increase.

Cumulative Effects: Riparian habitats where the animals might reside are fully protected from vegetative disturbance. The risk of these habitats being affected by large or severe fires by 2012 is unlikely. There are, therefore, no cumulative effects on the

harlequin duck related to NLF vegetative management, road obliteration or noxious weed control.

Northern Goshawk: Existing Conditions

General Information: Northern goshawks prefer mature timber stands with dense canopy cover (USDA, 1998, #70). Permanent water sources, stands of dense timber (conifers) and mature forest edge appear to be significant factors associated with northern goshawk territory selection. Riparian zones, meadows or natural ecotones also appear important in affecting fidelity to previously selected territories. They apparently seek areas beyond the nest that have a higher basal area, greater canopy closure and more trees per acre. Because of this tendency, it may be difficult for this forest-adapted raptor to compete with raptors that do well in open environments.

Northern goshawk territories can include up to 5000 acres of suitable habitat (Warren, 1990). Northern goshawks typically nest in stands of mature or late mature forest that are larger than 25 acres and have 60 to 80 percent crown closure. They are known to reproduce regardless of the proportion of late mature forest in their range. However, stands of late mature forest or dense, mature conifers appear to be important for habitat diversity within all home ranges. Nests are typically constructed below the upper canopy on limbs supported by one of the largest trees in the stand. Loss of breeding habitat is implicated to be the most critical factor affecting habitat suitability. Northern goshawks typically feed on a variety of forest dwelling mammals and birds ranging in size from snowshoe hares to chipmunks. They are best suited to hunting near the ground or forest edge, especially during nesting season.

Contemporary literature suggests goshawks typically nest in mature or old forest with a closed canopy, on slopes less than 35 percent, and northerly aspects. Six active nests and two probable active nests have been observed in the analysis area. These nests were located on north, west, south and east aspects. They were located on old land surfaces with gentle terrain, to colluvial midslopes and steep breaklands. One nest was located in a stand that had been selectively logged; another within 40 yards of a main forest road. Though most were located in large trees within mature stands, one nest was located in an immature (76+ years) stands. For these reasons, it is believed that data is insufficient in central Idaho to suggest that potential goshawk nest habitat be characterized by mature forest, on gentle north aspects.

Existing Condition: Forest stands within the NLF study area are typically mixed conifer in warm, moist habitats. Water is common in most well defined draws throughout the NLF study area. Landtype groups typified by relatively warm, moist habitats at mid- low elevations were selected as being characteristic of northern goshawk habitats.

The best habitats for northern goshawk habitats on the CNF are generally associated with relatively dense forests at mid- to low elevations. Stands suitable for nesting and foraging generally occur forest stands at 75 years or older, with greater than 40 percent canopy closure.

?? 122,000 acres of potentially suitable habitat
?? 48,200 acres of existing suitable habitat

Approximately 122,000 acres (96 percent of the NLF) of the NLF analysis area is potentially capable of providing forest conditions suitable for northern goshawk habitat. Of this amount, approximately 48,200 acres of forested stands in the NLF currently meet criteria suitable for northern goshawk nesting and foraging. These forest stands are generally below 5000 feet elevation and are typified by closed stands of cedar and grand fir, with remnants of large Douglas fir, ponderosa pine and western larch.

ICDC records indicate no documented sightings of goshawk in the NLF. Two nest sites, however, were reported in NLF 1993 (Chitwood Mine and mid-Canyon Creek). Follow-up visits in 1994 failed to relocate the nest at Chitwood Mine. Follow-up to the mid-Canyon nest in 1995 confirmed the nest site had been abandoned. Though reports are limited, there is a high probability that goshawks inhabit the NLF.

Northern Goshawk: Environmental Consequences

Forest management practices that improve northern goshawk habitat include those that retain some large trees in the overstory, while opening the understory for hunting. Commercial thinning and group selection timber harvest, low to mixed severity burns, and combinations of these practices would improve hunting habitat for this species. Retention of dense forest patches at least 25 acres in area, are important for providing nesting habitat.

Planned silvicultural treatments that could affect current northern goshawk habitat include regeneration harvest; off-site conversion; and commercial thin; and salvage harvest prescriptions. It is uncertain whether patches treated by salvage harvest would eliminate nesting habitat conditions for northern goshawks. Field biologists have observed and documented an active goshawk nest 1999 (Salmon Ridge above Dworshak Reservoir) in a mature tree occurring within a commercial thin area. For the purposes of this analysis, however, it is assumed that commercial thin and salvage would alter patch structure sufficient to discontinue as potential northern goshawk nesting habitat. Although live trees and snags would be retained in all these stands, their value to goshawk for nesting and rearing would be reduced from current conditions. Most of these stands, however, are expected to be suitable for hunting (with numerous perches in stands with and open understory).

Prescribed fire is expected to have mixed results on northern goshawk habitat. Though nesting habitat by mixed severity fire could reduce nesting habitat, both mixed severity burns and underburns are expected to significantly improve habitat for some prey species. These conditions, coupled with retention of mature forest within riparian areas, may allow nesting to continue in patches treated with prescribed fire. Patches treated by these

practices, however, are expected to continue to provide foraging habitat for northern goshawks. Prescribed fire, both mixed severity burns and underburns is expected to have a neutral effect on northern goshawk habitat because: 1) A substantial amount of live mature trees for perching would be retained; 2) they create an open understory for hunting; and 3) they retain mature conifers in riparian habitats.

Management practices that incorporate more typical forest disturbance frequency, intensity and size, would accommodate northern goshawk habitat. Specifically, northern goshawk habitat in central Idaho is favored by:

- Retaining dense patches maturing conifer forest; and
- Assuring the presence of large trees for nesting and hunting.

Table 3-55: Effects on Northern Goshawk Habitat

Species	Regeneration Harvest (RG)	Forest Type Conversion (CN)	Commercial Thin (ST/CT)	Salvage (S)	Mixed Severity Burn (MSB)	Underburn (UB)
Goshawk	Habitat Reduction	Habitat Reduction	Habitat Reduction	Habitat Reduction	Neutral (No Impact)	Neutral (No Impact)

1/ Habitat reduction = Suitable habitat characteristics are altered by the planned action sufficient to classify the habitat unsuitable for preferred habitation until habitat features are restored via forest succession

2/ Habitat Improvement = Suitable habitat characteristics (generally prey or foraging habitats) are increased by the planned action while no substantive deterioration in other habitat characteristics (such as denning or nesting habitats) is suspected.

3/ Neutral (No Impact) = Suitable habitat characteristics (specifically denning or nesting habitat) for this species may be reduced by the planned action, while other habitat characteristics (specifically prey or foraging habitats) for this species would be improved by the planned action

4/ N/a = Area considered within existing or potential habitat for this species

Table 3-56: Available Northern Goshawk Habitat

	Alt 1	Alt 2	Alt 3	Alt 3a	Alt 4	Alt 5	Alt 6
Acres Affected	0	5,000	4,600	4,900	3,500	3,500	4,200
Acres Remaining	48,200	43,200	43,600	43,300	44,700	44,700	44,000
Percent Affected	0	10	10	10	7	7	9

Direct and Indirect Effects

Alternative 1: would cause no direct effects to northern goshawk habitat. Natural disturbance factors (insects, disease, wind and fire) would continue to influence and shape habitat distribution and availability. Previously harvested areas would eventually develop with advancing forest succession, providing nesting and foraging habitats. Alternative 1 would retain an estimated 40 percent (48,200 acres) of the northern goshawk habitat within the range of potential habitat area (122,000 acres) in the NLF;

Alternative 2: would decrease potentially available northern goshawk nesting habitat by approximately 5000 acres (10% of current available habitat). The largest reductions in northern goshawk habitat would occur, as with pileated woodpecker habitat, in the Walde and upper Canyon Creek watersheds. This general area contains a significant amount of suitable northern goshawk nesting habitat. Significant patches of suitable habitat, however, would continue to be retained in all major watersheds (including elsewhere in Walde Creek) and well represented throughout most elevations within the NLF. In all alternatives, northern goshawk habitat in the Canyon and upper Canyon Creek watersheds is expected to meet or exceed historic conditions for this species.

Planned disturbances would convert potential northern goshawk nesting and foraging habitats to openings. Advancing forest succession promoting larger patches of older forest would continue to restore potential nesting habitats in forests burned extensively in the early 1900's. Based on the availability of current, potentially altered and developing habitats (within the range of desired forest conditions), the NLF is expected to remain suitable for northern goshawk populations to thrive in maturing forest habitats.

In the long term, with all alternatives, northern goshawk nesting habitat is expected to increase due to advancing forest succession. Prescribed silvicultural practices would promote more rapid tree growth (diameter and height) in younger stands of dense forest. In the long-term, vertical diversity (multi-storied canopy, snags, down logs, etc.) would be expected to increase, improving northern goshawk nesting and foraging habitat. Available northern goshawk habitat would mirror changes in forest succession.

The greatest increase in both habitat availability and distribution is be expected to occur on breaklands, as forest patches created by the large fires in the mid-20th century age and expand. Aging and older forest stands throughout the NLF are expected increase fuel loading as forest succession advances, trees die and wildfires are suppressed. In the long term, without vegetative disturbances (either planned or unplanned), the risk of larger patches of older trees being lost as northern goshawk habitat, due to wildfire, is expected to increase.

Alternative 3: would decrease habitat by approximately 4600 acres (10 percent of current available habitat). Effects would be similar to Alternative 2.

Alternative 3a: would decrease habitat by approximately 4900 acres (10 percent of current available habitat). Effects would be similar to Alternative 2.

Alternatives 4/4a and 5: would decrease habitat by approximately 3500 acres (7 percent of current available habitat). Effects would be similar to Alternative 2.

Alternative 6: would decrease northern goshawk habitat by approximately 4200 acres (9 percent of current available habitat). Effects would be similar to Alternative 2.

Cumulative Effects: The geographic boundary for assessing cumulative effects of each alternative on northern goshawk habitat is the NLF study area. The cumulative effects analysis for northern goshawk habitat is based on: 1) The DFCs for northern goshawk habitat are consistent with the disturbance regimes for potential habitats in the NLF; and

2) NLF is sufficiently large to meet the habitat and home range needs for northern goshawks residing in the analysis area.

Present and foreseeable future management actions in the NLF study area which could effect this species include: 1) Salvage harvest implemented through the Ranger District small timber sale program; 2) Large or severe wildfires; 3) Advancing forest succession; and 4) Summer recreation.

All timber harvest activities are likely to locally reduce suitable nesting habitat northern goshawk. Though treated stands would retain large trees and snags, nesting value would be reduced for at least 75 years. Large or severe wildfires would reduce useable goshawk habitat. The likelihood of large, severe wildfires would be reduced by the planned actions. Advancing forest succession, particularly in those habitats burned by extensive wildfires in the early 1900's, would continue to improve the distribution of potential northern goshawk habitat. Summer recreation use may increase on existing travel routes within northern goshawk habitat. Since these activities neither influence the current availability of nesting or foraging habitats, their cumulative effect on northern goshawk habitat is expected to be nil.

Western (Boreal) Toad: Existing Conditions

General Information: Adult toads are largely terrestrial and occur from sea level to high mountains, including northern deserts (USDA 1998 #9). They are nocturnal during dry weather, but forage during daylight on rainy or overcast days. Optimal habitat conditions in more humid regions are believed to occur with moderate to dense undergrowth. At least some toads hibernate in terrestrial situations. In montane areas, they utilize spring pools, ponds, lake shallows, and slow-moving portions of streams. They prefer mud-bottomed shallows of lakes and ponds.

Western toads reproduce from spring or early summer in higher montane situations. Sexually mature toads move to water for breeding. Eggs are laid in shallow water and tadpoles most frequently found in protected areas along shallow, gently sloping shorelines, or fine substrate types, in high temperature areas. Females produce an average of 12,000 eggs per clutch, usually a week or less. Time of hatching is fairly and depends on water temperature. Young tadpoles typically congregate over muddy bottoms where they feed suspended plant material or detritus. Characteristically, they form dense swarms during the day and move from place to place. They may also move in smaller schools. Tadpoles generally seek areas of warmer temperatures, thus speeding metamorphosis.

Birds, garter snakes and predaceous insect larvae prey upon tadpoles and young toads. It is believed that mortality between egg-laying and the return of adults two or three years later is well over 99 percent. Adult toads may live for several years, as their skin secretions are highly distasteful to would-be predators. Western toads eat flying insects, spiders, crayfish, sowbugs and earthworms. Given available breeding water, they are known to adapt well to agricultural irrigation and residential areas. Like many other amphibians, they are sensitive to environmental changes caused by loss of wetlands. This

toad is now uncommon in mountain meadows.

Existing Condition: The most likely areas that meet breeding habitat characteristics in the NLF are beaver ponds in headwater streams. These conditions occur in upper Deadman and Bimerick Creek drainages. There are suspected occurrences of western toads on the CNF. Because of suspected available habitat, despite no recent documented sightings within or adjacent to the NLF, there is a high probability that western toads inhabit the NLF.

Western (Boreal) Toad: Environmental Consequences

Direct and Indirect Effects: All alternatives, including Alternative 1, would protect riparian habitats. No direct or indirect effects to western toad or its respective habitats are expected with any action alternative because their habitat is avoided through the use of PACFISH buffers.

Cumulative Effects: Riparian habitats where the animals might reside are fully protected from vegetative disturbance therefore there are no short-term effects. In the long-term, aging and older forest stands throughout the NLF are expected increase fuel loading as forest succession advances, trees die and wildfires are suppressed. In the long term, without vegetative disturbances (either planned or unplanned), the risk of large, intense fires killing most conifers in affected riparian habitats would be expected to increase.

Wolverine: Existing Conditions

General Information: Wolverines typically inhabit large areas of medium or scattered mature timber and ecotonal areas around slides, cliffs, swamps and meadows. Habitat types used by wolverines include sub-alpine fir, lodgepole pine, western larch, Douglas fir and mixed conifer. Wolverines rarely utilize dense young timber stands, burned over areas or wet meadows (USDA 1998 #417).

Wolverines are habitat generalists. They typically inhabit remote mountainous areas where human disturbance is unlikely. Source habitats include all structural stages of alpine tundra and all subalpine montane forests. Within these forest types, all structural stages except the closed stem exclusion stage provide source habitat (Wisdom, et. al., Vol. 2-74). The typically winter at approximately 4500 feet elevation and summer at elevations exceeding 6000 feet. Wolverines appear to favor NE to SW aspects (USDA 1998 #417). They are omnivorous and opportunistic scavengers, taking advantage of food sources that are easily obtained. Wolverines prey on deer and elk, other mustelids, snowshoe hare, small mammals and birds. They also feed on carrion, insects and berries and often cache their food in trees or under snow and ice. Though known to travel long distances, they often exhibit fidelity to a certain area. Male home ranges average about $163m^2$; female home ranges averaged approximately $150m^2$.

Existing Condition: The best wolverine habitats on the CNF are generally associated with conifer stands over 75 years old, and NE-SW aspects above 4500' elevation. Approximately 29,700 acres of land within the NLF is on NE-SW aspects above 4500' elevation. Of this, approximately 15,100 acres (50+ percent of the range) are considered suitable (seasonal or intermittent) wolverine habitat (immature, mature and late mature forest types).

?? 15,100 acres of currently suitable habitat
?? 29,700 acres of potentially suitable habitat

ICDC records (March 2000) for the Lochsa Ranger District indicate there are three documented sightings of wolverine in the NLF. Two other wolverine sightings are documented north of the NLF in the Lolo Creek watershed. All NLF sightings were reported east of Deadman Creek and in the Fish Creek watershed. Although sighting reports are sporadic and limited, the presence of these sightings indicates a moderate probability that wolverines inhabit the NLF.

The habitat most likely to support wolverine is largely restricted to the major ridges of the NLF that border the Fish Creek watershed. Roads used by highway vehicles in snow-free periods of the year and snowmobiles during the winter transect these ridges. Opportunities for wolverine to avoid human disturbance may be affected by motorized use on these roads.

Wolverine: Environmental Consequences

Management practices that incorporate more typical forest disturbance frequency, intensity and size, would accommodate wolverine habitat. Specifically, wolverine habitat is favored by:

- Retaining patches of mature forest for denning;
- Assuring the presence of large standing and down wood for denning and hunting;
- Assuring a variety of prey habitats are connected by cover and forested riparian habitats; and
- Managing human access into suitable habitats.

Planned silvicultural treatments expected to effect to current wolverine habitat included regeneration harvest; off-site conversion; and commercial thin harvest prescriptions. It is uncertain whether patches treated by commercial thin would eliminate denning habitat conditions for wolverines. For the purposes of this analysis, however, it is assumed that commercial thin would alter patch structure sufficient to discontinue as denning habitat. Although live trees and snags would be retained in these stands, the value of these stands to wolverine would be reduced from current conditions.

Salvage harvest is expected to have mixed effects (possibly reducing denning habitat while increasing prey habitats). Mixed severity burns and underburns are expected to retain opportunities for denning habitat, while improving prey habitat. Rodent populations should locally increase as forest canopies are opened, promoting shrub and

young tree growth. Treated patches are expected to increase standing dead and down wood for some prey species. These conditions, coupled with retention of mature forest within riparian areas, is likely retain suitable denning habitat.

Table 3-57: Effects on Wolverine Habitat

Species	Regeneration Harvest (RG)	Forest Conversion (CN)	Commercial Thin (ST/CT)	Salvage (S)	Mixed Severity Burn (MSB)	Underburn (UB)
Wolverine	Habitat Reduction	Habitat Reduction	Habitat Reduction	Neutral (No Impact)	Habitat Improvement	Habitat Improvement

1/ Habitat reduction = Suitable habitat characteristics are altered by the planned action sufficient to classify the habitat unsuitable for preferred habitation until habitat features are restored via forest succession

2/ Habitat Improvement = Suitable habitat characteristics (generally prey or foraging habitats) are increased by the planned action while no substantive deterioration in other habitat characteristics (such as denning or nesting habitats) is suspected.

3/ Neutral (No Impact) = Suitable habitat characteristics (specifically denning or nesting habitat) for this species may be reduced by the planned action, while other habitat characteristics (specifically prey or foraging habitats) for this species would be improved by the planned action

4/ N/a = Area considered within existing or potential habitat for this species

Table 3-5: Available Habitat for Selected Sensitive Wildlife Species

	Alt 1	Alt 2	Alt 3	Alt 3a	Alt 4	Alt 5	Alt 6
Acres Affected	0	600	0	600	-500	700	600
Remaining Habitat	15,100	15,700	15,700	15,000	14,500	15,800	15,700
Percent Affected	0	+4	0	+4	-3	+5	+4

Direct and Indirect Effects

Alternative 1: would cause no direct effects to wolverine habitat. Natural disturbance factors (insects, disease, wind and fire) would continue to influence and shape habitat distribution and availability. Previously disturbed areas would eventually develop with advancing forest succession, providing denning and foraging habitats. Alternative 1 would retain an estimated 15,100 acres (51 percent) of the currently suitable habitat.

In the long term, wolverine habitat is expected to increase due to advancing forest succession. Prescribed silvicultural practices would promote more rapid tree growth (diameter and height) in younger stands of dense forest. In the long-term, vertical diversity (multi-storied canopy, snags, down logs, etc.) would be expected to increase, improving wolverine prey habitat. Available wolverine habitat would mirror changes in forest succession.

Aging and older forest stands throughout the NLF are expected increase fuel loading as forest succession advances, trees die and wildfires are suppressed. In the long term, without vegetative disturbances (either planned or unplanned), the risk of larger patches

of older trees being lost as wolverine habitat, due to wildfire, is expected to increase.

Alternatives 2 and 3a: would increase suitable wolverine habitat by approximately 600 acres (+4 percent of current available habitat). Planned disturbances would convert potential wolverine denning and foraging habitats to openings. Advancing forest succession promoting larger patches of older forest would continue to restore potential denning and foraging habitats in forests burned extensively in the early 1900's. Based on the availability of current, potentially altered and developing habitats (within the range of desired forest conditions), the NLF is expected to remain suitable for wolverine populations to continue to thrive within existing and developing habitats.

In the long term, wolverine habitat is expected to increase due to advancing forest succession. Prescribed silvicultural practices would promote more rapid tree growth (diameter and height) in younger stands of dense forest. In the long-term, vertical diversity (multi-storied canopy, snags, down logs, etc.) would be expected to increase, improving wolverine prey habitat. Available wolverine habitat would mirror changes in forest succession.

Aging and older forest stands throughout the NLF are expected increase fuel loading as forest succession advances, trees die and wildfires are suppressed. In the long term, without vegetative disturbances (either planned or unplanned), the risk of larger patches of older trees being lost as wolverine habitat, due to wildfire, is expected to increase.

Alternative 3: would have no net effect on wolverine habitat remaining at 15,100 acres. Natural disturbance factors (insects, disease, wind and fire) would continue to influence and shape habitat distribution and availability. Previously disturbed areas would eventually develop with advancing forest succession, providing denning and foraging habitats. Alternative 3 would retain an estimated 15,100 acres (51 percent) of the currently suitable habitat.

In the long term, wolverine habitat is expected to increase due to advancing forest succession. Prescribed silvicultural practices would promote more rapid tree growth (diameter and height) in younger stands of dense forest. In the long-term, vertical diversity (multi-storied canopy, snags, down logs, etc.) would be expected to increase, improving wolverine prey habitat. Available wolverine habitat would mirror changes in forest succession.

Aging and older forest stands throughout the NLF are expected increase fuel loading as forest succession advances, trees die and wildfires are suppressed. In the long term, without vegetative disturbances (either planned or unplanned), the risk of larger patches of older trees being lost as wolverine habitat, due to wildfire, is expected to increase.

Alternative 4/4a: would decrease suitable wolverine habitat by approximately 500 acres (-3 percent). Natural disturbance factors (insects, disease, wind and fire) would continue to influence and shape habitat distribution and availability. Previously disturbed areas would eventually develop with advancing forest succession, providing denning and foraging habitats. Alternative 3 would retain an estimated 15,100 acres (51 percent) of

the currently suitable habitat.

In the long term, wolverine habitat is expected to increase due to advancing forest succession. Prescribed silvicultural practices would promote more rapid tree growth (diameter and height) in younger stands of dense forest. In the long-term, vertical diversity (multi-storied canopy, snags, down logs, etc.) would be expected to increase, improving wolverine prey habitat. Available wolverine habitat would mirror changes in forest succession.

Aging and older forest stands throughout the NLF are expected increase fuel loading as forest succession advances, trees die and wildfires are suppressed. In the long term, without vegetative disturbances (either planned or unplanned), the risk of larger patches of older trees being lost as wolverine habitat, due to wildfire, is expected to increase.

Alternative 5: would increase suitable wolverine habitat by approximately 700 acres (+5 percent). Effects would be similar to Alternatives 2 and 3a.

Alternative 6: would decrease wolverine habitat by approximately 600 acres (+4 percent). Effects would be similar to Alternatives 2 and 3a.

Road access would decline Alternatives 2 through 6, due to planned obliteration of unneeded roads. This would benefit wolverine habitat by reducing the risk of human disturbance.

Cumulative Effects: The following projects are considered for the wolverine habitat cumulative effects analysis because their home range requirements could extend beyond the NLF. Present and foreseeable future management actions within the vicinity of the NLF study area include: Knoll Creek Bugs and Four Dollar Salvage timber sales; Swan Creek Fuels; NiMiiPu Connector Trail construction; Snowmobile Trail Grooming Roads 500, 103, 104; pocket gopher poisoning in young forest plantations; and Mex Mountain Work Center Winter Outfitter Rental. The following discussion also recognizes that the possibility of significant increases in summer recreation use on the margins of the NLF on Road 500, in response to the approaching Lewis and Clark Bi-centennial celebration. Projects directly or indirectly associated with the bi-centennial include: Lolo Trail Portals and Resource Protection; Weitas Butte Loop Trails; and Smithsonian Lewis and Clark Outfitted Tours. Projects for which no specific proposal has been developed (Eldorado, Lolo and Knoll Camp EISs) will not be addressed in this analysis.

Because of their proximity to major forest roads, the Four Dollar Salvage and Knoll Creek Bugs Timber sales are not expected to effect wolverine denning habitat. These projects, however, would improve habitat for some species of wolverine prey (snowshoe hares and big game).

The potential to affect wolverine habitat, due to the Lewis and Clark Trail bi-centennial celebration is unclear at this time. The CNF is considering limiting access along this route for safety and resource protection. It is anticipated that increased human disturbance from this activity would be limited to the immediate trail corridor from July through September. The effect of current or future snowmobile access and winter

recreation on wolverine and wolverine habitat on the CNF is unclear at this time. Actions within the NLF would not alter current conditions or management actions related to snowmobile recreation on the CNF. All action alternatives would reduce road density, thereby reducing potential influence of human access on wolverines, by via the obliteration of unneeded forest roads.

Potential gopher poisoning projects would occur in roaded portions of the forestscape. Wolverines typically avoid human disturbance, such as roaded landscapes. Only a few observations of wolverine have been made on the CNF. The likelihood that a wolverine, therefore, would actually encounter and consume a poisoned gopher is remote. If a wolverine is discovered within the project area, the Forest would immediately take special measures in administering the baiting contract.

Planned Forest Service management practices are not expected to measurably effect the distribution or availability of denning habitat, or prey availability in the NLF. Timber harvest is currently limited to developed (roaded) portions of the Forest. No road development of designated roadless areas is being considered or implemented. Planned trail management practices are directed at maintaining existing trails and not constructing new trails. The decision to restrict motorized access *(North Lochsa Face Recreation and Access Management Record of Decision (April 2000)* is being implemented. Road obliteration would benefit the restoration of Forest health (via improved water quality, reforestation and decreased motorized access).

Severe winters would cause short-term availability of prey immediately following significant winter mortality of ungulate prey. Prey availability, however, would be less in subsequent years, until ungulate prey populations recovered. Changes in trapping regulations could impact wolverine via additional protection or increased venerability.

Forest Plan Consistency For Sensitive Species: All alternatives are consistent with Forest Plan direction and manual direction regarding sensitive species management. Table 3-59 summarizes the effects to sensitive species by alternative. Although habitat for some species may be reduced in the short term, adequate habitat would be retained to provide for those species needs. In addition, long-term habitat conditions would improve as younger patches age, and the risk of intense, lethal fires are reduced.

Table 3-59: Summary of Findings by Alternative

Species	Alt 1	Alt 2	Alt3	Alt 3a	Alt 4/4a	Alt 5	Alt 6
Black-backed Woodpecker	No Impact	Beneficial	Beneficial	Beneficial	Beneficial	Beneficial	Beneficial
Couer d'Alene Salamander	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Fisher	No Impact	May Impact	May Impact	May Impact	May Impact	May Impact	May Impact
Flammulated Owl	No Impact	Beneficial	Beneficial	Beneficial	Beneficial	Beneficial	Beneficial
Harlequin Duck	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Northern Goshawk	No Impact	May Impact	May Impact	May Impact	May Impact	May Impact	May Impact
Western (Boeral) Toad	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Wolverine	No Impact	Neutral	Neutral	Neutral	May Impact	Neutral	Neutral

Beneficial Impact – overall habitat conditions are improved
No Impact – No changes to habitat conditions
May Impact – May impact individuals or habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species
Neutral - The effects of proposed vegetative management practices on wolverine and wolverine habitat are mixed. Reduced human access, as the result of road obliteration, is expected to benefit wolverine, by reducing the influence of human access into otherwise suitable wolverine habitats.