# Whyte Project Biological Assessment

## Executive Summary

This Biological Assessment (BA) documents the potential effects on federally proposed, candidate, threatened or endangered species and designated critical habitat that could result from proposed vegetation management project and associated activities as documented in the Whyte Preliminary Effects Analysis (PEA, USDA Forest Service 2006). The BA tiers to the Programmatic Biological Assessment for the revision of the Forest Plan (USDA Forest Service 2004, pp. 6-7) and provides more specific information on site-specific effects of the project to threatened and endangered species.

The findings (determination of effect) of Alternative 1 (the action with the most potential for effects) along with Alternatives 2 and 3 are summarized in Table 1, below.

**Table 1. Determination of Effects of Alternative 1, 2 and 3**

| Species | Alt 1 | Alt 2 | Alt 3 | Rationale |
|---|---|---|---|---|
| Bald eagle | NLAA | NLAA | NLAA | Nesting habitat is protected and human disturbance factors minimized through mitigations. Actions include nesting habitat improvements. |
| Gray wolf | NLAA | NLAA | NLAA | Human disturbance factors are minimized; prey habitat is maintained and improved. |
| Critical habitat | NLAA | NLAA | NLAA | Human disturbance factors are minimized, prey habitat is maintained and improved, and wolf habitat would be maintained or improved. |
| Canada lynx | NLAA | NLAA | NLAA | Human disturbance factors would be minimal, adequate habitat is maintained, and prey habitat improvements would take place. |

NLAA = Not likely to adversely affect
LAA = Likely to adversely affect
NAM = No adverse modification

# 1.0 Introduction

This Biological Assessment (BA) documents the potential effects on federally proposed, candidate, threatened or endangered species and designated critical habitat that could result from proposed vegetation management project and associated activities as documented in the Whyte Preliminary Environmental Assessment (USDA Forest Service 2006).

This BA was prepared in compliance with the requirements of Forest Service Manual Directives sections 2670.31, 2670.5(3), and 2672.4, the Endangered Species Act of 1973 as amended, and the National Forest Management Act of 1976.

Information provided by the USDI Fish and Wildlife Service (USDI FWS 2005). Letter from Acting Field Supervisor Annette Trowbridge (Sept. 12, 2006) confirms the species and critical habitat that should be considered for projects conducted on the Superior National Forest (SNF):

- Bald eagle (threatened), with no designated critical habitat
- Gray wolf (threatened), with designated critical habitat
- Canada lynx (threatened), with no designated critical habitat

# 2.0 Consultation with USDI Fish and Wildlife Service

The Forest Service has initiated consultation with the Fish and Wildlife Service seeking concurrence with the determination of effects in this BA, which concludes that the action with the greatest potential for effects (Alternative 1) may affect, but is not likely to adversely affect the bald eagle, gray wolf, and Canada lynx or their critical habitat.

In addition to consultation for the bald eagle, gray wolf, and Canada lynx requested for this project, programmatic consultation was recently undertaken for Forest Plan revision. The history of this consultation is documented in the Programmatic Biological Assessment for the revision of the forest plans (USDA Forest Service 2004, pp. 6-7). The relevance of program-level consultation to this project includes those agreements between the Forest Service and the Fish and Wildlife Service reached on defining elements of species' ecology and biology, risk factors and general effects, analysis parameters, monitoring, and management direction in the revised Forest Plan. The BA provides more specific information on how relevant information in the program-level BA is incorporated. Additionally, other factors relevant to this project not discussed in detail in program-level consultation will be discussed in detail in this BA.

Consultation specific to the Whyte Project is documented in the project file. It includes emails and telephone calls between September 7, 2006 and the submission of the BA to the FWS.

# 3.0 The Proposed Action

- **Location**: Superior National Forest, Laurentian Ranger District, St. Louis and Lake County, Minnesota. (Appendix B). The Whyte project area is centered about twelve miles northwest of Silver Bay, MN.

    - **Ecological Setting**:

| **Landscape Ecosystem** | **Percent of Project Area** | **Acres** |
|---|---|---|
| Mesic Birch-Aspen-Spruce-Fir | 34% | 32,476 |
| Sugar Maple | 12% | 11,243 |
| Cedar and Black Ash | 6% | 6,023 |
| Jack Pine-Black Spruce | 5% | 5,232 |
| Mesic Red and White Pine | 2% | 1,824 |
| Nonforest lowland and upland | 16% | 14,704 |
| Lowland Conifer within Mesic red and white pine and Mesic birch-aspen-spruce-fir LE | 22% | 20,670 |
| Lowland Conifer within Mesic sugar maple LE | 1% | 1,269 |
| Lowland Conifer within Jack pine-black spruce LE | 1% | 873 |
| **Watershed (5th Level)** | **Percent of Project Area** | **Acres** |
| Cloquet River | 25% | 54,095 |
| Beaver River | 20% | 43,304 |
| Stony River | 18% | 40,137 |
| St. Louis River | 15% | 33,595 |
| Baptism River | 14% | 31,244 |
| Gooseberry River | 5% | 11,797 |
| Partridge River | 2% | 4,058 |
| South Kawishiwi River | <1% | 658 |
| Whiteface River | <1% | 130 |
| Total | | 219,018 |
| **Ecological Classification Units** | **Percent of Project Area** | **Acres** |
| Toimi Uplands | 2% | 5,243 |
| Laurentian Uplands | 48% | 104,062 |
| North Shore Highlands | 50% | 109,716 |
| *Data source:* LE data: Whyte Scoping report, April 2006, Watershed and ECU data: 08/18/2006, ArcMap | | |

- **Overview of Species' Affected Environment**

| **Eagle** | **Total #** |
|---|---|
| Lakes >20 acres and Fish-bearing Streams | 5,470 acres |
| **Wolf** | **Percent of Project Area** |
| Zone 2 | 95% |
| Zone 4 | 5% |
| **Lynx** | **Percent of Project Area** |
| LAU | 92% |
| Habitat outside a LAU | 8 % |
| *Data source:* Lakes and streams and LAU: 081806 ArcMap; Wolf zones: 12/19/2005, Wolf Recovery Plan | |

- **Other relevant setting features:** Roads within the project area include Forest Highway 11, Lake County Highway 2, Stony River Road, Whyte Road and National Forest System Roads 102, 107, 397, 419. Water bodies include Big Lake, Seven Beavers Lake, Pine Lake, Greenwood Lake, Cloquet Lake, Kane Lake, Marble Lake, St. Louis River, Cloquet River, Stony River, Beaver River, and numerous creeks and small lakes. Numerous outdoor recreational activities take place within the project area including hunting, fishing, motorized and non-motorized trail activities, and camping. There are no developed recreation facilities within the project area.

- **Land ownership:** The Minnesota Department of Natural Resources (DNR) land encompasses 25 percent (54,372 acres) of the project area. Based on a data base query of State land in the project area, approximately 1,349 acres are young (0-9 years old for upland hardwoods and 0-9 years old for lowland forest). The State is has a pool of approximately 12,856 acres total in 632 stands within the Whyte project area that could be harvested in the next ten years. Saint Louis County land encompasses 0.6 percent (1,354 acres) of the project area. Lake County land encompasses 10 percent (21,233 acres) of the project area. Based on a data base query of Lake County land in the project area, approximately 4,770 acres are young (0-9 years old for upland hardwoods and 0-9 years old for lowland forest). Potlatch land encompasses 4 percent (7,720 acres) of the project area. The Nature Conservancy land encompasses 3 percent (7,256 acres) of the project area. Other private land, which is predominately undeveloped or seasonal recreational residential, comprises 13 percent (approximately 27,649 acres) of the project area. Based on the small amount of known potential harvest on other private land and because of a land use focus on recreation, timber harvest levels are expected to be low. Private development of housing tracts in the Cloquet Lake area and along the shores of Kane and Marble Lakes.

- **Cumulative Actions:** See Appendix A for a discussion of past, present, and expected future management actions that may contribute to cumulative effects.

- **Proposed action summary**

  The USDA Forest Service Superior National Forest proposes timber harvest, fuels reduction, road system, planting, and wildlife habitat management activities. The proposed action and its two alternatives are described in Chapter 2 of the Whyte PEA. The action alternatives include the following activities, in different amounts and locations (see the following table):

  - Timber harvest including even-aged, uneven-aged, and thinning methods for timber production and habitat and timber stand improvement.
  - Mechanical site preparation for planting and natural regeneration.
  - Planting of white pine, white spruce, and other conifer species to improve within stand diversity and eagle habitat.
  - Road management including decommissioning, creation and subsequent removal of temporary access roads.
  - Mature upland forest patches were analyzed for size and configuration, Patches of mature forest greater than 300 acres were retained. Mature forest patches less that 300 acres in size were configured to retain interior forest whenever possible.
  - Young upland forest was consolidated where possible to create large, young forest patches and reduce the likelihood of future habitat fragmentation.

- **Purpose of the action:**

The overall objective of the Whyte Project is to maintain and improve forest health by moving the vegetative component towards the Landscape Ecosystem objectives described in the 2004 Superior National Forest Land and Resource Management Plan (Forest Plan p. 2-23, O-VG-1). A discussion of this can be found in Chapter 1 of the Whyte PEA.

- **Time frame of the action:**

All of the management activities are expected to take place in the next ten years. Some activities may take place starting in the fall of 2007. The time period covered by the cumulative effects analysis is from the 2006 to approximately 2014. 2014 was chosen because the project area is likely to be considered for Forest Service vegetation management projects approximately every ten years and this coincides with the Decade 1 objectives in the Forest Plan.

- **Project activities analyzed in program-level BA**

| **Comparison of Alternatives* Considered in Detail** | | | |
|---|---|---|---|
| | **Alternative 1** | **Alternative 2** | **Alternative 3** |
| **Vegetation Management** | **Acres** | **Acres** | **Acres** |
| Create young aspen, paper birch, jack pine, balsam-fir/spruce, and black spruce forest through a variety of even-aged management treatments such as clearcut with reserves, overstory removal, and shelterwood harvest. | 4918 | 0 | 4292 |
| Increase the amount of white pine through two-aged management treatments including shelterwood with reserves and shelterwood with canopy gaps. | 510 | 0 | 335 |
| Increase the amount of white pine by converting upland brush and poor quality aspen stands. | 176 | 0 | 157 |
| Enhance riparian habitat by planting longer-lived tree species and releasing existing long-lived tree species adjacent to streams and lakes | 241 | 0 | 241 |
| Enhance yellow birch forest through site preparation to encourage regeneration of over-mature stand | 29 | 0 | 29 |
| Improve the quality of red pine, white spruce, upland black spruce, sugar maple, and northern white cedar-aspen/birch stands through a variety of intermediate treatments such as thinning, group selection, and variable gap dynamics. | 3928 | 0 | 3208 |
| Improve Nabokov Blue butterfly habitat | 2 | 0 | 2 |
| Restore the ecological effects of fire in older red pine forest through underburning. | 50 | 0 | 50 |
| Total Acres of Vegetation Management | 9859 | 0 | 8314 |
| **Fire Regime Condition Class** | **Acres** | **Acres** | **Acres** |
| Restore and/or maintain fire regime condition classes 1, 2, and 3 to condition class 1 and 2 | 9857 | 0 | 8312 |
| **Road Management** | **Miles** | **Miles** | **Miles** |
| Add existing unauthorized road to the managed system to provide adequate access to lands that are in need of management | 2 | 0 | 2 |
| Decommission of unauthorized road. | 20 | 0 | 20 |
| Use previously used temporary road to access vegetation management units | 52 | 0 | 48 |
| Construct new temporary road to access vegetation management units | 20 | 0 | 16 |
| **Gravel Pits** | **Number** | **Number** | **Number** |
| Approve management plans for gravel extraction | 5 | 0 | 5 |

* Acres in this table do not include the dropping of units in the Phantom Lake RARE II roadless area. The BA analysis was completed prior to the court ruling which led

to the dropping 856 acres of harvest (253 acres clearcut w/reserves, 341 acres of thinning, 212 acres of shelterwood harvest, 30 acres of shelterwood w/reserves and 20 acres of reforestation). All of these dropped units occurred in Lynx Analysis Unit SNF21. Since harvesting less habitat will not increase the impacts on eagle, wolf or lynx the analysis was not re-run with the new data and the original analysis was used.

**Project activities analyzed in program-level BA**

| **Proposed actions** | Alt. 1 | Alt. 2 | Alt. 3 | Addressed in Program-level BA? |
|---|---|---|---|---|
| Timber Harvest | x | | x | yes |
| Reforestation | x | | x | yes |
| Non-harvest restoration | x | | x | yes |
| Road Management | x | | x | yes |

# 4.0 Status of the Species

## 4.1 Bald Eagle

**Ecology (see section 2.3 of program-level BA)**

- Terrestrial Habitat: No new information
- Aquatic Habitat: No new information
- Diet: No new information

**Population Status (see section 2.4 of program-level BA)**

- Breeding population/trend in United States: No new information
- Breeding population/trend in Minnesota: The number of nesting pairs of bald eagles found in a 2005 statewide survey increased by 28 percent since 2000 to 872 pairs, up 191 nests from 2000.
- Breeding population/trend in the National Forest: During the concentrated flight part of the survey, Superior National Forest personnel searched 235 historical nest sites. Of these, we found 174 nests, 87 of which had bald eagles incubating. There were 7 of these found nest sites which were occupied, but no incubation activity observed. There were 2 nest sites that were occupied, but incubation could not be confirmed or refuted. Two nest sites were occupied by birds other than eagle or osprey. Active nests on the Superior National Forest continue to increase in number with an increase 15.4 percent since 2000 (MNDNR 2006).
- Wintering population/trend (United States, Minnesota, National Forest): No new information

**Population Status in Project Area:**

- Project site-specific surveys: Aerial occupancy and productivity surveys of known nests within the project area took place on April 29, 2005 and June 21, 2005, respectively, as part of a statewide survey. Aerial surveys during 2005 included looking for new nests in suitable habitat within the project

area. Coworkers on the Laurentian District report to the biologist any eagle and osprey nests found during their field work.

- Known occurrences: One adult eagle was seen incubating at the nest on the east side of Seven Beavers Lake in April 2005. One juvenile was seen at the nest in June 2005.
- Potential habitat: There are other large lakes in the project area that provide hunting opportunities. There are some possible historic eagle nests on Big Lake, Greenwood Lake and Katherine Lake but they have not been used in the past four years. Overall, nesting habitat is limited.

**Factors Affecting Eagle Environment (see section 2.5 of program-level BA)**

- Terrestrial habitat (habitat loss, forest management, etc): No new information
- Aquatic habitat (changes in aquatic prey base, etc): No new information
- Human Disturbance (forest management, roads, recreation activities, trauma, etc): No new information
- Other factors: No new information

## 4.2 Gray Wolf

**Ecology (see section 3.3 of program-level BA)**

- Breeding habitat: No new information
- Home range and dispersal: The 2003-04 survey (Erb and Benson 2004) indicates total wolf range has remained stable since 1998 and pack territories have decreased in size
- Diet: No new information

**Population Status (see section 3.4 of program-level BA)**

- North America: No new information.
- Minnesota: Population estimates indicate a 26% increase since 1997-98 (Erb and Benson 2004).
- Chippewa and Superior National Forests: No new information
- Summary of wolf mortality in Minnesota: No new information

**Population Status in Project Area:**

- Project site-specific surveys: 122 miles of winter track surveys were conducted in January to March 2005. Also, the project area and the Laurentian Ranger District were surveyed during the Minnesota Department of Natural Resources' 2003-2004 wolf survey (Erb and Benson 2004).
- Known occurrences: Wolves or wolf sign were seen across the Laurentian District during the 2003-2004 survey. The winter 2005 track survey recorded 18 sets of wolf tracks over the 122 miles (0.15 tracks/mile) scattered throughout the project area.

**Factors Affecting Wolf Environment**

- Prey habitat: No new information
- Human access: No new information
- Other factors: No new information

## 4.3 Canada Lynx

**Ecology (see section 4.3 of program-level BA)**

- Home range and dispersal: No new information
- Diet: No new information
- Den site selection: No new information
- Mortality: No new information
- Interspecific relationships with other carnivores: No new information
- Population dynamics: No new information

**Population Status (see section 4.4 of program-level BA)**

- North America: No new information
- Minnesota: No new information
- Chippewa and Superior National Forests: No new information
- Minnesota's lynx-hare cycles: No new information

**Population Status in Project Area:**

- Project site-specific surveys: 122 miles of winter snow track surveys. Also, lynx have been tracked, trapped, and located with radio telemetry in the project area through the NRRI forest-wide lynx study.
- Known occurrences: Lake County, which contains the project area, has had 104 reported lynx sightings between March 2000 and July 6, 2006 (http://www.dnr.state.mn.us/ecological_services/nhnrp/research/lynx_sightings.html). This is the highest number of sightings in any Minnesota county. There have been numerous radio-collared lynx in the project area including two known denning females (L7 and L31). The 2005 winter track survey recorded two sets of lynx tracks (probably same lynx) just off the Stony River Forest Road. Scat was collected and L31 was later captured and fitted with a radio-collar from this spot.

**Factors Affecting Lynx Environment (see section 4.5 of program-level BA)**

- Roads and trails: No new information
- Winter dispersed recreation: No new information
- Trapping and shooting: No new information.
- Vehicle collisions: see below
- Other factors: Most mortality has been related to human activities, such as being hit by a train, hit by a car, or trapped.

# 5.0 Affected Environment and Environmental Consequences

## 5.1 EAGLE:

### A. Analysis Area:

- **Direct/Indirect Effects Analysis Area:**
  *Habitat indicators*: The analysis area for habitat indicators is 1/2 mile from fish bearing streams and lakes greater than 20 acres.
  *Human Disturbance indicators*: The analysis area for direct effects of human disturbance indicators in the project is 1/2 mile from known nests. The analysis area for indirect effects of human disturbance is the project area.

- **Cumulative Effects Analysis Area:** The Whyte project area is the cumulative effects analysis area.
  *Rationale:* Foreseeable actions on federal lands are most likely to be known in the current project area. Other projects outside the project area may be located near eagle nests but those projects would be mitigated to protect nesting eagles.

### B. Effects Analysis:

- **Identify and analyze the direct and indirect effects of the action and the cumulative effects of other actions in the project area.**

**Bald Eagle Indicators**

| Forest Plan BA Indicator | Use? | Rationale for exclusion |
|---|---|---|
| 1. Red and White pine mgt 0-9 yrs old | Yes | |
| 2a. Acres of RW pine forest | Yes | |
| 2b. Acres of RW pine forest 100 yrs old | No | Currently in the project area there are 177 acres and in 10 years there will be 189 acres of white and red pine that are 100+ years. The acreage of this indicator will not change with any of the alternatives. |
| 3. Miles of ATV trails | No | No additional trail mileage is proposed in the project and alternatives will not differ. Trail planning is occurring with other agencies but no specific trails are planned at this time. |
| 4. Miles of snowmobile trails | No | No additional trail mileage is proposed in the project and alternatives will not differ |
| 5. Miles of temp roads | Yes | Measures O-WL-6 and 7 |

| Bald Eagle Indicators | | |
|---|---|---|
| **Other Indicators** | **Use?** | **Rationale for inclusion** |
| 6. Acres and % of white and red pine forest type 0-9 years old, within ½ mile of fish bearing waters (greater than 20 ac) (MIH 7 young). | Yes | This indicator gives a more realistic measure of the effects to Bald Eagle habitat at the project level scale. Also, to help measure O-WL-5. |
| 7. Acres and % of white and red pine forest type, within ½ mile of fish bearing waters (greater than 20 ac). (MIH 7) | Yes | This indicator gives a more realistic measure of the effects to bald eagle habitat at the project level scale. Also, to help measure O-WL-5. |
| 8. Acres of underplanting and diversity planting of white pine to increase within stand diversity, project area wide and within 1/2 mile of fish bearing waters | Yes | Acres of white pine underplanting will vary by alternative. To measure O-WL-4 |
| 9. Miles of unclassified, OML 1 and 2 roads within ½ miles of lakes and streams 20 acres or greater. (includes federal und, uatv, t, su-t (open), OML 1 and OML 2 ca, cs, and cw) | Yes | To measure O-WL-7 |

## Existing Conditions and Effects

| Indicators | Existing Condition | | Alt 1 Proposed | | Alt 2 No Action | | Alt 3 | |
|---|---|---|---|---|---|---|---|---|
| | acre | % | acre | % | acres | % | acres | % |
| 1. Acres and % of red and white pine type 0-9 yrs old | 117 | 0.2 | 597 | 1.1 | 0 | 0 | 517 | 1.0 |
| 2a. Acres and % of all red and white pine forest type | 2,362 | 4.6 | 2,959 | 5.8 | 2,362 | 4.6 | 2,879 | 5.7 |
| | Miles | | Miles | | Miles | | Miles | |
| 5. Miles of temp and OML 1 and 2 roads | 81.0 (0, 47.6, 33.4) | | 155 (72, 49.0, 34.0) | | 81.0 (0, 47.6, 33.4) | | 147 (64, 49.0, 34.0) | |
| **Other Indicators** | acres | % | Acres | % | acres | % | acres | % |
| 6. Acres and % of white and red pine forest type 0-9 years old, within ½ mile of fish bearing waters (greater than 20 ac). | 0.1 | 0.0 | 152 | 0.3 | 0 | 0 | 122 | 0.2 |
| 7. Acres and %of white and red pine forest type, within ½ miles of fish bearing streams and lakes 20 acres or greater. | 326 | 0.6 | 478 | 0.9 | 326 | 0.6 | 448 | 0.9 |
| | acres | | acres | | acres | | acres | |
| 8. Acres of underplanting and diversity planting of white pine to increase within stand diversity, project area wide and (within ½ miles of fish bearing streams and lakes 20 acres or greater). | n/a | | 240 (107) | | 0 | | 240 (107) | |
| | Miles | | Miles | | Miles | | Miles | |
| 9. Miles of unclassified, OML 1 and 2 roads within ½ miles of fish bearing streams and lakes 20 acres or greater. | 39.7 (26.8, 8.1, 4.8) | | 37.6 (24.7, 8.1, 4.8) | | 39.7 (26.8, 8.1, 4.8) | | 37.6 (24.7, 8.1, 4.8) | |

*Data source:* Existing condition for vegetation indicators are based on 2006 CDS data, and all alternatives are based on projected CDS data in the year 2014. Roads indicator data for Existing Condition and alternatives are based on shapefile routes data queried in ArcMap.
*Other Footnotes:* Percentages are the percent of total upland forest on federal lands in the project area (50,804 acres) For indicators 5 and 10, numbers in parentheses are the miles of each road type that make up the total for that indicator. *Note on indicator 5*: Indicator 5 includes OML1 winter roads that are not open to vehicles or ATVs. Also, there are currently 42 miles of unclassified roads in the project area. With the no action alternative all would remain open. With all action alternatives the miles of unclassified roads would be reduced to 22 miles. These roads will be evaluated during future NEPA analyses. The remaining 20 miles of unclassified roads would become decommissioned, converted to OML 1 or 2 roads, or used as temporary roads and then decommissioned. Mileages of each vary by each action alternatives. *Note on Indicator 9*: Unclassified roads include roads on other ownerships in which we do not have any jurisdiction.

## C. Consistency with Forest Plan:

| Bald Eagle | | | | |
|---|---|---|---|---|
| **Forest Plan Guidance** | **Direction** | **Alts In Compliance** | **Basis for Compliance** | **Remarks** |
| O-WL-4 | Maintain or improve habitat | 1- 3 | Habitat indicator 7, disturbance indicator 5, mitigations and standard management requirements (Section 6) | Alt. 2 maintains, but does not improve habitat. Alts. 1 and 3 maintains and improve habitat through white pine planting on 122 to 152 acres near fish-bearing lakes for future nesting habitat and potential fish habitat as the trees die and fall into the water. |
| O-WL-5 | Seek opportunities to benefit TE species. | 1- 3 | Habitat indicator 6 | Amount of white pine would increase with both action alternatives. In alternative 1 and 3, white pine will be planted on 122 to 152 acres within 1/2 mile of lakes greater than 20 acres to increase within stand diversity and provide future nesting and roosting habitat. A total of 517 to 597 acres will be planted in alternatives 1 and 3, regardless of adjacency to lakes, with either white pine or a mix of white pine and other conifers. |
| O-WL-6 | Reduce or eliminate adverse effects to TE | 1- 3 | There will be no harvest activity or road activities within a ½ mile of the one active nest in the project area. | Potential nest/roost trees will not be cut. |
| O-WL-7 | Minimize building or upgrading roads in TE areas | 1- 3 | Indicator 5 and 9 | No road activities would take place in alternative 2. In alternatives 1 and 3, temporary roads will be used for short term management purposes and obliterated after access needs have expired (PEA). Decommissioning of roads in the action alternatives would result in a decrease in road miles. |

| Bald Eagle | | | | |
|---|---|---|---|---|
| **Forest Plan Guidance** | **Direction** | **Alts In Compliance** | **Basis for Compliance** | **Remarks** |
| O-WL-16 | Promote the conservation and recovery of bald eagle | 1 and 3 | Indicator 6 | Alternative 2 does not promote recovery. In alternatives 1 and 3, recovery is promoted by planting 122 to 152 acres of white pine within 1/2 mile of large lakes and streams for future nesting and roosting habitat. |
| S-WL-3 | Management will be governed by Bald Eagle Recovery Plan | 1- 3 | No activities will take place within a ½ mile of the one active nest in the project area. | The plan is being followed. |

**Cumulative effects**
Because the large lakes are surrounded mostly by federal land, cumulative effects to nesting habitat are expected to be minimal (Appendix A).

**ESA –** Cumulative effects as a result of known future timber harvest on non-federal ownership is expected to be minimal. Timber management on state and county land generally retains large white pine. The amount of retention versus harvest of white pine on private lands is unknown. The nearest planned harvest to the active eagle nest is a Lake County cut more than ¾ miles away. Other planned harvests are located more than ½ mile from occupied habitat or suitable foraging lakes. Disturbance is not expected from these actions. Cumulative effects could occur from future road building to access planned timber harvest discussed above. Negligible effects are expected due to their location and distance from known bald eagle nests.

**NEPA –** Cumulative effects as a result of known future timber harvest on non-federal ownership is expected to be minimal. Timber management on state and county land generally retains large white pine. The amount of retention versus harvest of white pine on private lands is unknown. The nearest planned harvest to the active eagle nest is a Lake County cut more than ¾ miles away. Other planned harvests are located more than ½ mile from occupied habitat or suitable foraging lakes. Disturbance is not expected from these actions. Cumulative effects could occur from future road building to access planned timber harvest discussed above. Negligible effects are expected due to their location and distance from known bald eagle nests.

The federal projects listed earlier for consideration in cumulative effects analysis could cause cumulative effects to eagles. However, these effects are expected to be minimal. None of them will occur within occupied habitat or within ½ mile of suitable foraging lakes. Any future federal projects in the area will also be analyzed using the NEPA

process and direct and indirect effects of these federal projects will be analyzed and bald eagle will be considered in planning for these projects.

## D. Determination of Effect for Bald Eagle

| Management Activity | Determination | Consistent with Programmatic BA determination? |
|---|---|---|
| Timber Harvest | NLAA | Y |
| Reforestation | NLAA | Y |
| Non-harvest restoration | NLAA | Y |
| Road Management | NLAA | Y |

| Alternative | Determination | Summary of Rationale |
|---|---|---|
| Alternative 1 (Proposed action) | NLAA | Alternative 1 would result in the most treatment acres and most temporary roads. Future nesting habitat (young pine) would increase more under Alternative 1 then Alternative 2 or 3.<br><br>There is a decrease in the miles (2.1 mi) of unclassified roads within a ½ mile of suitable foraging lakes under this alternative which is the result of road closures. There will be more temporary roads needed than Alternative 2 and 3.<br><br>In general, available habitat for eagles will increase under Alternative 1. Alternative 1 would result in 152 acres of white pine planted within 1/2 mile of lakes > 20 acres. In addition, the red and white pine forest type would increase from the existing 4.6% of the upland forest to 5.8% in the year 2014. Cumulative effects are expected to be minimal. |
| Alternative 2 (No action) | NLAA | Alternative 2 is the no-action Alternative which results in no proposed treatments or changes in the transportation system. There would be no planned disturbance within close proximity to the known nest in the project area. However, there would also be no habitat improvements (pine planting) with this alternative. As with the other alternatives, young pine would continue to naturally regenerate in some areas but brush competition would prevent regeneration in some stands. No temporary roads would result from this Alternative. No existing unclassified roads would be added to the system, decommissioned and/or closed so open road miles would remain higher under this Alternative than under Alternatives 1 or 3. In general, available habitat for eagles would be maintained under this alternative. The red and white pine forest type would remain at 4.6% of the upland forest in the year 2014. Cumulative effects are expected to be minimal |

| Alternative | Determination | Summary of Rationale |
|---|---|---|
| Alternative 3 | NLAA | Alternative 3 would result in more treatment acres and more temporary roads than Alternative 2 (no action) but less than Alternative 1. Future nesting habitat (young pine) would increase more than Alternative 2 but less than Alternative 1.<br><br>There is a decrease in the miles (2.1 mi) of unclassified roads within a ½ mile of suitable foraging lakes under this alternative which is the result of road closures. There will be more temporary roads needed than Alternative 2.<br><br>In general, available habitat for eagles will increase under this alternative. Alternative 3 would result in 122 acres of white pine planted within 1/2 mile of lakes > 20 acres. In addition, the red and white pine forest type would increase from the existing 4.6% of the upland forest to 5.7% in the year 2014. Cumulative effects are expected to be minimal. |

## 5.2 GRAY WOLF:

### A. Analysis Area:

- **Direct/Indirect Effects Analysis Area:**
  - *Habitat indicators*: Analysis area for all indicators is federal lands within the project area.
  - *Human Disturbance indicators:* Analysis area for all indicators is federal roads within the project area.

**Cumulative Effects Analysis Area:**

*Rationale for analysis areas:* The analysis area boundaries are appropriate because they are large enough to overlap the territories of numerous packs and are an appropriate size to address the impacts to these packs. Per ESA Section 7 Consultation Handbook, cumulative effects are to be considered in the action area (for purpose of this analysis action area = project area).

- **ESA -** Analysis for cumulative effects considers future known State and private activities within the project area. Projects considered in cumulative effects to wolf are found in Appendix A.

- **Cumulative Effects Analysis Area for NEPA -** Cumulative effects analysis area is the project area. The programmatic BA has done a complete job of considering cumulative effects to wolf habitat across a broad landscape, to which effects are similar at the project scale. It is not necessary to go out to the Wolf Zone scale because this project does not change the road density of OML 3-5 roads. The appropriate scale for cumulative effects is the project scale because the concern for negative impacts comes primarily from human disturbance which is best measured at the site-specific scale. Human access effects of this

project will not go beyond the project area scale. Therefore, cumulative effects should be measured at this scale. Past actions are taken into account in the existing condition. Present and foreseeable future (10 yrs) actions are considered. This is an appropriate timeframe because it includes all known future projects and provides a reasonably reliable estimate of what is expected to happen.

**B. Effects Analysis:**

- **Identify and analyze the direct and indirect effects of the action and the cumulative effects of other actions in the project area.**

**Indicators**

| Gray Wolf Forest Plan BA Indicator | Use? | Rationale for exclusion |
|---|---|---|
| 1. Acres and percent of young upland forest <10 years old (MIH 1, young) | Yes | |
| 2. Acres and percent of upland conifer (spruce and pine) > 9 years old on all uplands (MIH 5, all but young) | Yes | |
| 3. Miles of RMV trails | No | Miles of RMV trails would be the same in all alternatives |
| 4. Cross-country use policy for RMVs | No | Policy would not change by alternative |
| 5. Miles of temp and OML 1 roads | Yes | |

| Gray Wolf Other Indicators | | Rationale for inclusion |
|---|---|---|
| 6. Miles of roads open for ATV use (federal OML 1 and 2, und, uatv) | Yes | The amount of roads open to ATV use varies by alternative and will have varying effects. To help assess O-WL-5 |
| 7. Miles of unclassified, OML 2 and OML 3-5 roads in the project area. (und, uatv, OML 2-5) | Yes | The amount of roads open to RMV use varies by alternative and will have varying effects. To help assess O-WL-5 |

## Existing Conditions and Effects

| Indicators | Existing Condition | | Alt 1 Proposed | | Alt 2 No Action | | Alt 3 | |
|---|---|---|---|---|---|---|---|---|
| | acre | % | acre | % | acres | % | acres | % |
| 1. Acres and percent of young upland forest <10 years old | 1,242 | 2.4 | 4,753 | 9.4 | 56 | 0.1 | 4,204 | 8.3 |
| 2. Acres and percent of upland conifer (spruce and pine) > 9 years old on all uplands | 16,463 | 32.4 | 17,149 | 33.8 | 17,098 | 33.7 | 17,098 | 33.6 |
| | Miles | | Miles | | Miles | | Miles | |
| 5. Miles of temp and OML 1 roads | 47.6 (0, 47.6) | | 121.0 (72, 49.0) | | 47.6 (0, 47.6) | | 113.0 (64, 49.0) | |
| **Other Indicators** | Miles | | Miles | | Miles | | Miles | |
| 6. Miles of roads open for RMV use | 49.0 | | 47.5 | | 49.0 | | 47.5 | |
| 7. Miles of unclassified, OML 2 and OML 3-5 roads in the project area. | 177.4 (42.6, 33.4, 101.4 ) | | 157.4 (22.0, 34.0, 101.4) | | 177.4 (42.6, 33.4, 101.4) | | 157.4 (22.0, 34.0, 101.4) | |

*Data source:* Existing condition for vegetation indicators are based on 2006 CDS data, and all alternatives are based on projected CDS data in the year 2014. Roads indicator data for Existing Condition and alternatives are based on shapefile routes data queried in Arcview.
*Other Footnotes:* Percentages are the percent of total upland forest on federal lands in the project area (50,804 acres) For indicators 5 and 7, numbers in parentheses are the miles of each road type that make up the total for that indicator. *Note on indicator 6:* This includes classified seasonal roads with OML 1 and 2 and driveable unclassified roads. 1.5 miles of unclassified driveable roads are being decommissioned. The other 18.5 miles of unclassified roads that will be decommissioned are roads that are being used illegally. *Note on indicator 7:* Also, there are currently 42 miles of unclassified roads in the project area. With the no action alternative all would remain open. With all action alternatives the miles of unclassified roads would be reduced to 22 miles. These roads will be evaluated during future NEPA analyses. The remaining 20 miles of unclassified roads would become decommissioned, converted to OML 1 or 2 roads, or used as temporary roads and then decommissioned. Mileages of each vary by each action alternatives.

## C. Consistency with Forest Plan:

| Gray Wolf | | | | |
|---|---|---|---|---|
| **Forest Plan Guidance** | **Summary of Direction (see Forest Plan)** | **Alternatives In Compliance** | **Basis for Compliance** | **Remarks** |
| O-WL-4 | Maintain or improve habitat | 1-3 | Indicators 1, 2, 7 | Foraging habitat would decrease in alternative 2 and may decrease moose foraging habitat. Foraging habitat for deer and moose is maintained or improved in alternatives 1 and 3. In all alternatives, deer densities are likely to remain at current levels regardless of vegetation age since severe winters have the greatest effect on population levels (Nelson 2006). Winter thermal cover (upland conifer) would remain plentiful in all alternatives (32-34% of the uplands in the LE). |
| O-WL-5 | Seek opportunities to benefit TE spp. | 1-3 | All indicators | Large, young, upland patches of forest would benefit moose. Underplanting and planting of conifer in alternatives 1 and 3 would improve the distribution of thermal cover across the project area. |
| O-WL-6 | Reduce or eliminate adverse effects to TE | 1-3 | Indicators 5 and 6, 7, mitigations, and standard management requirements | The project was designed with the potential for decreased road miles in mind. Effects from human disturbance in alternative 2 would remain the same. Temporary access in alternatives 1 and 3 would be limited in duration and roads obliterated when actions are completed. Long-term road miles would decrease in alternatives 1 and 3. Effects of roads on wolves are expected to remain similar to current conditions. |

| Gray Wolf | | | | |
|---|---|---|---|---|
| **Forest Plan Guidance** | **Summary of Direction (see Forest Plan)** | **Alternatives In Compliance** | **Basis for Compliance** | **Remarks** |
| O-WL-7 | Minimize building or upgrading roads in TE areas | 1-3 | Indicators 5 and 6, 7,mitigations, and standard management requirements | No road activities would take place in alternative 2. No upgrading or paving of dirt or gravel roads is planned in any of the alternatives. In alternatives 1 and 3, temporary roads will be used for short term management purposes and obliterated after access needs have expired (Whyte PEA). Decommissioning of roads in the action alternatives would result in a decrease in road miles. |
| O-WL-17 | Promote the conservation and recovery of gray wolf | 1-3 | All analysis indicators | All alternatives provide adequate levels of suitable habitat. |
| S-WL-3 | Management will be governed by Gray Wolf Recovery Plan | 1-3 | All indicators | All alternatives were developed following the Gray Wolf recovery Plan. |
| G-WL-10 | Provide for the protection of known active den sites | n/a | n/a | No dens are known in the project area. |

**Cumulative Effects**

**Endangered Species Act** –Appendix A contains a list of future proposed actions on other ownerships within the project area. Harvest of timber on state and county land in the project area is likely to have more effects than other actions within the project boundary. Creation of young forest would provide browse for moose and deer, but effects to thermal cover are not known. Low standard road density may increase slightly, however existing roads and grown-in corridors are likely to be used for the majority of access needs. The Highway 2 upgrade will use the existing corridor and will not lead to higher speed limits and, thus, should not impact wolves. The effects of other cumulative actions are expected to be minimal and unlikely to be greater than occurs today.

**National Environmental Policy Act –** Harvest of timber on state and county land in the project area is likely to have more effects than other actions within the project boundary. Creation of young forest would provide browse for moose and deer, but effects to thermal cover are not known. The amount of thermal cover on federal land is high (Indicator 2: 32% to 34% for all alternatives) and may compensate for any reduction of thermal cover

on state lands. Low standard road density may increase slightly, however existing roads and grown-in corridors are likely to be used for the majority of access needs. The Highway 2 upgrade will use the existing corridor and will not lead to higher speed limits and, thus, should not impact wolves. The effects of other cumulative actions are expected to be minimal and unlikely to be greater than occurs today.

## D. Determination of Effect

| Management Activity | Determination | Consistent with Programmatic BA determination? |
|---|---|---|
| Timber Harvest | NLAA | Y |
| Reforestation | NLAA | Y |
| Non-harvest restoration | NLAA | Y |
| Road Management | NLAA* | N (LAA in Programmatic BA) |

*Due to a decrease in road miles from decommissioning

| Wolf | | |
|---|---|---|
| **Alternative** | **Determination** | **Summary of Rationale** |
| Alternative 1 | NLAA | Habitat for wolf prey is improved through burning, interplanting and planting of mixed conifer, and connection of young, deciduous forest patches for moose forage through harvesting. Increases in human disturbance factors are minimized by decommissioning temporary roads and some unclassified roads. |
| Alternative 2 (No action) | NLAA | Habitat changes would occur due to succession and natural disturbances. Adequate wolf and wolf prey habitat and spatial needs would be available. Large patches of young forest would not be available for moose. Human disturbance factors would not change from the current condition. No roads would be decommissioned. |
| Alternative 3 | NLAA | Habitat for wolf prey is improved through burning, interplanting and planting of mixed conifer, and connection of young, deciduous forest patches for moose forage through harvesting. Increases in human disturbance factors are minimized by decommissioning temporary roads and some unclassified roads. |

| Wolf Critical Habitat | | |
|---|---|---|
| **Management Activity** | **Determination** | **Summary of Rationale** |
| Alternative 1 | NLAA | Habitat for wolf prey is improved through burning, interplanting and planting of mixed conifer, and connection of young, deciduous forest patches for moose forage through harvesting. Increases in human disturbance factors are minimized by decommissioning temporary roads and some unclassified roads. |
| Alternative 2 (No action) | NLAA | Habitat changes would occur due to succession and natural disturbances. Adequate wolf and wolf prey habitat and spatial needs would be available. Large patches of young forest would not be available for moose. Human disturbance factors would not change from the current condition. No roads would be decommissioned. |
| Alternative 3 | NLAA | Habitat for wolf prey is improved through burning, interplanting and planting of mixed conifer, and connection of young, deciduous forest patches for moose forage through harvesting. Increases in human disturbance factors are minimized by decommissioning temporary roads and some unclassified roads. |

## 5.3 CANADA LYNX:

### A. Analysis Area:

- **Direct/Indirect Effects Analysis Area:**
- *Habitat indicators*: Analysis area is federal lands within LAUs 12, 15-17, 21-23.
- *Human Disturbance indicators:* Analysis area is federal roads within LAUs 12, 15-17, 21-23.

- **Cumulative Effects Analysis Area (for both NEPA and ESA):** Cumulative effects consider land-based activities on all ownerships and federal roads within the Whyte project area (Appendix A).

*Rationale:* The Whyte project area (219,018 land acres in all ownerships) incorporates more acres of land than any of the Whyte project's Lynx Analysis Units (Table 1) and cumulative effects are reasonably foreseeable at this scale. See Superior National Forest Plan Appendix E: Canada Lynx Section 5. Scales of Analysis, pg E-3 for rationale for spatial analysis boundary (USDA 2004a). The temporal analysis boundary of 10 years is an appropriate timeframe because it includes all known future projects and provides a reasonably reliable estimate of what is expected to happen.

Table 1 provides a list of all Lynx analysis units (LAUs) that overlap the Whyte project area. LAUs that will be affected by this project are SNF 12, 15-17, 21-23.

*Table 1: Acres and Percent of each Lynx Analysis Units (LAU) within the Whyte Project Area.*

| LAU | Gross Acres* | Acres of LAU in Project Area ** | % of LAU in Project area | Whyte Alt. 1 Acres*** | % of LAU Affected |
|---|---|---|---|---|---|
| SNF12 | 70,981 | 7,302 | 10% | 51 | 0.0 |
| SNF15 | 44,609 | 1,250 | 3% | 184 | 0.4 |
| SNF16 | 76,108 | 48,579 | 64% | 1,278 | 1.7 |
| SNF17 | 44,668 | 3,992 | 9% | 216 | 0.5 |
| SNF21 | 73,254 | 38,803 | 53% | 2,322 | 3.2 |
| SNF22 | 58,145 | 53,387 | 92% | 5,283 | 9.1 |
| SNF23 | 34,318 | 2,129 | 6% | 80 | 0.2 |

*Data source:*
Sept. 8, 2006 CDS data.
******Data source: CDS data: Sept. 8, 2006, ArcMap
*******Alternative 1 is analyzed because it affects the most acres, CDS data: Sept. 8, 2006, ArcMap. Acres include all proposed activities.
*Other Footnotes:*
*****Gross acres include land and water on all ownerships within the LAUs
**Acres of LAU in the project area include National Forest System lands.

## B. Effects Analysis:

- **Identify and analyze the direct and indirect effects of the action and the cumulative effects of other actions in the project area.**

**Existing Conditions and Effects**
National Forest System existing condition data is CDS as of Sept. 8, 2006 and includes activities scheduled to take place as a result of signed decisions.

The following indicators were chosen to analyze direct and indirect effects of the actions and the cumulative effects of other actions in the project area and lynx analysis units.

## Lynx Habitat – Forest Condition Indicators

| Forest Plan BA Indicator | Use? | Rationale for exclusion |
|---|---|---|
| 1a. Snowshoe hare habitat acres | Yes | |
| 1b. Percent of unsuitable habitat on NFS land | Yes | |
| 2. Acres of red squirrel habitat | Yes | |
| 3. Denning habitat in patches > 5 acres | Yes | |
| 4. Percent of lynx habitat in LAUs with adequate canopy cover- upland forest > 4 years old and lowland forest > 9 years old | Yes | |
| 5. Miles of ATV trails allowed | No | Miles of trail would be the same in all alternatives |
| 6. Miles of snowmobile trails allowed | No | Miles of trail would be the same in all alternatives |
| 7. Miles of temp and OML 1&2 roads | Yes | |
| 8. Policy on cross-country use of ATVs and snowmobiles | No | This project proposes no changes to the policy on cross-country use of ATVs and snowmobiles |
| 9. Policy on use of ATVs and snowmobiles on OML 1&2 roads | No | This project proposes no changes to the policy on use of ATVs and snowmobiles on OML 1&2 roads |

| Other Indicators | | Rationale for inclusion |
|---|---|---|
| 10. Acres of snowshoe hare habitat in which within stand structure will be increased thru diversity and under-planting of conifer on SNF lands. | Y | To compare beneficial site-specific features of each alternative of increasing small diameter conifers and stand structure as a component of prey habitat. To help assess O-WL-5 |
| 11. Acres and % of lynx habitat currently unsuitable on all ownerships | Y | Provides a measure of G-WL-3 |
| 12. Miles of roads to be decommissioned on NFS lands | Y | To help measure O-WL-14 |
| 13. Miles of road where RMVs are allowed on NFS lands | Y | To help measure O-WL-13 |
| 14. Road and snow-compacted Trail Density – mi2/mi2 | Y | To help measure O-WL-13 |
| 15. Acres and type of harvest outside of LAUs | Y | To assess impacts to Habitat outside LAUs |
| 16. Cumulative change to unsuitable condition on NFS lands | Y | Provides a measure of S-WL-1 |

## Lynx Habitat – Forest Condition Indicators

| Indicators | | Existing Condition [1] | | Acres and Percent of habitat in 2014 [3] | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Alternative 1 (proposed action) | | Alternative 2 (no action) | | Alternative 3 | |
| | | Acres | % [2] | Acres | % [2] | Acres | % [2] | Acres | % [2] |
| **1a. Snowshoe hare habitat** | | | | | | | | | |
| Lynx Analysis Units | SNF 12 | 29,821 | 62.5 | 31,398 | 65.9 | 31,461 | 66.0 | 31,398 | 65.9 |
| | SNF 15 | 17,712 | 71.0 | 17,387 | 69.7 | 17,628 | 70.7 | 17,387 | 69.7 |
| | SNF 16 | 20,418 | 70.1 | 18,294 | 62.8 | 20,523 | 70.5 | 18,545 | 63.7 |
| | SNF 17 | 16,765 | 78.2 | 17,035 | 79.5 | 17,117 | 79.8 | 17,035 | 79.5 |
| | SNF 21 | 22,812 | 70.1 | 20,202 | 62.1 | 23,036 | 70.8 | 20,450 | 62.9 |
| | SNF 22 | 24,941 | 62.8 | 22,138 | 55.8 | 26,779 | 67.5 | 22,319 | 56.2 |
| | SNF 23 | 7,953 | 56.4 | 7,543 | 53.5 | 7,620 | 54.1 | 7,543 | 53.5 |
| | Total | 140,422 | | 133,997 | | 144,164 | | 134,677 | |
| **1b. Young Habitat Unsuitable for Snowshoe Hare** | | | | | | | | | |
| Lynx Analysis Units | SNF 12 | 593 | 1.2 | 108 | 0.2 | 46 | 0.1 | 108 | 0.2 |
| | SNF 15 | 211 | 0.8 | 183 | 0.7 | 69 | 0.3 | 183 | 0.7 |
| | SNF 16 | 0.3 | 0 | 927 | 3.2 | 84 | 0.3 | 764 | 2.6 |
| | SNF 17 | 225 | 1.0 | 60 | 0.3 | 42 | 0.2 | 60 | 0.3 |
| | SNF 21 | 539 | 1.7 | 1,858 | 5.7 | 216 | 0.7 | 1,631 | 5.0 |
| | SNF 22 | 88 | 0.2 | 2,050 | 5.2 | 41 | 0.1 | 1,869 | 4.7 |
| | SNF 23 | 92 | 0.7 | 137 | 1.0 | 61 | 0.4 | 137 | 1.0 |
| | total | 1,748 | | 5,323 | | 559 | 0 | 4,752 | |
| **2. Red Squirrel Habitat** | | | | | | | | | |
| Lynx Analysis Units | SNF 12 | 15,042 | 31.6 | 15,462 | 32.5 | 15,465 | 32.5 | 15,462 | 32.5 |
| | SNF 15 | 7,452 | 29.9 | 7,788 | 31.2 | 7,678 | 30.8 | 7,788 | 31.2 |
| | SNF 16 | 10,086 | 34.7 | 10,013 | 34.4 | 10,180 | 35.0 | 10,055 | 34.5 |
| | SNF 17 | 8,244 | 38.4 | 8,832 | 41.2 | 8,827 | 41.2 | 8,832 | 41.2 |
| | SNF 21 | 12,440 | 38.2 | 13,212 | 40.6 | 13,541 | 41.6 | 13,212 | 40.6 |
| | SNF 22 | 12,920 | 32.5 | 13,849 | 34.9 | 14,133 | 35.6 | 13,849 | 34.9 |
| | SNF 23 | 6,555 | 46.5 | 7,989 | 56.7 | 8,003 | 56.8 | 7,989 | 56.7 |
| | total | 72,739 | | 77,145 | | 77,827 | | 77,187 | |
| **Other Indicators** | | **Acres** | **% [2]** | **Acres** | **% [2]** | **Acres** | **% [2]** | **Acres** | **% [2]** |
| | | | | | | | | | |

| Indicators | | Existing Condition [1] | | Acres and Percent of habitat in 2014 [3] | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Alternative 1 (proposed action) | | Alternative 2 (no action) | | Alternative 3 | |
| | | Acres | % [2] | Acres | % [2] | Acres | % [2] | Acres | % [2] |
| **10. Acres of snowshoe hare habitat in which within stand structure will be increased[4]** | | | | | | | | | |
| Lynx Analysis Units | SNF 12 | n/a | n/a | 18 | 0.1 | 0 | 0 | 18 | 0.1 |
| | SNF 15 | n/a | n/a | 57 | 0.2 | 0 | 0 | 57 | 0.2 |
| | SNF 16 | n/a | n/a | 325 | 1.1 | 0 | 0 | 295 | 1.0 |
| | SNF 17 | n/a | n/a | 65 | 0.3 | 0 | 0 | 65 | 0.3 |
| | SNF 21 | n/a | n/a | 102 | 0.3 | 0 | 0 | 51 | 0.1 |
| | SNF 22 | n/a | n/a | 356 | 0.9 | 0 | 0 | 356 | 0.9 |
| | SNF 23 | n/a | n/a | 0 | 0 | 0 | 0 | 0 | 0 |
| total | | n/a | n/a | 923 | | 0 | | 842 | |

*Data Source:* [1] Existing Condition based on April 2006 frozen CDS data
*Other Footnotes:* [2] Percent of lynx habitat on NFS lands (SNF 12 = 47,645 ac, SNF 15 = 24,934 ac, SNF 16 = 29,107 ac, SNF 17 = 21,441 ac, SNF 21 = 32,530 ac, SNF 22 = 39,700, SNF 23 = 14,090)
[3] Includes proposed actions and cumulative actions to date on federal lands within each LAU. This figure represents the worst case and assumes that all present and proposed actions will be in the 0-4 age class at the same time.
[4] Includes riparian underplanting and planting of conifer in clearcut or shleterwood with reserve stands.

| Indicators | | Existing Condition [1] | | Acres and Percent of habitat in 2014 [2] | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Alternative 1 (proposed action) | | Alternative 2 (no action) | | Alternative 3 | |
| | | Acres | % [3] | Acres[4] | % [3] | Acres[4] | % [3] | Acres[4] | % [3] |
| **3. Denning Habitat in patches > 5 acres** | | | | | | | | | |
| Lynx Analysis Units | SNF 12 | 19,382 | 40.7 | 20,380 | 42.8 | 20,294 | 42.6 | 20,380 | 42.8 |
| | SNF 15 | 11,102 | 44.5 | 12,066 | 48.4 | 12,095 | 48.5 | 12,066 | 48.4 |
| | SNF 16 | 10,127 | 34.8 | 11,388 | 39.1 | 12,492 | 42.9 | 11,667 | 40.1 |
| | SNF 17 | 10,319 | 48.1 | 10,840 | 50.6 | 10,891 | 50.8 | 10,840 | 50.6 |
| | SNF 21 | 14,569 | 44.8 | 13,255 | 40.7 | 14,921 | 45.9 | 13,483 | 41.4 |
| | SNF 22 | 18,094 | 45.6 | 17,410 | 43.9 | 19,550 | 49.2 | 17,591 | 44.3 |
| | SNF 23 | 4,406 | 31.2 | 4,800 | 34.1 | 4,878 | 34.6 | 4,800 | 34.1 |
| Total | | 87,999 | | 90,139 | | 95,121 | | 90,826 | |

| 4. Acres and Percent of lynx habitat with adequate canopy cover | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Lynx Analysis Units | SNF 12 | 41,050 | 86.2 | 41,191 | 86.5 | 41,191 | 86.5 | 41,191 | 86.5 |
| | SNF 15 | 20,882 | 83.7 | 20,884 | 83.8 | 20,884 | 83.8 | 20,884 | 83.8 |
| | SNF 16 | 24,516 | 84.2 | 24,593 | 84.5 | 24,597 | 84.5 | 24,593 | 84.5 |
| | SNF 17 | 17,725 | 82.7 | 17,781 | 82.9 | 17,775 | 82.9 | 17,781 | 82.9 |
| | SNF 21 | 28,669 | 88.1 | 28,805 | 88.5 | 28,742 | 88.4 | 28,805 | 88.5 |
| | SNF 22 | 33,181 | 83.6 | 33,361 | 84.0 | 33,202 | 83.6 | 33,361 | 84.0 |
| | SNF 23 | 12,501 | 88.7 | 12,501 | 88.7 | 12,501 | 88.7 | 12,501 | 88.7 |
| total | | 178,524 | | 179,116 | | 178,892 | | 179,116 | |

*Data Source:* [1] Existing Condition based on April 2006 frozen CDS data
*Other Footnotes:* [2] Includes proposed actions and cumulative to date on federal lands within each LAU. This figure represents the worst case and assumes that all present and proposed actions will be in the 0-4 age class at the same time.
[3] Percent of lynx habitat on NFS lands (SNF 12 = 47,645 ac, SNF 15 = 24,934 ac, SNF 16 = 29,107 ac, SNF 17 = 21,441 ac, SNF 21 = 32,530 ac, SNF 22 = 39,700, SNF 23 = 14,090)
[4] Acres removed

## Lynx Habitat – Cumulative Vegetative Effects Indicators

| Lynx Analysis Units | Total Lynx Habitat on all ownerships (acres) | Currently Unsuitable | |
|---|---|---|---|
| | | Acres | % |
| **Indicator 11: Currently Unsuitable Lynx Habitat on all ownerships (G-WL-3 ≤30%)** | | | |
| SNF 12 | 70,980 | 4,104 | 5.8 |
| SNF 15 | 44,609 | 1,652 | 3.7 |
| SNF 16 | 76,109 | 2,211 | 2.9 |
| SNF 17 | 44,668 | 3,855 | 8.6 |
| SNF 21 | 73,253 | 3,097 | 4.2 |
| SNF 22 | 58,139 | 818 | 1.4 |
| SNF 23 | 27,627 | 2,942 | 10.6 |

*Data Source:* [1] Acreages based on April 2006 CDS data
*Other Footnotes:* Data for suitability was obtained for all Federal, State, and Lake County (8/05 timber sales) within the whole LAUs. TNC and Saint Louis County data was obtained within the Whyte project area. Photo interpretation was done on private land within the Whyte project area and within the rest of LAU21 because of the large amounts of private land. Photo interpretation was also done for all of the Saint Louis county land. Processes and results are documented in the project record. Therefore, all private land (except for within LAU21) outside the Whyte project area, but within the affected LAUs was assumed to be in an unsuitable condition.

| LAUs | Existing Condition 2005 [2] | | Change to unsuitable condition in a 10 year period (2004-2014) [3] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Alternative 1 (proposed action) | | | Alternative 2 (no action) | | | Alternative 3 | | |
| | | | Present Actions | Total Change | | Proposed Change | Total Change | | Proposed Change | Total Change | |
| | Acres | % [3] | Acres[4] | Acres | % [3] | Acres[4] | Acres | % [3] | Acres[4] | Acres | % [3] |
| **Indicator 16: Cumulative change to unsuitable condition in 10 years on NFS lands (S-WL-1 ≤15%).** | | | | | | | | | | | |
| SNF 12 | 593 | 1.2 | 108 | 701 | 1.5 | 46 | 639 | 1.3 | 108 | 701 | 1.5 |
| SNF 15 | 211 | 0.8 | 183 | 394 | 1.6 | 69 | 280 | 1.1 | 183 | 394 | 1.6 |
| SNF 16 | 0.3 | 0 | 927 | 927 | 3.2 | 84 | 84 | 0.3 | 764 | 764 | 2.6 |
| SNF 17 | 225 | 1.0 | 60 | 285 | 1.3 | 42 | 267 | 1.2 | 60 | 285 | 1.3 |
| SNF 21 | 539 | 1.7 | 1,858 | 2,397 | 7.4 | 216 | 755 | 2.3 | 1,631 | 2,170 | 6.7 |
| SNF 22 | 88 | 0.2 | 2,050 | 2,138 | 5.4 | 41 | 129 | 0.3 | 1,869 | 1,957 | 4.9 |
| SNF 23 | 92 | 0.7 | 137 | 229 | 1.6 | 61 | 153 | 1.1 | 137 | 229 | 1.6 |

*Data Source:* [1] Existing Condition based on April 2005 Frozen CDS data. Reflects past actions since FP Implementation began that have resulted in a change to unsuitable.

*Other Footnotes:* Percent of lynx habitat on NFS lands (SNF 12 = 47,645 ac, SNF 15 = 24,934 ac, SNF 16 = 29,107 ac, SNF 17 = 21,441 ac, SNF 21 = 32,530 ac, SNF 22 = 39,700, SNF 23 = 14,090)

[4] Includes proposed actions and cumulative actions (Tomahawk EA, Dunka EA, and Wetlegs, Laird and Partridge sales) to date on federal lands within each LAU. This figure represents the worst case and assumes that all present and proposed actions will be in the 0-4 age class at the same time.

## Lynx Habitat – Human disturbance/Access Indicators

| Indicators | | Existing Condition [1] | Miles of road in 2014 [3] | | |
|---|---|---|---|---|---|
| | | | Alternative 1 | Alternative 2 (No action) | Alternative 3 |
| | | miles | miles | miles | Miles |
| **7. Miles of Temporary, OML 1 and 2 (Combined)** | | | | | |
| Lynx Analysis Units | SNF 12 | 0, 15.1 (15.1) | 2.1, 15.1 (17.2) | 0, 15.1 (15.1) | 2.1, 15.1 (17.2) |
| | SNF 15 | 0, 13.6 (13.6) | 3.6, 13.6 (17.2) | 0, 13.6 (13.6) | 3.2, 13.6 (17.0) |
| | SNF 16 | 0, 27.7 (27.7) | 14.8, 28.1 (42.9) | 0, 27.7 (27.7) | 11.5, 28.1 (39.6) |
| | SNF 17 | 0, 12.0 (12.0) | 0.3, 13.4 (13.7) | 0, 12.0 (12.0) | 0.3, 13.4 (13.7) |
| | SNF 21 | 0, 37.3 (37.3) | 18.1, 37.4 (55.5) | 0, 37.3 (37.3) | 16.3, 37.4 (53.7) |
| | SNF 22 | 0, 33.7 (33.7) | 22.5, 35.1(57.6) | 0, 33.7 (33.7) | 21.1, 35.1 (56.2) |
| | SNF 23 | 0, 15.1 (15.1) | 0.8, 15.1 (15.9) | 0, 15.1 (15.1) | 0.8, 15.1 (15.9) |
| | Total | 0, 154.5 (154.5) | 62.2, 157.8 (220.0) | 0, 154.5 (154.5) | 55.3, 157.8 (213.1) |
| **Other Indicators** | | | | | |
| **12. Miles of road to be decommissioned** | | | | | |
| Lynx Analysis Units | SNF 12 | 0 | 0 | 0 | 0 |
| | SNF 15 | 0 | 1.1 | 0 | 1.1 |
| | SNF 16 | 0 | 5.4 | 0 | 5.4 |
| | SNF 17 | 0 | 1.4 | 0 | 1.4 |
| | SNF 21 | 0 | 3.9 | 0 | 3.9 |
| | SNF 22 | 0 | 7.5 | 0 | 7.5 |
| | SNF 23 | 0 | 0 | 0 | 0 |
| | total | 0 | 19.3 | 0 | 19.3 |
| **13. Miles of road where RMVs (Forest Service land) are allowed.** | | | | | |
| Lynx Analysis Units | SNF 12 | 20.6 | 20.6 | 20.6 | 20.6 |
| | SNF 15 | 23.4 | 22.3 | 23.4 | 22.3 |
| | SNF 16 | 46.8 | 41.8 | 46.8 | 41.8 |
| | SNF 17 | 15.7 | 15.7 | 15.7 | 15.7 |
| | SNF 21 | 51.2 | 47.4 | 51.2 | 47.4 |
| | SNF 22 | 62.4 | 55.4 | 62.4 | 55.4 |
| | SNF 23 | 17.8 | 17.8 | 17.8 | 17.8 |
| | total | 237.9 | 221.0 | 237.9 | 221.0 |

| | | Existing Condition [1] | Miles of road in 2014 [3] | | |
|---|---|---|---|---|---|
| | | | Alternative 1 | Alternative 2 (No action) | Alternative 3 |
| **Indicators** | | **miles** | **miles** | **miles** | **Miles** |
| **14. Road and snow-compacted Trail Density – mi2/mi2** | | | | | |
| Lynx Analysis Units | SNF 12 | 0.95 | 0.95 | 0.95 | 0.95 |
| | SNF 15 | 1.73 | 1.70 | 1.73 | 1.70 |
| | SNF 16 | 2.09 | 1.98 | 2.09 | 1.98 |
| | SNF 17 | 1.58 | 1.54 | 1.58 | 1.54 |
| | SNF 21 | 1.94 | 1.86 | 1.94 | 1.86 |
| | SNF 22 | 1.56 | 1.44 | 1.56 | 1.44 |
| | SNF 23 | 1.47 | 1.43 | 1.47 | 1.43 |

*Data Source:* [1] Existing Condition and alternatives based on updated roads shapefile for roads within the Whyte project area (summer 2006) and September 2006 Forestwide INFRA roads cover in portions of LAUs outside of the project area. Trail and compacted snow routes data from FP analysis was used.
*Other Footnotes:* Miles of road where RMVs allowed includes OML 1and 2 cs, unclassified, uatv. This figure does not represent the amount of cross-country use by snowmobiles. Road and trail density based on linear mile per square land mile and is a cumulative measure that includes non-federal roads.

| **15. Acres and type of harvest outside of LAUs.** | | | | | | |
|---|---|---|---|---|---|---|
| Treatment type | Alternative 1 | %* | Alternative 2 (No action) | %* | Alternative 3 | %* |
| Clearcut | 134 | 1.6% | 0 | 0% | 134 | 1.6% |
| Thinning | 236 | 2.7% | 0 | 0% | 236 | 2.7% |
| Overstory removal | 76 | 0.9% | 0 | 0% | 76 | 0.9% |
| Reforestation | 38 | 0.4% | 0 | 0% | 38 | 0.4% |

* Percent of USFS land outside of designated LAUs (8,629 acres)

## C. Consistency with Forest Plan:

| Canada Lynx | | | | |
|---|---|---|---|---|
| **Forest Plan Guidance** | **Direction** | **Alts. In Compliance** | **Basis for Compliance** | **Remarks** |
| O-WL-4 | Maintain or improve habitat | 1-3 | All analysis indicators | Alternative 2 maintains lynx habitat, any improvement would be due to natural succession. Alternatives 1 and 3 improve lynx habitat by increasing within stand diversity and structure with conifer planting. In Alternative 2 red pine and spruce plantations would not be thinned, reducing both the age at which those plantation trees produce cones and the quantity of cones produced. Thinning in Alternatives 1 and 3 will improve cone production at an earlier age in red pine and spruce plantations, positively affecting red squirrels. Project planning maintained habitat connectivity through maintaining all upland mature patches over 300 acres. |
| O-WL-5 | Seek opportunities to benefit TE spp. | 1-3 | All analysis indicators | Alternative 2 maintains lynx habitat, any improvement would be due to natural succession. Alternatives 1 and 3 improve lynx habitat by increasing within stand diversity and structure with conifer planting. |
| O-WL-6 | Reduce or eliminate adverse effects to TE | 1-3 | Indicators 11-13, mitigations, and standard management requirements | In Alternative 2 there are no changes to roads. In Alternatives 1 and 3 road and snow-compacted trail density change from a range of 0 to 0.12 miles per square mile. Changes in effects would be minor but beneficial. |
| O-WL-7 | Minimize building or upgrading roads in TE areas | 1-3 | Indicators 12-13 | No permanent roads would be built. Roads are being decommissioned when no longer needed for administrative access. The 2.4 miles of roads to be added to the system in Alt. 1 and 3 already exist and will not need upgrading. |

| Canada Lynx | | | | |
|---|---|---|---|---|
| **Forest Plan Guidance** | **Direction** | **Alts. In Compliance** | **Basis for Compliance** | **Remarks** |
| O-WL-8 | Promote the conservation and recovery of Canada lynx | 2-3 | Indicator 14 | Hiding cover will be improved through planting of conifers and natural regeneration in Alternatives 1 and 3. There would be no increase in cover beyond natural regeneration under existing canopies in Alternative 2. |
| O-WL-9 | Manage for hare and alternate prey habitat | 1-3 | Indicators 1-3 | In all alternatives prey habitat is abundant with more than 53% of the federal land in hare habitat and/or more than 30% of the federal land in squirrel habitat in all LAUs. |
| O-WL-10 | Provide foraging habitat in proximity to denning habitat | 1-3 | Habitat map (Appendix B) | Foraging and denning habitat are and would remain well distributed through out the project in all alternatives. |
| O-WL-11 | Maintain habitat connectivity to reduce road mortality | 1-3 | Habitat map | Foraging and denning habitat are and would remain well distributed through out the project in all alternatives. |
| O-WL-12 | Participate in efforts to identify, map, and maintain linkage areas | 1-3 | Habitat map | Foraging and denning habitat are and would remain well distributed through out the project in all alternatives. |
| O-WL-13 | Maintain competitive advantage of lynx in deep snow | 1-3 | Indicators 12-13 | Roads are being decommissioned when no longer needed for administrative access. Temporary roads will be obliterated after use. |
| O-WL-14 | Participate in efforts to reduce lynx mortality on roads | 1-3 | Indicators 12-13 | Roads are being decommissioned when no longer needed for administrative access. Temporary roads will be obliterated after use. |
| O-WL-15 | In BWCAW, lynx habitat will result from natural processes | n/a | n/a | The project area does not include the BWCAW |
| G-WL-1 | Moderate timing and intensity of mgt activities to maintain lynx habitat | 1-3 | Time frame of the action | Activities would take place over the course of 10 years. There is sufficient habitat to accommodate changes. |

| Canada Lynx | | | | |
|---|---|---|---|---|
| **Forest Plan Guidance** | **Direction** | **Alts. In Compliance** | **Basis for Compliance** | **Remarks** |
| G-WL-2 | Provide protection of known den sites | n/a | Mitigations | No den sites are known in the project area. |
| G-WL-3 | No more than 30% of an LAU in unsuitable condition | 1-3 | Indicator 10 | All LAUs are below 11% unsuitable prior to any actions. |
| S-WL-1 | No more than 15% change to unsuitable in 10 years | 1-3 | Indicator 11 | All alternatives would keep the unsuitable condition below 15%. Alternative 1 has the greatest effect in LAU SNF21 with a change to 5.7% unsuitable. |
| G-WL-4 | Maintain at least 10% denning habitat in patches > 5 acres | 1-3 | Indicator 3 | Based on changes from existing condition without succession, all alternatives would retain denning habitat in patches >5 acres on 34% to 51% of lynx habitat. This is well above the 10% guideline. |
| G-WL-5 | Following disturbance, retain at least 10% | 1-3 | Indicator 3 | More than 34% of National Forest System land would remain in denning habitat in all alternatives. |
| S-WL-2 | No net increase in groomed or designated over-the-snow trails | 1-3 | n/a | No groomed or designated over-the-snow trails are proposed in any alternative |
| G-WL-6 | New over-the-snow routes should be designed to benefit lynx | 1-3 | n/a | No groomed or designated over-the-snow trails are proposed in any alternative |
| G-WL-7 | Close trails and roads that intersect with new snow-compacting trails. | 1-3 | n/a | No groomed or designated over-the-snow trails are proposed in any alternative |

| Canada Lynx | | | | |
|---|---|---|---|---|
| **Forest Plan Guidance** | **Direction** | **Alts. In Compliance** | **Basis for Compliance** | **Remarks** |
| G-WL-8 | Maintain road density at or below 2mi/mi$^2$ | 1-3 | Indicator 12 | All LAUs, except SNF 16, are below 2.0 miles per square mile in all alternatives. The existing condition of SNF 16 is 2.09 miles per square mile. The density would remain the same in Alternative 2 and decrease to 1.98 miles per square mile in Alternatives 1 and 3. All action alternatives decrease road density due to decommissioning unneeded roads. |
| G-WL-9 | Do not upgrade or pave dirt or gravel roads | 1-3 | n/a | No upgrading or paving of dirt or gravel roads is planned in any of the alternatives. County Highway 2 is currently paved and upgrading would not change the speed limit or alignment of the road. |

**CUMULATVE EFFECTS (NEPA and ESA)**

Cumulative effects could occur as a result of future federal actions or actions that occur on lands outside of Forest Service jurisdiction (Appendix A). The cumulative effects to the forest conditions of lynx habitat (Indicator 11) from vegetation management activities and the effects of human disturbance/access as a result of road and trail management (Indicator 15) are measured.

Adverse cumulative effects are not expected from cumulative vegetation management activities in LAUs SNF 10, 11, 12 or 19. More than 85% of each of these LAUs is currently providing suitable lynx habitat on all ownerships (Indicator 11). SNF 23 currently has the highest amount of unsuitable habitat at 10.6%. Under Alternative 1 (the action alternative with the highest change to unsuitable), the amount of unsuitable would increase to 11.6%. Despite the reduction in suitable habitat for lynx adequate amounts of foraging and denning habitat would remain in all LAUs. Denning and foraging habitat will continue to be adequately distributed throughout these 7 LAUs.

As stated in the Programmatic BA, the greatest potential for cumulative negative impacts and pressure on lynx recovery is likely to be the result of human access. Road densities in 6 of the 7 LAUs are currently below 2 miles per sq. mile in all action alternatives (Indicator 14). SNF 16 was at 2.01 miles/square mile but with the proposed road decommissionings it will fall below 2 miles/square mile. All LAUs, except SNF 12, will have a reduction in road density from the proposed actions. SNF

12 will have no change. Private land development and road building will continue as will increased recreational demand in these LAUs. These activities could reduce the lynx competitive advantage and increase the risk of mortality.

**(Additional NEPA Cumulative effect)**
In addition, Lake County is proposing to upgrade Highway 2 which runs through SNF 17 and 22. This project could have direct, indirect or cumulative adverse effects to the lynx. Ten proposed special use access permits to access private lands could also contribute to cumulative effects in this area. Site-specific analysis and consultation on these projects will occur to address potential effects.

**D. Determination of Effect**

| Management Activity | Determination | Consistent with Programmatic BA determination? |
|---|---|---|
| Timber Harvest | NLAA | Y |
| Reforestation | NLAA | Y |
| Non-harvest restoration | NLAA | Y |
| Road Management | NLAA | N* (Programmatic BA - LAA) |

| **Lynx** | | |
|---|---|---|
| **Alternative** | **Determination** | **Summary of Rationale** |
| Alternative 1 | NLAA | Habitat changes are temporary and would provide an adequate amount and diversity of lynx and lynx prey habitat as stands age. Connectivity is provided by habitat on all ownerships. Habitat for lynx prey is improved. Human disturbance factors are minimized by road closures. All LAUs will have a decrease in road density except SNF 12 which will remain the same. |
| Alternative 2 (No action) | NLAA | Habitat changes would occur due to succession and natural disturbances. Adequate lynx and lynx prey habitat and spatial needs would be available. |
| Alternative 3 | NLAA | Habitat changes are temporary and would provide an adequate amount and diversity of lynx and lynx prey habitat as stands age. Connectivity is provided by habitat on all ownerships. Habitat for lynx prey is improved. Human disturbance factors are minimized by road closures. All LAUs will have a decrease in road density except SNF 12 which will remain the same. |

| Lynx Habitat outside LAUs | | |
|---|---|---|
| **Alternatives** | **Determination** | **Summary of Rationale** |
| Alternative 1 | NLAA | 484 acres of treatment will occur on USFS land outside designated LAUs. Only 134 acres of this will temporarily make this habitat unsuitable for snowshoe hare. Habitat changes are temporary and would provide an adequate amount and diversity of lynx and lynx prey habitat as stands age. Connectivity is provided by habitat on all ownerships. Habitat for lynx prey is improved. Human disturbance factors are minimized by road closures. |
| Alternative 2 (No action) | NLAA | Habitat changes would occur due to succession and natural disturbances. Adequate lynx and lynx prey habitat and spatial needs would be available. |
| Alternative 3 | NLAA | 484 acres of treatment will occur on USFS land outside designated LAUs. Only 134 acres of this will temporarily make this habitat unsuitable for snowshoe hare. Habitat changes are temporary and would provide an adequate amount and diversity of lynx and lynx prey habitat as stands age. Connectivity is provided by habitat on all ownerships. Habitat for lynx prey is improved. Human disturbance factors are minimized by road closures. |

# 6.0 Site-specific Mitigations

For a complete list of site-specific mitigations please refer to the Whyte PEA.

# 7.0 Monitoring

The Forest Plan identifies three monitoring elements related to threatened and endangered species (Chapter 4, Table MON-4):

- To what extent is Forest management contributing to the conservation of threatened and endangered species and moving toward short term (10-20 years) and long-term (100 years) objectives for their habitat conditions and population trends?
- To what extent are road and trail closures effective in prohibiting unauthorized motor vehicle use?
- To what extent is the Forest maintaining no net increase in groomed or designated over-the-snow trail routes unless the designation effectively consolidates use and improves lynx habitat through a net reduction of compacted snow areas?

Completed by: ____/s/ Dan Ryan_____Date: __February 2, 2007___
Dan Ryan, Wildlife Biologist

# 8.0 References

Burdett, Chris. Natural Resources Research Institute (NRRI). Minnesota Lynx Project. Past and current status of Canada lynx in the requested home ranges for the Devil Trout Project Area. 12/9/2005.

Erb, J. and S. Benson. 2004. Distribution and abundance of wolves in Minnesota, 2003-04. Unpublished report. Minnesota Department of Natural Resources. http://files.dnr.state.mn.us/natural_resources/animals/mammals/wolves/2004_wolfsurvey_report.pdf [Accessed December 20, 2005]

Minnesota Natural Heritage Program. 2006. Rare Features Database: rare species occurrences on the Superior National Forest. St. Paul, Minnesota.

MN DNR (Minnesota Department of Natural Resources). 2005. Canada lynx sightings in Minnesota (March 2000 – December 13, 2005). http://www.dnr.state.mn.us/ecological_services/nhnrp/research/lynx_sightings.html [Accessed December 20, 2005]

MN DNR (Minnesota Department of Natural Resources). 2006. 2005 Minnesota bald eagle surveys. Minnesota Dept. of Natural Resources, Nongame Wildlife Program, Division of Ecological Services. St. Paul, MN.

Nelson, Mike. 2006. U. S. Geological Survey (USGS). Minnesota Wolf Project. Conversation with Lissa Grover, USFS, on April 18, 2006

Oetker, Susan. 2006. USFWS. Email to Mary Shedd regarding Superior National Forest analyses and proposed lynx critical habitat. May 4, 2006.

USDA Forest Service. 2004a. Land and Resource Management Plan. Superior National Forest, Duluth, MN.

USDA Forest Service. 2004b. Forest Plan Revision Biological Assessment. Superior National Forest, Duluth, MN.

USDI, Fish and Wildlife Service. Letter providing a list of all endangered, threatened, proposed, and candidate species, and designated and proposed critical habitat that occurs within the Superior National Forest. Dan Stinnett, October 3, 2005

# Appendix A

## Whyte Project Cumulative Effects List

The Laurentian Ranger District of the Superior National Forest is completing an environmental analysis for the Whyte Forest Management Project. The project proposes to manage vegetation and associated roads, on approximately 9,850 acres. As part of the effects analysis, resource specialists determined cumulative effects that would occur under each alternative.

The President's Council on Environmental Quality (CEQ) defined "cumulative impact" in regulations implementing the procedural provisions of NEPA as follows:

"Cumulative impact" is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. *(40 CFR 1508.7)*

### Past, On-going, and Future Projects

The following list identifies the known past, on-going, and proposed future projects occurring in or near the Whyte Project Area.

**Correll Land Exchange** – The USFS is proceeding with a land exchange with Randy Correll. The United States will receive 760.00 acres of private land. The proponent will receive 720.00 acres of National Forest System land. The existing condition of the vegetation on the land the USFS is acquiring has been taken into account in the project.

The Correll's stated that the land they would acquire would not be logged and they may construct a house and associated roads. The land the US would acquire is currently young forest and no additional management actions would be planned in the near future.

**Rifle Land Exchange with Lake County** –specific lands are under consideration but the agency has not yet developed a proposed action.

**Forest Service vegetation management** within past 10 years

| | |
|---|---|
| Regeneration harvest | 1,355 acres |
| Thinning | 743 acres |
| Planting | 310 acres |

**Estimate of State, Counties, TNC, and Private forest aged 0-9 (shows regeneration harvest occurring during past 10 years)**

| | |
|---|---|
| State | 2035 acres |
| Lake and St. Louis Counties | 2325 acres |
| The Nature Conservancy | 388 acres |
| Private | 638 acres |

**Estimate of State, Counties, TNC, and private proposed harvest in next 5 to 10 years**

| | |
|---|---|
| State | 12,856 acres |
| Lake and St. Louis Counties | 861 acres* |

| | |
|---|---|
| The Nature Conservancy | 462 acres |
| Private | Unknown but estimated to be similar to past 10 years |

* Lake County cover for current sales only.
State shows potential acres only, not actual planned acres. Planned acres would be less.

**Upgrade of County State Aid Highway 2** – the portion of road south from FH 11 is proposed to be reconstructed in 2007. May impact some Federal land along the road where existing road is widened but would not result in a measurable change in species composition, age class, MIH, or wildlife habitat.

**Mining** – We are not aware of any mining proposals in or near the project area.

**Land development** – Potlatch has leased some lands but no other changes or plans are known.

**Land sales or leasing** – Land continues to be bought and sold throughout the area. No major projects are known.

**Rural Schools Initiative** – 240 acres of land in the Project Area were included in the Secure Rural Schools Initiative. At this time, there is no active move toward implementing this initiative. Management actions are proposed on 2 of the tracts. It is unlikely the Whyte project would affect this initiative.

**Moose browse projects** – cooperative project between the USFS and MN DNR to mow brushy sites to create moose forage areas. No new projects are planned at this time.

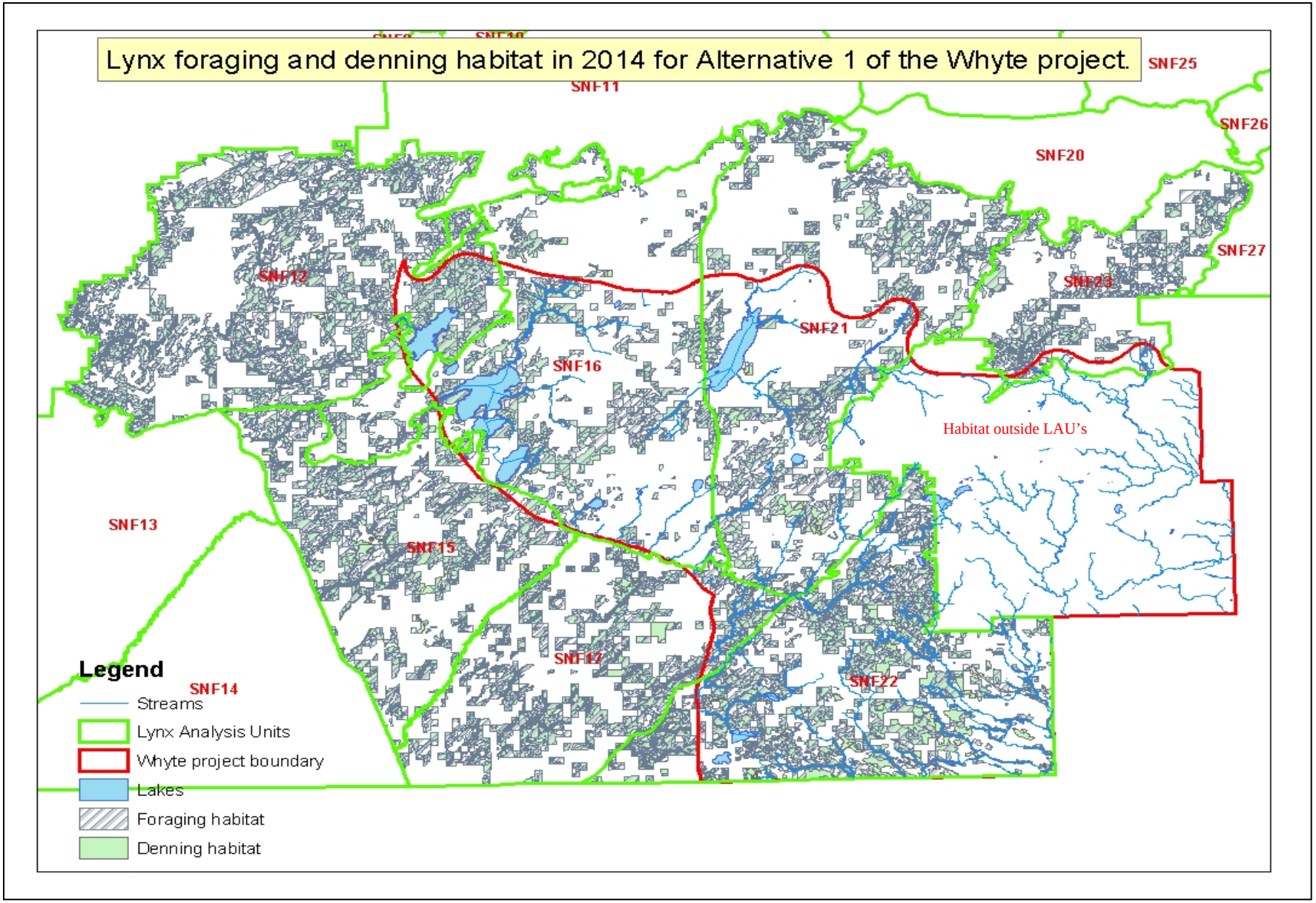
**Sand Lake Seven Beavers Memorandum of Understanding** – a collaborative effort between The Nature Conservancy, St. Louis County, Lake County, Forest Service, and MN DNR. The Whyte Project Team collaborated with the SL7B group in developing proposed vegetation projects. Collaboration continues to occur between all groups for road access and vegetation management on State, County, and TNC lands.

**Lake County ATV Plan** – a collaborative effort between the county, State of MN, and USFS to plan for ATV trails. Group is just forming and no specific proposals have been identified.

**Lake County Wild Fire Protection Plan –** Plan is complete. No specific proposals in the project area.

**Special Use Permit requests** there are 10 known access needs in the area. The roads currently exist so the permitting process would not lead to additional miles of road on the ground.

**Superior National Forest Landscape Ecosystems.** The existing condition for the vegetation age class, species composition, and management indicator habitats was used as a baseline for existing condition and to determine cumulative effects. All of the projects with decisions but not yet implemented, along with specific proposed actions, have been added together, to show the cumulative effects of all the vegetation projects occurring on National Forest land. This analysis was run during September 2006 and the effects are summarized in Chapter 3. The full report is in the Project Record.


Lynx foraging and denning habitat in 2014 for Alternative 1 of the Whyte project.
SNF25
SNF11
SNF26
SNF20
SNF27
SNF12
SNF23
SNF21
SNF16
Habitat outside LAU's
SNF13
SNF15
SNF17
SNF22
SNF14
Legend
Streams
Lynx Analysis Units
Whyte project boundary
Lakes
Foraging habitat
Denning habitat