## 3.4 THREATENED AND ENDANGERED SPECIES (Canada lynx)

### 3.4.1 Summary

All alternatives may affect but are not likely to adversely affect the Canada lynx because vegetation is maintained with adequate amounts of snowshoe hare and red squirrel habitat. There would be adequate denning habitat, although less denning habitat under Alternatives 2 and 3 than under Alternative 1. The acres of unsuitable habitat would increase under Alternatives 2 and 3 but would remain below Forest Plan limits. Connectivity would be maintained between and within Lynx Analysis Units (LAU), including the Fernberg Corridor that is bordered on the north and south by the Boundary Waters Canoe Area Wilderness (BWCAW) because of areas not impacted by harvest. The project has minimal effect on the road density, because few roads are being added to the system and few would be decommissioned. However, all temporary roads would be closed to public use and would be decommissioned upon completion of work.

### 3.4.2 Introduction

This section summarizes the key findings and determinations of the Glacier Biological Assessment (BA) on Threatened and Endangered Species. The District Ranger considers information from the biological assessment in comparing and selecting alternatives. Table 3.4-1 lists all federally proposed, candidate, threatened or endangered species and designated critical habitat that are known or suspected to occur in the project and analysis area and those to which effects could occur. The U.S. Fish and Wildlife Service recently removed Endangered Species Act protection for Gray Wolf and Bald Eagle that occur in Minnesota. We will continue to consider project effects to these species in our analysis of Regional Forester Sensitive Species (see Section 3.7). Detailed discussion on the effect to Threatened and Endangered Species can be found in the Glacier Biological Assessment which is located in Appendix G of this document.

**Table 3.4-1. Threatened or Endangered Species known or suspected to occur within the Project Area (Federal list)**

| Species | Status | Critical Habitat |
|---|---|---|
| Canada lynx | Threatened | no |

### 3.4.3 Analysis Methods

The analysis of effects was conducted primarily through the use of quantitative indicators and other relevant scientific information. These were selected based on consideration of 1) species' environmental requirements (*e.g.,* habitat quantity, quality, and spatial pattern), life history, and distributional range and on 2) potential impacts of management activities. Analysis focused on the predominant risk factors pertinent to the species.

The information used to develop analysis methods is based on currently accepted and applicable scientific literature and other scientific sources, as well as information from species experts and professional judgment of Forest Service biologists. The key sources for Canada lynx information include those developed for the Forest Plan 2004 (Forest Plan FEIS, vol. 1, Section 3.3.4; vol. 2, p. B-29; Forest Plan Biological Assessment (USDA Forest Service 2004a, Forest Plan planning record

#20690) and new relevant information collected for this project and documented in the Biological Assessment of the Glacier Project, included here as Appendix G.

To briefly summarize the analysis methods of the biological assessment (BA), the threatened species that are known to occur or have suitable habitat in the project area are addressed by:

- *Habitat indicators* of important forest vegetation conditions, such as acres and percent of forest types, ages, and spatial patterns that provide denning, foraging, or cover habitat for threatened species or their key prey species
- *Human disturbance indicators* of effects of human access and potential disturbance, such as miles or density of roads and trails.

### 3.4.4 Analysis Area and Time Scales for Analysis

The Glacier Area Project Biological Assessment documents the boundary and provides rationale for why it was chosen, including tiering to analysis indicators used for Forest Plan Programmatic Biological Assessment (USDA Forest Service 2004a, sections 2.5, 3.5, and 4.5 Factors Affecting Lynx Environment and Analysis Indicators, planning record #20690).

#### Analysis Boundary

The analysis area for direct and indirect effects, for both Forest Plan Programmatic BA and project level indicators includes all lands and roads administered by the Superior National Forest in three Lynx Analysis Units (LAUs): Superior National Forest (SNF) 8, SNF 9, and SNF 10. These units overlap the Glacier Project Area and would be affected by proposed management of the alternatives. Lynx Analysis Units represent a hypothetical lynx home range in size and are intended to be the smallest scale in which to conduct effects analysis. See Superior National Forest Plan Appendix E: Canada Lynx Section 5. *Scales of Analysis*, pg E-3 for more detailed rationale for spatial LAU analysis boundaries. Cumulative effects consider all ownerships and roads within three Lynx Analysis Units (LAUs) that overlap the Glacier Project Area and would be affected by proposed management of the alternatives: SNF 8, SNF 9, and SNF 10

The time scale used for the analysis of direct, indirect, and cumulative effects is ten years (year 2017). This time scale is chosen because it is reasonable to assume that all proposed projects would be implemented by this time and expected effects would have occurred. This is also an appropriate time scale for cumulative effects because it includes all known future projects and allows for the most realistic prediction of other reasonably foreseeable future projects. Present and foreseeable future (ten years) actions are considered in this analysis. Foreseeable future non-federal actions considered in the Project Area are shown in Appendix C.

#### Determination of effects

The analysis of effects to the Canada lynx results in a determination on which of the following three conditions are most likely from the impacts of each of the alternatives. These include:

- *No Effect*
- *May effect but is not likely to adversely affect* – used when it is determined the proposed alternative may cause some negative effects, but they are expected to be discountable, insignificant, or completely beneficial.

- *May effect and is likely to adversely affect* – used if any adverse effect may occur as a direct or indirect result of the proposed alternatives and the effect is not discountable, insignificant or beneficial, or the effect will harm, harass or wound the species.

The determination of effects is used in consultation with the United States Department of the Interior (USDI) Fish and Wildlife Service to help them determine whether or not a proposed action is likely to jeopardize the continued existence of a listed species. The effects analysis and determinations are based on the assumption that all project design criteria and mitigation measures outlined in Appendices E and H would be followed during implementation.

### 3.4.5 Affected Environment

Detailed information about population, habitat condition, trend and known risk or limiting factors, is documented in the Glacier Project Biological Assessment (BA). Where applicable the Glacier Project BA tiers to the Forest Plan Revision Programmatic BA (USDA Forest Service 2004a, Forest Plan record #20690) with respect to defining elements of species' ecology and biology, risk factors and general effects, analysis parameters, monitoring, and management direction in the 2004 Forest Plan. The following briefly summarizes the status of the species in the Project Area:

Lynx are known to occupy the area based on telemetry locations, sighting information and snow tracking surveys (USDA Forest Service 2007, *Summary Report: Glacier Mid-level Snow Tracking Survey. February 2007. Unpublished data. Superior National Forest, Duluth MN*.)

Forest Plan Objectives are to aid in the conservation and recovery of the Canada Lynx. Specifically, objectives direct us to maintain, protect, and improve habitat for the species. Within Lynx Analysis Units (LAU), National Forest System (NFS) Lands should retain, improve or develop habitat characteristics suitable for snowshoe hare and other important alternate prey, provide foraging habitat in proximity to denning habitat and to maintain or restore sufficient habitat connectivity. Important habitat components for lynx are currently abundant and fairly well-distributed throughout the area. Currently, 43% to 71% of the analysis area in the three LAUs is suitable denning habitat, 21% to 45% is suitable red squirrel habitat, 51% to 80% is suitable snowshoe hare habitat, and 93% to 95% of the habitat is providing connective habitat within and between LAUs and Lynx Refugia Habitat (BWCAW). All denning habitat in patches greater than five acres are within three miles of adequate foraging habitat. In addition high road/trail densities are thought to reduce the suitability of otherwise suitable habitats for lynx, by increasing the chance for negative lynx/human interaction and increasing the potential for competition with other predators. Currently, two LAUs, covering the northern half of the project area, are above Forest Plan road/trail density recommendation.

Habitat needs of the Canada Lynx were considered in the development of the proposed action and alternatives for the Glacier Project. All alternatives were designed to protect and/or improve habitat conditions and to meet Standards and Guidelines important for lynx recovery.

### 3.4.6 Environmental Consequences

#### 3.4.6.1 Direct and Indirect Effects

The following section briefly summarizes the potential effects of each alternative on Canada lynx. Detailed analysis is documented in the Glacier Project Biological Assessment (Appendix G).

Indirect and cumulative effects would result from the alteration of vegetative habitat conditions. Direct, indirect and cumulative effects could also result from increased human access or disturbance. The focus in the analysis is on those condition changes that would pose a risk (limiting factors) to species from activities on the Superior National Forest, but beneficial effects are also analyzed.

### Effects Common to All Action Alternatives

While the role of each alternative in managing Canada Lynx habitat may vary (for example, different alternatives provide differing total amounts and quality of suitable habitat conditions), all proposed management activities are developed to generally meet Forest Plan direction to maintain, protect, or improve habitat and reduce or eliminate negative or adverse effects from activities (O-WL-4 through 15, S-WL-1 through 2, G-WL-1 through -9).

Vegetation Management

The key effects of vegetation management are generally indirect and can be both short and long term. Both management, including timber harvest, forest regeneration, site preparation and natural processes such as forest succession, has a variety of potential positive or negative effects to lynx. These vary based on the amount, timing, location, or intensity of management activities. Vegetation management activities may alter (increase or decrease amounts or change distribution or quality of) lynx habitat, their prey, or other species that may influence their habitat (such as impacts to habitat caused by changes in hydrology—for example, increases in water yield due to upland timber harvest.) resulting in positive or negative effects. Direct impacts of vegetation management may also harm, kill, displace, or temporarily disturb lynx depending on seasonal timing or severity of activity. For lynx most effects would include both short and long term direct and indirect potential impacts, which would be both positive and negative.

Road Management

Road management may result in impacts to lynx and their habitat including both direct and indirect effects associated with construction, maintenance, and management of permanent and temporary roads and increased human access to lynx habitat on those roads. New trails may also impact lynx. These effects would vary based on the amount, timing, location, or intensity of management activities. For lynx most effects would include both short and long term direct and indirect potential impacts, and most would be negative.

These may include:

- Direct harm or killing from construction or maintenance
- Increased chance of disturbance or displacement
- Increased likelihood of harm from humans due to shooting, trapping, vehicle collision
- Increased vector for predators, non-native species, or canine diseases from dogs
- Increased interspecific competition from bobcats due to snow compaction

### Alternative 1

Direct/indirect effects

Forest vegetative conditions would continue to provide habitat sufficient for lynx denning, foraging, and movement across the analysis area. There would be slight increases over the existing condition in the total amount of red squirrel and denning habitat as a result of forest succession. There would be slight decreases in snowshoe hare habitat and no acres in which vegetative management would improve stand structure for hare.

High levels of open, low-standard roads would persist throughout much of the analysis area maintaining a higher risk of lynx mortality. Road and compacted trail densities would remain above two miles per square mile in parts of the analysis area (SNF 8 at 2.46 and SNF 9 at 2.34), minimizing the lynx's competitive advantage and maintaining a risk of mortality due to roads. No roads would be decommissioned.

### Alternatives 2 and 3

Unless otherwise specified below, these alternatives are summarized as a group because, in general, their impacts are similar. This is because total amounts, percents, miles, number of management activities, and other quantitative or qualitative indicators of effects vary by relatively minor amounts, location, or intensity of management (see analysis in the Glacier Project Biological Assessment, Appendix G).

Direct/indirect effects

**Table 3.4-2. Canada lynx habitat and effects in the project area.**

| | | 2007 | | Acres and Percent of habitat in 2017[3] | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Existing Condition [1] | | Alternative 1 (no action) | | Alternative 2[2] | | Alternative 3[2] | |
| **Indicators** | | **Acres** | **%** | **Acres** | **%** | **Acres** | **%** | **Acres** | **%** |
| **Indicator 1a. Snowshoe hare habitat[4]** | | | | | | | | | |
| Lynx Analysis Units | SNF 8 | 15,300 | 79.5 | 14,774 | 76.7 | 14,759 | 76.6 | 14,745 | 76.6 |
| | SNF 9 | 24,068 | 72.8 | 22,783 | 69.0 | 22,680 | 68.6 | 22,760 | 68.9 |
| | SNF 10 | 18,031 | 50.5 | 21,779 | 58.0 | 21,779 | 58.0 | 21,779 | 58.0 |
| total | | 57,399 | | 59,336 | | 59,218 | | 59,284 | |
| **Indicator 2. Red Squirrel Habitat[4]** | | | | | | | | | |
| Lynx Analysis Units | SNF 8 | 4,097 | 21.3 | 4,236 | 22.0 | 4,120 | 21.4 | 4,030 | 20.9 |
| | SNF 9 | 8,817 | 26.7 | 9,200 | 27.8 | 8,991 | 27.2 | 9,131 | 27.6 |
| | SNF 10 | 16,167 | 45.3 | 17,347 | 46.2 | 17,297 | 46.0 | 17,297 | 46.0 |
| total | | 29,081 | | 30,783 | | 30,408 | | 30,458 | |
| **Indicator 3. Denning Habitat in patches > 5 acres[4]** | | | | | | | | | |
| Lynx Analysis Units | SNF 8 | 12,861 | 70.6 | 12,919 | 70.9 | 11,819 | 64.9 | 11,860 | 65.1 |
| | SNF 9 | 19,120 | 62.9 | 19,846 | 65.3 | 17,962 | 59.1 | 18,335 | 60.4 |
| | SNF 10 | 14,370 | 42.5 | 15,203 | 42.7 | 15,104 | 42.4 | 15,104 | 42.4 |
| Total | | 46,351 | | 47,968 | | 44,885 | | 45,299 | |
| **Other Indicators** | | **Acres** | **%** | **Acres** | **%** | **Acres** | **%** | Acres | % |
| **Indicator 10. Acres in which within-stand structure will be increased within and outside harvest units[3]** | | | | | | | | | |
| Lynx Analysis Units | SNF 8 | 0 | 0 | 0 | 0 | 4,006 | 21.9 | 4,153 | 22.7 |
| | SNF 9 | 0 | 0 | 0 | 0 | 741 | 2.4 | 741 | 2.4 |
| | SNF 10 | 0 | 0 | 0 | 0 | 702 | 2.0 | 746 | 2.1 |
| total | | 0 | | 0 | | 5,449 | | 5,640 | |

*Data Source:* [1] Existing condition for vegetation indicators are based on frozen August 12, 2007 CDS data, and all alternatives are based on projected CDS data in the year 2017.
*Other Footnotes:* [2] Includes proposed actions and cumulative actions
[3] Percent of forested lynx habitat on NFS lands (SNF 8 = 18,273 ac, SNF 9 = 30,390 ac, SNF 10 = 35,593 ac)
[4] Percent of lynx habitat on NFS lands (SNF 8 = 19,255 ac, SNF 9 = 33,039 ac, SNF 10 = 35,681 ac)

Table 3.4-2 shows that all alternatives maintain similar amounts of snowshoe hare and red squirrel habitat and similar amounts of denning habitat. Alternative 2 harvests more habitat and has slightly less habitat maintained than Alternative 3. Alternative 3 also would increase stand structure (increasing snowshoe hare habitat quality) on more acres than Alternative 1 and 2.

**Table 3.4-3. Lynx Habitat – Cumulative Vegetative Effects Indicators for all ownerships. Indicator 11: Currently Unsuitable Lynx Habitat on all ownerships**

| Lynx Analysis Units | Total Lynx Habitat on all ownerships (acres) | Currently Unsuitable All ownerships | | Alternative 2[2] | | Alternative 3[2] | |
|---|---|---|---|---|---|---|---|
| | | Acres | % | Acres | % | Acres | % |
| SNF 8 | 37,421 | 734 | 2.0 | 1,593 | 8.3 | 1,587 | 8.2 |
| SNF 9 | 65,733 | 1,259 | 1.9 | 3,163 | 9.6 | 2,801 | 8.5 |
| SNF 10 | 43,607 | 121 | 0.3 | 2,675 | 7.5 | 1,438 | 4.0 |

*Data Source:* [1] Currently Unsuitable Lynx Habitat on all non-NFS Land: percent of LAU in lynx habitat. Data source: 1995 TM Scene with change detection from 2001 through 2006; appropriate ownership layer.
[2] Glacier harvest plus currently unsuitable.

Table 3.4-3 documents the current amount of unsuitable habitat in all three LAUs on all ownership in the project area and shows the number of acres that would be unsuitable as a result of the Glacier Project. Currently, less than 2% of potential lynx habitat on all ownerships is unsuitable. The Forest Plan includes direction that no more than 30% of the total lynx habitat should be in an unsuitable condition. Alternative 2 would result in at most 9.6% being unsuitable and Alternative 3 would result in at most 8.5% being unsuitable. Unsuitable habitat is generally recently harvested areas where the age of the stand is between zero and three years. Forest older than threes years usually has enough structure to provide snowshoe hare habitat. Both action alternatives would be well within the 30% guideline.

**Table 3.4-4. Indicator 12: Cumulative change to unsuitable condition in a 10 year period (first decade of Forest Plan implementation, 2004-2014) on Forest Service land only.**

| LAUs | Existing Condition 2007 [1] | | Change to unsuitable condition in ten years | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Alternative 1 (no action) | | | Alternative 2 | | | Alternative 3 | | |
| | | | Present Actions [3] | Total Change | | Proposed Change | Total Change | | Proposed Change | Total Change | |
| | Acres | % [2] | Acres | Acres | % [2] | Acres[4] | Acres[5] | % [2] | Acres[4] | Acres[5] | %[2] |
| SNF 8 | 272 | 1.4 | 145 | 417 | 2.1 | 859 | 1,276 | 6.6 | 853 | 1,270 | 6.6 |
| SNF 9 | 0 | 0.0 | 0 | 0 | 0 | 1,904 | 1,904 | 5.8 | 1,542 | 1,542 | 4.6 |
| SNF 10 | 0 | 0.0 | 1,569 | 1,569 | 4.4 | 2,554 | 4,123 | 11.6 | 1,317 | 2,886 | 8.1 |

*Data Source:* [1] Existing Condition based on August 12, 2007 Frozen CDS data.
*Other Footnotes:* [2] Percent of lynx habitat on NFS lands (SNF 8 = 19,255 ac, SNF 9 = 33,039 ac, SNF 10 = 35,681 ac),
[3]Reflects past actions since FP Implementation began that have resulted in a change to unsuitable.
[4] Glacier units only.
[5] Includes proposed actions and cumulative actions (Echo Trail, Dunka, and Tomahawk projects) on federal lands within each LAU.

Table 3.4-4 shows the amount of unsuitable habitat that would be created in the first decade of the Forest Plan from this project and any other projects in the LAUs. The Forest Plan includes direction that no more than 15% of the total lynx habitat on USFS land should be changed to an unsuitable

condition in a ten year period. This ten year period corresponds to the first decade of Forest Plan implementation (2004-1014). Alternative 2 produces the largest amount of unsuitable habitat, with the most being in SNF10 (11.6%). This is below the Forest Plan 15% threshold (S-WL-1).

**Table 3.4-5. Lynx Habitat – Human disturbance/Access Indicators**
**Indicator 7. Miles of Temporary, OML 1 and OML 2 roads (combined)**

| Lynx Analysis Units | 2007 | Miles of road in 2017 [3] | | |
|---|---|---|---|---|
| | Existing Condition [1] | Alternative 1 (no action) | Alternative 2 | Alternative 3 |
| | miles | miles | miles | miles |
| SNF 8 | 0, 2.9, 4.2 (7.1) | 0, 2.9, 4.2 (7.1) | 8.0, 2.9, 4.7 (15.6) | 6.0, 2.9, 4.7 (13.6) |
| SNF 9 | 0, 14.0, 15.5 (29.5) | 0, 14.0, 15.5 (29.5) | 16.6, 15.0, 15.5 (47.1) | 15.0, 15.0, 15.5 (45.5) |
| SNF 10 | 0, 23.3, 31.9 (55.2) | 0, 23.3, 31.9 (55.2) | 17.9, 23.5, 31.9 (73.3) | 12.3, 23.3, 31.9 (67.5) |
| total | 91.7 | 91.7 | 136.0 | 126.6 |

*Data Source:* [1] Roads indicator data for Existing Condition and alternatives are based on August 2007 road arcs coverage data.
*Other Footnotes:* [3]Road and trail density based on linear mile per square land mile and is a cumulative measure that includes non-federal roads and does include the Forest-wide Travel Management proposals.

Table 3.4-5 displays the miles of temporary and existing low standard roads in the Project. This table shows that under Alternative 2, there would be an additional 44.3 miles of road, with 42.5 miles being temporary roads and 1.8 being low standard. Under Alternative 3, there would be an additional 34.9 miles of road with 33.3 being temporary and 1.6 miles of low standard road. Neither the temporary roads nor the low standard roads would be open to the public. Alternative 2 has the highest amount of temporary road.

**Table 3.4-6. Lynx Habitat – Human disturbance/Access Indicators**
**Indicator 15. Road and snow-compacted Trail Density—mi2**

| Lynx Analysis Units | 2007 | Miles of road in 2017 [3] | | |
|---|---|---|---|---|
| | Existing Condition [1] | Alternative 1 (no action) | Alternative 2 | Alternative 3 |
| | miles | miles | miles | miles |
| SNF 8 | 5.13 | 5.13 | 5.05 | 5.05 |
| SNF 9 | 3.26 | 3.26 | 3.16 | 3.16 |
| SNF 10 | 1.90 | 1.90 | 1.85 | 1.85 |

*Data Source:* [1] Roads indicator data for Existing Condition and alternatives are based on August 2007 road arcs coverage data.
*Other Footnotes:* [3]Road and trail density based on linear mile per square land mile and is a cumulative measure that includes non-federal roads and does include the Forest-wide Travel Management proposals.

Table 3.4-6 displays the road and compacted snow density in all three LAUs currently and after project implementation in 2017. It also includes impacts from other projects in these LAUs including the Travel Management proposals. Alternative 1 shows no difference in road and trail density when compared to existing condition but both Alternative 2 and 3 show slight declines in overall density

resulting from the decommissioning of roads in the Travel Management project. The Travel Management project proposes to decommission 2.6 miles, 6.1 miles, and 3.2 miles in LAU 8, 9 and 10. Most of the other Glacier road and trail proposals (7.5 miles of existing winter routes) did not change road and trail density since they already exist and are already figured into the overall density. The only proposal that would increase road density is constructing new system road to provide long-term access to State and Federal land. This increase would be offset by the road decommissioning in the Travel Management project. See Transportation Section 3.16.

Conclusion

Although in general there are decreases in the amount of suitable habitat (except for an increase in LAU10), forest vegetative conditions would provide for sufficient lynx denning, foraging, and movement across the analysis area. These alternatives would have less total snowshoe hare habitat and more unsuitable habitat for hare than Alternative 1, but a greater amount of habitat in which stand structure would be improved for hares. The six gravel pits (0.6 acres) proposed in this project would have a minimal effect to lynx habitat.

High levels of open, low-standard roads would persist throughout parts of the analysis area maintaining a risk of lynx mortality. This situation will be improved through actions proposed in the Travel Management project and effectively closing all temporary and OML 1 roads.

Another issue for lynx is providing foraging and denning habitat in close proximity to each other as well as to maintaining habitat connectivity. Foraging (a minimum of 58% of a LAU) and denning habitat (a minimum of 42% of a LAU) are and would remain well-distributed through out the project in all alternatives (see Appendix B in BA for habitat map).

SNF 8 (Fernberg corridor) is an important area for connectivity between the two areas of the Boundary Waters Canoe Area Wilderness (BWCAW). This project would maintain adequate connectivity to allow for movement between the BWCAW across the LAUs, due to the limited clearcut harvest in this area and the retention of areas not harvested to provide connections between the BWCAW to the north and south of the Fernberg Corridor. (See Appendix B in Biological Assessment for map).

### 3.4.6.2 Cumulative effects

The incremental effects of past federal and non-federal actions on lynx are reflected in the existing condition. Past land management activities on all ownerships (such as those listed in Appendix C) have shaped the habitat that exists today for lynx in the project area. The incremental effects of existing federal actions and planned interdependent and interrelated federal and non-federal actions are reflected in the analysis of effects of each alternative. The Forest Plan FEIS predicts that additional impacts would occur on lands outside of National Forest jurisdiction (Forest Plan FEIS Volume 1 pg 3.3.4-16). When these impacts are considered in combination with the no action and the proposed actions of this project, cumulative effects could occur.

Private land development and road building would continue, as would increased recreational demand in the LAUs within the Project Area. These activities could reduce the lynx competitive advantage and increase the risk of mortality. Adequate amounts of foraging and denning habitat would continue to be provided throughout the project area.

Adverse cumulative effects are not expected from cumulative vegetation management activities in LAUs

SNF 8, 9 or 10. (See Appendix G: Biological Assessment for analysis). At least 98% of each of these LAUs is currently providing suitable lynx habitat on all ownerships (Indicator 11). SNF 8 currently has the highest amount of unsuitable habitat at 2%. Under Alternative 2 (the action alternative with the highest change to unsuitable), the amount of unsuitable would increase to 11.6 percent in LAU 10. Despite the reduction in suitable habitat for lynx, denning and foraging habitat would continue to be adequately distributed throughout these three LAUs because 11.6 percent (the LAU with the greatest change to unsuitable habitat) is less than the 15 percent standard identified in the Forest Plan (Forest Plan S-WL-1 p. 2-30) and based on a review of lynx habitat and connectivity map in Appendix B in the Biological Assessment.

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 SNF 8 and 9 would decline slightly as a result of the proposed road decommissioning in the Travel Management Project, but would still 2 miles per sq. mile in all action alternatives (Indicator 15). Much of this road density is private, township, County and State roads which are outside the jurisdiction of the Forest Service. Private land development and road building would continue as would increased recreational demand in these LAUs. These activities could reduce the lynx competitive advantage and increase the risk of mortality. The Glacier Project does not propose to increase the miles of road open for public use. And one ongoing Forest Service project that could help reduce road densities is the USFS Travel Management project. This project is making decisions on all roads on the Forest and determining if they are needed or not and it is proposing decommissioning some roads in these three LAUs. Indicator 15 in the BA includes the impacts of this project on road densities in the 3 LAUs. A decision on the Travel Management Project is expected in summer 2008.

### 3.4.7 Determination of Direct, Indirect and Cumulative Effects

The following section briefly summarizes the effects determination and is based on comprehensive analysis of effects conducted in the Glacier Project Biological Assessment.

All alternatives may effect but are not likely to adversely affect the Canada lynx because vegetative habitat is maintained with good distribution and miles of open roads are lowered in the action alternatives. The temporary roads would not remain open for public us and the roads added to the system would not remain open for public use.

### 3.4.8 Consultation with United States Department of the Interior (USDI) Fish and Wildlife Service

The Forest Service has consulted with the Fish and Wildlife Service (FWS) throughout the Project planning. We are currently in consultation with the FWS on the effects of the project. Recommendations from FWS will be incorporated into the final environmental analysis. Consultation specific to the Glacier Project is documented in the project file. It includes emails, telephone calls, field review notes and meeting notes including the submission of the Glacier Project BA to the FWS.