

WILDLIFE: REGIONAL FORESTER SENSITIVE SPECIES (RFSS)-TERRESTRIAL

(1) Overview

The following brief summaries for each RFS species describes habitat and/or species occurrence on the Superior National Forest (SNF), designation, management effects, population trends, habitat preference, and habitat association as expressed by Management Indicator Habitats (MIH's). MIH's are based on grouping of forest types in different age groupings. The age groupings are surrogates for ecological successional or vegetative growth stages. Definitions of the MIH's are found in Appendix C of the Forest Plan. Specific wildlife species associated with each MIH are found in the Final EIS, section 3.3.1

Heather Vole

The Superior is at the very southern edge of the species historical range that includes the forested regions of Canada and the western U.S. Mountains. The heather vole is designated as a Species of Special Concern by the State of Minnesota. The NHIS database contains 4 occurrences of this species on the SNF. Fire suppression has likely had the biggest negative impact to habitat conditions from historical conditions. Timber harvest potentially perpetuates habitat for this species, however an increase of aspen and a decrease of jack pine from historical conditions has likely reduced the amount of suitable habitat for the species. Population trends are unknown. Disturbance that replaces shrubs with grass can lead to intra-specific composition with Meadow voles. *Applicable MIH(s):* 8b (Jack pine forest, mature+).

Northern Goshawk

The northern goshawk is listed as both a Management Indicator Species (MIS) and RFSS on the SNF. When the SNF Risk Evaluation was done for this species in 1999, there were no known breeding areas and population trend was listed as unknown. In June of 2002, the SNF issued a Monitoring Report & Initial Habitat Review (MRIHR) for the Northern Goshawk (USDA Forest Service 02). At that time there were 6 known nest sites within the SNF. Habitat evaluations between the MRIHR (02 data) and the 2003 M&E Report Addendum showed a decrease of 2% in suitable upland habitat for goshawk Forest-wide (outside the BWCAW). Habitat parameters for identifying suitable upland goshawk data have been updated in the 04 Forest Plan are not comparable to data in the MRIHR or 2003 M&E Report Addendum. The current Forest Plan provides a new baseline for which to monitor goshawk populations & habitat within the SNF. Currently 9 known breeding territories (MN DNR 2005) occur. It's important to note that not all breeding territories are active every year. Squires and Reynolds (1997) identified timber harvest as the principal threat to breeding populations. Several studies of goshawk have been conducted in Minnesota and on the Superior since 1998. Table G.2.2 shows a compilation of data from 3 reports on breeding and reproductive success of goshawks in Minnesota. *Applicable MIH(s) or habitat:* MIH 1b- Upland forest, mature +; MIH 1b patches-≥100 acres ;MIH 13- Large patches (>300 acres) of upland mature/old forest

Peregrine Falcon

Peregrine falcon is designated as a Threatened Species under State of Minnesota rules, and the NHIS contains 5 occurrences for it within SNF proclamation boundaries, only one of which is currently active. For peregrine falcon, nesting habitat is considered the limiting factor for the species. Cliff and ledge habitat on the Superior was historically frequently isolated and of very low abundance. Successful peregrine falcon reintroduction began in Minnesota in 1982 and it was removed from the endangered species list in 1999. Currently two nesting sites can be found on the Forest on North Shore cliffs. The state population seems to be slowly increasing. There are few management-related threats to the rocky cliff habitat, & sensitive species objectives, standards, and guidelines would prevent any management-related impacts from occurring. Foraging habitat typically consists of open areas where the peregrine falcon engages in high-speed aerial pursuit of its largely avian prey. *Applicable MIH(s) or habitat:* Non-forest nesting habitat

Sharp-tailed Grouse

There is currently no designation for this species under State of Minnesota rules. On the Superior, sharp-tailed grouse are very rare with reports of individuals on National Forest land near the northwest border of the Virginia Unit. It is believed that no source population exists within the Superior, and suitable habitat is limited. Today much of the remaining habitat occurs in wetter areas, where less change to habitat characteristics has occurred. *Applicable MIH(s) or habitat:* Large patches of temporary non-forested uplands

Yellow Rail

Yellow rail is designated as a Species of Special Concern under State of Minnesota rules, and the NHIS contains only 1 occurrence for it on the Superior. Yellow rail habitat includes sedge or grass-dominated wetlands, particularly rich fens with narrow-leaved sedge, wet meadows with wide-leaved sedges and grasses, and water depths between 1 to 10 inches, especially during the breeding season. Habitat is usually sparsely populated, even in large areas of suitable habitat because water depths vary within the wetland. The population trend for this species is believed to be decreasing range-wide. Wetland succession affects habitat quality for the yellow rail, and is often influenced by human activities that purposely or inadvertently alter the water table. *Applicable MIH(s) or habitat:* Non-forested wetlands

Wilson Phalarope

Wilson's phalarope is designated as a Threatened Species under State of Minnesota rules, and the NHIS contains no occurrences for it on the Superior. Although suitable open wet meadow habitat for this species appears to be of low abundance and patchily distributed on the SNF, the fact that the Forest is at or beyond the periphery of the species' range in the state means that its habitat has probably historically been scarce and highly isolated on the Superior. The current amount and distribution of suitable ecological conditions is still roughly similar to historical conditions. It is expected that the distribution and abundance of suitable habitat will be sufficient for the continued persistence of Wilson's phalarope. Existing habitat and occurrence of the species will likely not change. *Applicable MIH(s) or habitat:* Non-forested wetlands.

Black Tern

There is no information available on specific populations, but this species was probably never very abundant within the SNF. The Superior is on the edge of this species breeding range. Declines in muskrat populations (muskrat activity provides nesting habitat) have also been cited as a contributor to habitat loss. Suitable habitat is present, however, external factors, such as additional boat accesses on other ownerships, reservoir management, high levels of private development, and associated wetland alterations (on public and private lands) are likely to impact the species. Although these activities may impact individuals or their habitat, they are not likely to cause a trend toward federal listing. *Applicable MIH(s) or habitat:* Non-forested wetland marshes and wet meadows

Great Gray Owl

There is currently no designation for this species under State of Minnesota rules, and NHIS contains only 1 nesting occurrence on the Forest. The Superior is located in the southern edge of the species historical range, where populations were unevenly distributed, and irregularly from year to year. This species has likely always been a relatively rare nesting bird in Minnesota and at least partially dependant on vagaries of meadow vole and lemming populations. Suitable habitat consist of 30-300 acres patches of dense, mature and old aged aspen and mixed conifer stands that are adjacent or within 1-3 km of open to park like areas suitable for foraging. Nest sites utilized are typically stick nest of other raptors, such as goshawk, or ravens, and broken topped snags of large diameter trees. Interior forest is preferred for its reduced potential for avian and mammalian predators on young. Current habitat conditions on the Superior may be affecting the species ability to find suitable nest sites. Down wood is an important component of both foraging and nesting habitat. In fragmented landscapes the amount of edge available may not be as important as the amount of forested area available for nesting. However, clear-cuts can create foraging habitat in dense forest in previously unoccupied areas. Population trends for the species are impossible to detect because of a lack of suitable monitoring program for the species. Winter invasions, suggests highs in the population cycle; however, the causes and source populations for these invasions is unclear. *Applicable MIH(s) or habitat:* Nesting . MIH 4b- Aspen-birch and mixed aspen-conifer forest, mature+ and MIH 5b- Upland conifer forest, mature+. Foraging: MIH 5a- Upland conifer forest, young and MIH 9a- Lowland back spruce-tamarack forest, young

Boreal Owl

There is currently no designation for this species under State of Minnesota rules, and NHIS contains 12 nesting occurrence on the Forest. The range of the boreal owl follows the extent of the boreal forest including much of Canada, the northern states and portions of the Rocky Mountains. The population in Minnesota is part of a larger Canadian population and may not be viable by itself at present. Population trends are difficult to detect given normal large population fluctuations and low precision of survey estimates. As with other northern owl species, populations are cyclical and tied to the abundance of prey (small mammals) in an area. Extensive harvest of mature lowland conifer and upland forest has led to habitat loss for this species. Limiting factors may include the right combination of nesting and foraging/roosting habitat, and possibly the distribution of these habitats and cavity trees. Fragmentation has been implicated in the isolation of boreal forest lowlands. Recent research efforts in northern MN point to the importance of upland nesting habitat adjacent to large blocks of lowland conifers used for foraging. Cavity trees are generally older aspen however other tree species may be used. *Applicable MIH(s) or habitat:* Nesting. MIH 4b- Aspen-birch and mixed aspen-conifer forest, mature+ and MIH 5b- Upland conifer forest, mature+. Foraging: MIH 9b- Lowland black spruce-tamarack forest, mature+ and MIH 9b patches- ≥100 acres.

Three-toed Woodpecker

The Three-toed woodpecker is a rare, permanent resident of extreme northern parts of Minnesota and is likely a regular nesting species, but presumably in very low numbers and in very remote parts of the state. There is currently no designation for this species under State of Minnesota rules, and NHIS contains no data for it. This species prefers old-growth coniferous forests and recently disturbed areas associated with forest fire, wind, disease and insect outbreaks. In particular, three-toed woodpecker populations often show an increased abundance in early post-fire successional seres. Studies have also found that they are more likely to occur in larger areas of virgin forest vs. smaller patches suggesting forest fragmentation may harm three-toed woodpeckers. Threats facing this species include habitat loss, fire suppression, salvage logging, conifer conversion, beaver control and poor snag retention policies. Quality habitat on the Superior has been greatly reduced due to the above factors. *Applicable MIH(s) or habitat:* MIH 9b- Lowland black spruce/ tamarack forest, mature+. MIH 12- Upland interior forest habitat, mature+

Olive-sided Flycatcher

There is currently no designation for this species under State of Minnesota rules, and NHIS contains no data for it. NRRI's Breeding Bird Monitoring effort surveys 169 stands on the Superior. It has been detected in 37 stands on the SNF. Breeding habitat is subject to alteration through harvesting and reduction of fire. Fire is thought to be more important than harvesting for creating habitat. Foraging habitat structure of live and dead snags is the most important component in the breeding range. Reduction in fire frequency may have a greater impact on foraging habitat and may not be outweighed by habitat created through harvesting. Range wide population decline includes the SNF. *Applicable MIH(s) or habitat:* MIH 5b- Upland conifer forest, mature+. MIH 9b- Lowland black spruce/ tamarack forest, mature+.

Black-throated Blue Warbler

The SNF is at the western edge of this species' range. The Superior National Forest is known to have a consistently breeding population of black-throated blue warblers in the sugar maple dominated hardwood forests along the north shore of Lake Superior but are also scattered throughout the Forest. The State of Minnesota NHIS database contains 48 occurrences of black-throated blue warbler on the SNF. The north shore population is considered to be a viable population. As much of the eastern mixed hardwood forest matured over the past few decades, black-throated blue warbler populations increased, and through the 1990's, were either stable or increasing. Suitable breeding habitat appears to be mature deciduous or mixed deciduous/coniferous forest with dense under story development. In addition, black-throated blue warblers are found only in relatively large blocks of contiguous mature forest. Risk factors include timber harvest (including thinning and partial harvest), forest fragmentation, reduction of mature forest patch size, and cultured forests that remove structure. The salvage of patchy blow-down can negatively impact the species, although patch harvest for stand management may improve conditions. *Applicable MIH(s) or habitat:* MIH 1b- Upland forest, mature+. MIH 1b in patches $\geq 2,500$ acres

Bay-breasted Warbler

There currently is no designation for this species under State of Minnesota rules but has been detected in 21 stands on the SNF. This species occurs at (or very near) the southern limit of its range on the Superior. Much of the breeding habitat occurs along the Minnesota/Canadian border in the BWCAW. They are highly associated with the outbreaks of spruce budworm and generally at their highest densities in areas where spruce budworm is found. Little is known about the overall population trend because of the remote areas where they are primarily found. This species is a conifer dependent species. However, conifer dominated stands have

decreased and been replaced by aspen over the past 100 years, indicating that less habitat is available than historically. Threats to the Bay-breasted warbler include logging that causes a decrease in habitat quality and changes in vegetation composition, and active budworm control programs that cause a loss of the Bay-breasted's obligate prey. *Applicable MIH(s) or habitat:* MIH 6b- Upland spruce-fir forest, mature+. MIH 9b-Lowland black spruce-tamarack forest, mature+ . MIH 13: Upland and lowland mature+ forest patches (40-10,000 acres")

Connecticut Warbler

There currently is no designation for this species under State of Minnesota rules but has been detected in 41 stands on the SNF. The SNF is at the southern edge of this species range and it is therefore relatively uncommon. Little is known of the specific habitat needs and breeding biology of the Connecticut warbler, partly due to its secretive nature and habit of nesting in dense vegetation. Habitat for Connecticut warblers was described as mature, short-needle conifers, usually single aged, either lowland conifer or jack pine with the key feature appearing to be an ericaceous shrub layer up to about three feet high. Habitat occurrences of Connecticut warbler on the Superior include primarily boreal bogs and jack pine. Mature lowland black spruce/tamarack provides the most common nesting and cover habitat for Connecticut warblers. Threats to Connecticut warbler populations are not fully understood but include loss of breeding habitat, loss of wintering habitat, nest predation and parasitism, collision with towers, and possibly habitat fragmentation. *Applicable MIH(s) or habitat:* MIH 9b- Lowland black spruce/tamarack forest, mature+. MIH 8b Jack pine forest, mature +

LeConte's Sparrow

The SNF is at the edge of the species breeding range and has not been detected on the Forest. LeConte's sparrow inhabits a wide variety of non-forest and wetland vegetation conditions. Its habitat was likely perpetuated by disturbance such as flood and fire. Timber harvest likely has increased the amount of habitat. The population trend for this species is unknown, but it would appear to be stable in Minnesota. Local populations fluctuate dramatically depending on rainfall. Amounts of upland open and lowland meadow habitat or potential habitat are expected to remain fairly constant on the Superior in the next 20 years. *Applicable MIH(s) or habitat:* MIH 1a- Upland forest, young. MIH 9a-Lowland black spruce-tamarack forest, young. MIH 11- Management-induced edge

Wood Turtle

The wood turtle is designated as a Threatened species by the State of Minnesota NHIS data shows 11 occurrences of wood turtle on the Forest, all on the Laurentian District and primarily along the Cloquet River. The wood turtle is on the edge of its range on the Superior National Forest and any populations on the Forest would not exist without the populations outside the Forest. The wood turtle is currently present just south and west of the Superior National Forest along the St. Louis River and in the south end of the Superior National Forest along the Cloquet River . Populations are isolated and may travel 3 miles to find nesting sites. The likelihood of the wood turtle on the National Forests is minimal because of the lack of sandy soils and larger streams. The population was probably larger than it is currently because of less habitat degradation due to recreational activities, road and trail building and illegal collection by humans. Historically the only habitat that existed on the National Forests is currently covered with water as it is underneath the Whiteface reservoir. *Applicable MIH(s) or habitat:* Not Specific.

Taiga Alpine & Jutta Arctic Butterflies

The Superior National Forest is at the extreme southern edge of the species' holarctic range in North America and is described as common, but local. The species is associated with semi-open to well-forested black spruce-tamarack sphagnum bogs. Currently on the Superior National Forest there are four and seven documented locations of taiga alpine and Jutta Arctic butterflies respectively. The Taiga Alpine is likely to occur widely within the large peatlands northwest of the Sand Lake, but the status of this species there and throughout much of the Superior is largely unknown due to lack of extensive searches. Suitable habitat for the Jutta Arctic butterfly on the Superior has likely always been widespread but patchy. Activities that decrease suitable habitat for both species include timber harvest, management-ignited fire, or road construction and use in black spruce-tamarack forest or any other activity that may alter hydrologic conditions of wetland forests habitat. Changes to potential suitable habitat within the BWCAW would result primarily from fire or blow down. *Applicable MIH(s) or habitat:* MIH 9b- Lowland black spruce/tamarack forest, mature+. Non-forest wetland (Red-disked, Jutta arctic)

Red-disked Alpine Butterflies

The Superior National Forest is near the southern edge of the species' holarctic range in North America and is widespread, although uncommon and intensely local. The species is associated with a fairly wide variety of habitats from large sphagnum bogs with abundant cotton-grass, grassy meadows, spruce bogs, and sedge marshes to a wide variety of open upland and wetland habitats. Currently on the Forest there are 7 documented locations. At one site, this species was observed flying in a narrow open boggy right-of-way corridor bordered by dense black spruce forest. Construction of the corridor appears to have created the favorable habitat. Activities that both decrease and increase suitable habitat includes timber harvest, mgt ignited fire, or road construction and use in black spruce-tamarack forest or any other activity that may alter hydrologic conditions of wetland forests habitat. *Applicable MIH(s) or habitat:* Non-forest wetland (Red-disked, Jutta arctic)

Nabakov's Northern Blue Butterfly

The Nabakov's northern blue is designated as a Species of Special Concern under State of Minnesota rules. NHIS data shows 9 occurrences of Nabakov's northern blue on the Forest. The Nabakov's northern blue butterfly is at the southern edge of its holarctic range in North America. The species is associated with its exclusive larval host plant dwarf bilberry in cool, well-drained sandy areas under coniferous forests, especially jack pine of the Vermilion Moraine in western Cook and central St. Louis Counties. Currently on the there are eight documented locations of northern blue butterfly forest wide. Past vegetation management such as logging has decreased the overall amount of jack pine forest and landscape fire suppression has probably increased the amount of older jack pine in areas of suitable habitat in the BWCAW. However, outside the BWCAW, timber harvest in conifer stands also might have maintained or increased locally the amount of suitable habitat for northern blue. *Applicable MIH(s) or habitat:* MIH 8a-Jack pine forest, young.

Freija's Grizzled Skipper Butterfly

The Superior National Forest is at the extreme southern edge of the species' holarctic range in North America. Within much of its range the Freija's grizzled skipper is described as common, but local. The species is associated with open upland grassy habitats. The one sighting of this butterfly on the Forest is also the only know location in the lower 48 States. The habitat needs for this insect in Minnesota, therefore, are not well understood. The occurrence at the McNair site is similar to habitats described for the

species in other parts of its range: upland acidic meadow. Indirect impacts to potentially suitable habitat could occur from ATV use (trampling), and vegetation management (timber and fire management activities may directly and indirectly negatively or positively impact potential habitat by either creating or removing suitable habitat). *Applicable MIH(s) or habitat:* Non-forest.

Tiger Beetle

The Laurentian tiger beetle is designated as a Threatened species by the State of Minnesota. NHIS data shows 53 occurrences of Laurentian tiger beetle on the Forest. This species of tiger beetle is a regional endemic reported only from Northwest Ontario, extreme Southeast Manitoba, and extreme northern Minnesota. Its Minnesota habitat includes sandy, rocky openings, gravel pits, timber sale roads, or other areas with reduced ground cover, but adjacent vegetation to provide shade (shuttles in and out of sun to control body temperature). Prior to 2000, this tiger beetle was known to occur at three sites. Recent surveys have confirmed at least 17 sites on the forest, and there are other highly probable sites, including several more unconfirmed sites in the BWCAW. Activities that may negatively impact larval habitat include gravel excavation, soil compaction by heavy machinery, vehicles, or RMVs (recreational motor vehicles), and alteration of soil moisture, vegetation, and sun exposure. Vegetation succession results in abandonment or dispersal from formerly suitable habitats. *Applicable MIH(s) or habitat:* Forest openings and Roads, trails, gravel pits.

(2) Monitoring Activities

Monitoring Question

To what extent is Forest management contributing to the conservation of sensitive species and moving toward short term (10-20 years) and long-term (100 years) objectives for their habitat conditions?

Monitoring Driver(s): Objectives.

All sensitive species. O-WL-18. Maintain, protect, or improve habitat for sensitive species. Meeting this objective will involve two basic and complimentary strategies: **a.** Landscape level (or coarse filter) management strategies: Addressing species' needs through integrated resource management at large landscape scales... **b.** Site-level (or fine filter) management strategies: Addressing species' needs by managing specifically for high quality potential habitat or known locations of sensitive species.

Northern goshawk. O-WL-31. Provide habitat to provide for population goal minimum: 20-30 breeding pairs.

Black tern. O-WL-22. In all known breeding locations maintain or restore high quality nesting habitat: marshes or shallow rivers or lakes with suitable balance of open water and emergent vegetation.

Great gray; owl. O-WL-21. In known or potential good breeding habitat, maintain or restore high quality habitat conditions: Mature (>50 years old), dense, upland forest nesting habitat within ½ to 1½ miles of areas with a sufficient network of lowland conifer forest, bog, and non-forest foraging habitat.

Boreal owl. O-WL-20. In known or good potential breeding habitat within the normal expected range of the boreal owl on the NFS land, maintain or restore quality habitat conditions: suitable nesting habitat adjacent to or within ½ mile of foraging and roosting habitat. **(a)** Nesting habitat is generally provided by upland aspen and aspen-conifer mix forest >60 years old with large diameter (>12") trees suitable for nest cavities. **(b)** Foraging and roosting habitat is provided by lowland black spruce and tamarack forest predominantly >80 years old in stands >40 acres or where a complex of smaller lowland stands are within 1,000 feet of one another and are >40 acres. Individual territories (640-2,400 acres) typically have a combined area of greater than 500 acres of lowland black spruce/tamarack forest.

Three-toed woodpecker. O-WL-23. Maintain or improve quality nesting and foraging habitat within the woodpecker's range, by managing toward the Landscape Ecosystem Vegetation Objectives for mature and older conifer forest. Consider the contribution of BWCAW to well-distributed habitat. Important characteristics within these older forests include trees large enough for nest cavities and current or future habitat to provide dead and dying flaky-barked trees for forage. In addition to tracts of mature and older conifer forest, retain large concentrations of flaky-barked conifer trees (especially jack pine, white spruce, black spruce, and tamarack) that have been damaged or killed by fire, insects, disease, flooding or other disturbances. Where conflicts exist between retaining large concentrations (for example, due to fire risk or insect outbreaks), prioritize maintenance of woodpecker habitat in areas and concentrations where conflicts can be minimized. **and O-WL-24** The amount and distribution of dead and dying trees should provide adequate representation of patterns and amounts that would result from natural disturbances (such as fire and flooding) and other ecological processes (such as insect and disease infestations and vegetation succession). If natural

disturbances do not provide adequate habitat, it may be necessary to emulate natural disturbance through management ignited fire or other treatments.

Olive-sided flycatcher. O-WL-25. Maintain, protect, or improve quality nesting and foraging habitat: variety of boreal forests (generally 10-20% canopy cover) including uplands, lowlands, edges, and beaver meadows with a preponderance of standing live or dead large trees used for perching and foraging, especially spruce or tamarack. High association with riparian and riverine areas.

Wood turtle. O-WL-19. In all known breeding locations maintain or restore high quality breeding habitat and protect nesting areas from predators and negative human impacts. High quality breeding habitat: open sandy areas adjacent to upland and lowland foraging habitats with shade and security over wood. Aquatic riverine habitat features log jams, down logs, wood debris.

Sensitive butterflies. O-WL-26. In all known breeding locations, maintain or restore high quality habitat for:
Jutta arctic: moderately forested black spruce bogs with sedges, bog forest openings and edges.

Freija’s grizzled skipper: upland acid meadow.

Taiga alpine: semi-open to well forested lowland black spruce-tamarack.

Nabokov’s northern blue butterfly. O-WL-27. In eight known breeding locations, maintain or restore high quality habitat: well-drained sand gravelly areas under fairly open coniferous forests, especially jack pine of the Vermilion Moraine. Associated with its exclusive larval host dwarf bilberry.

Table G2.1 FY 2005 Monitoring Activities

Applicable Monitoring Activity, Practice, Or Effect Measured	Methods	When Monitored	Location or Project Area
HEATHER VOLE			
MIH 8b Jack pine forest, mature +	Landscape Level-Coarse filter: Key Analysis Indicators: GIS and CDS analyses.	Landscape Level: Fall 05	Landscape Level: Forest-wide
Known sites	Site Level-Fine filter: NHIS, Private researcher	Site Level: Fall 05	Site Level: Known Sites.

Table G2.1 FY 2005 Monitoring Activities

Applicable Monitoring Activity, Practice, Or Effect Measured	Methods	When Monitored	Location or Project Area
NORTHERN GOSHAWK			
<ul style="list-style-type: none"> ●Population trends and habitat change relationships ●Habitat to support 20-30 breeding pairs minimum ●MIH 1b- Upland forest, mature + ●MIH 1b patches-≥100 acres ●MIH 13- Large patches (>300 acres) of upland mature/old forest ●Stand complexity (based on vegetation treatments) 	Landscape Level-Coarse filter: Key Analysis Indicators: GIS and CDS analyses, TBD	Landscape Level: Fall 05	Landscape Level: Forest-wide
Known sites	Site Level-Fine filter: Use NHIS, survey methodology to survey mid-level project areas and known locations, and to follow up on responses to those surveys	Site Level: Spring 05	Site Level: Dunka, Echo, Trail, Inga-South, East Side Thinning, Devil Trout, Upper Temperance, Whyte, Known locations
PEREGRINE FALCON			
Non-forest nesting habitat	Landscape Level-Coarse filter: Key Analysis Indicators: GIS and CDS analyses, TBD	Landscape Level: Fall 05	Landscape Level: Forest-wide
Known sites	Site Level-Fine filter Midwest Peregrine Falcon Restoration.	Site Level: Spring 05	Site Level: Known Sites
SHARP-TAILED GROUSE			
<ul style="list-style-type: none"> ●Large patches of temporary non-forested uplands ●Management-ignited fire opportunities 	Landscape Level-Coarse filter: Key Analysis Indicators: GIS and CDS analyses, TBD	Landscape Level:	Landscape Level: Forest-wide
Known sites	Site Level-Fine filter MN DNR, Site-level surveys	Landscape Level:	Landscape Level:
YELLOW RAIL, WILSON'S PHALAROPE			
Non-forested wetlands	Landscape Level-Coarse filter: Key Analysis Indicators: GIS and CDS analyses, TBD	Landscape Level:	Landscape Level: Forest-wide
Known sites	Site Level-Fine filter MN DNR, Site-level surveys	Site Level: Spring 05.	Site Level: Whyte.
BLACK TERN			
<ul style="list-style-type: none"> ●Non-forested wetland marshes and wet meadows ●Road and trail construction ●Water access improvements 	Landscape Level-Coarse filter: Key Analysis Indicators: GIS and CDS analyses, TBD.	Landscape Level:	Landscape Level: Forest-wide
Known sites	Site Level-Fine filter MN DNR, Site-level surveys	Site Level: Spring 05.	Site Level: Whyte.

Table G2.1 FY 2005 Monitoring Activities

Applicable Monitoring Activity, Practice, Or Effect Measured	Methods	When Monitored	Location or Project Area
GREAT GRAY OWL			
<ul style="list-style-type: none"> • Nesting . MIH 4b- Aspen-birch and mixed aspen-conifer forest, mature+ and MIH 5b- Upland conifer forest, mature+ • Foraging: MIH 5a- Upland conifer forest, young and MIH 9a- Lowland back spruce-tamarack forest, young 	Landscape Level-Coarse filter: Key Analysis Indicators: GIS and CDS analyses.	Landscape Level: Fall 05	Landscape Level: Forest-wide
Known sites	Site Level-Fine filter NHIS, Site-level surveys	Site Level: Spring 05.	Site Level: Dunka, Whyte, LAU survey routes.
BOREAL OWL			
<ul style="list-style-type: none"> • Nesting . MIH 4b- Aspen-birch and mixed aspen-conifer forest, mature+ and MIH 5b- Upland conifer forest, mature+ • Foraging: MIH 9b- Lowland black spruce-tamarack forest, mature+ and MIH 9b patches- ≥100 acres. 	Landscape Level-Coarse filter: Key Analysis Indicators: GIS and CDS analyses.	Landscape Level: Fall 05	Landscape Level: Forest-wide
Known sites	Site Level-Fine filter NHIS, Site-level surveys	Site Level: Spring 05.	Site Level: Dunka, Whyte, other survey routes, nest boxes
THREE-TOED WOODPECKER			
<ul style="list-style-type: none"> •MIH 9b- Lowland black spruce/ tamarack forest, mature+ •MIH 12- Upland interior forest habitat, mature+ 	Landscape Level-Coarse filter: Key Analysis Indicators: GIS and CDS analyses.	Landscape Level: Fall 05	Landscape Level: Forest-wide
Known sites	Site Level-Fine filter: Site level surveys	Site Level: Spring 05	Site Level: Tomahawk.
OLIVE-SIDED FLYCATCHER			
<ul style="list-style-type: none"> •MIH 5b- Upland conifer forest, mature+ •MIH 9b- Lowland black spruce/ tamarack forest, mature+ •Management ignited fire opportunities 	Landscape Level-Coarse filter: Key Analysis Indicators: GIS and CDS analyses, TBD	Landscape Level: Fall 05	Landscape Level: Forest-wide
Known sites	Site Level-Fine filter: NRRRI BBM, BBS, NHIS, Site-level surveys	Site Level: Spring 05	Site Level: Forest-wide.

Table G2.1 FY 2005 Monitoring Activities

Applicable Monitoring Activity, Practice, Or Effect Measured	Methods	When Monitored	Location or Project Area
BLACK-THROATED BLUE WARBLER			
<ul style="list-style-type: none"> ●MIH 1b- Upland forest, mature+ ●MIH 1b in patches ≥2,500 acres 	Landscape Level-Coarse filter: Key Analysis Indicators: GIS and CDS analyses.	Landscape Level: Fall 05	Landscape Level: Forest-wide
Known sites	Site Level-Fine filter: NRRRI BBM, BBS, NHIS, Site-level surveys	Site Level: Spring 05	Site Level: Forest-wide. Trail & Whyte.
BAY-BREASTED WARBLER			
<ul style="list-style-type: none"> ●MIH 6b- Upland spruce-fir forest, mature+ ●MIH 9b-Lowland black spruce-tamarack forest, mature+ ●MIH 13: Upland and lowland mature+ forest patches (40-10,000 acres") 	Landscape Level-Coarse filter: Key Analysis Indicators: GIS and CDS analyses, TBD	Landscape Level: Fall 05	Landscape Level: Forest-wide
Known sites	Site Level-Fine filter: NRRRI BBM, BBS, NHIS, Site-level surveys	Site Level: Spring 05	Site Level: Forest-wide
CONNECTICUT WARBLER			
<ul style="list-style-type: none"> ●MIH 9b- Lowland black spruce/tamarack forest, mature+ ●MIH 8b Jack pine forest, mature + 	Landscape Level-Coarse filter: Key Analysis Indicators: GIS and CDS analyses.	Landscape Level: Fall 05	Landscape Level: Forest-wide
Known sites	Site Level-Fine filter: NRRRI BBM, BBS, NHIS, Site-level surveys	Site Level: Spring 05	Site Level: Forest-wide
LECONTE'S SPARROW			
<ul style="list-style-type: none"> ●MIH 1a- Upland forest, young ●MIH 9a-Lowland black spruce-tamarack forest, young ●MIH 11- Management-induced edge ●Management-ignited fire opportunities ●Road and trail construction ●Non-forested wetlands 	Landscape Level-Coarse filter: Key Analysis Indicators: GIS and CDS analyses, TBD	Landscape Level: Fall 05	Landscape Level: Forest-wide
Known sites	Site Level-Fine filter: NRRRI BBM, BBS, NHIS, Site-level surveys.	Site Level: Spring 05	Site Level: Forest-wide
WOOD TURTLE			
<ul style="list-style-type: none"> ●Riparian disturbances ●Road and trail construction 	Landscape Level-Coarse filter: Key Analysis Indicators-Methods TBD	Landscape Level:	Landscape Level:
Known sites	Site Level-Fine filter: Site level surveys	Landscape Level:	Landscape Level:

Table G2.1 FY 2005 Monitoring Activities

Applicable Monitoring Activity, Practice, Or Effect Measured	Methods	When Monitored	Location or Project Area
TAIGA ALPINE, RED-DISKED ALPINE, AND JUTTA ARCTIC BUTTERFLIES			
<ul style="list-style-type: none"> ●MIH 9b- Lowland black spruce/tamarack forest, mature+ ●Non-forest wetland (Red-disked, Jutta arctic) 	Landscape Level-Coarse filter: Key Analysis Indicators: GIS and CDS analyses, TBD	Landscape Level: Fall 05	Landscape Level: Forest-wide
Known sites	Site Level-Fine filter Site-level surveys, private butterfly groups	Site Level: Summer 05	Site Level: Devil-Trout, McNair
NABAKOV'S BLUE BUTTERFLY			
MIH 8a- Jack pine forest, young	Landscape Level-Coarse filter: Key Analysis Indicators: GIS and CDS analyses.	Landscape Level: Fall 05	Landscape Level: Forest-wide
Known sites	Site Level-Fine filter Site-level surveys, private	Site Level: Summer 05	Site Level: Devil-Trout, McNair
FREIJA'S GRIZZLED SKIPPER			
Non-forest	Landscape Level-Coarse filter: Key Analysis Indicators: GIS and CDS analyses, TBD	Landscape Level:	Landscape Level: Forest-wide
Known sites	Site Level-Fine filter Site-level surveys, private butterfly groups	Site Level: Summer 05	Site Level: Devil-Trout, McNair
TIGER BEETLE			
<ul style="list-style-type: none"> ●Forest openings ●Roads, trails, gravel pits 	Landscape Level-Coarse filter: Key Analysis Indicators: GIS and CDS analyses, TBD	Landscape Level:	Landscape Level: Forest-wide
Known sites	Site Level-Fine filter Site-level surveys.	Site Level: Summer 05	Site Level: Trail

(3) Evaluation and Conclusions.

It is not expected that any significant trends in habitat changes will be able to be surmised at increments of less than 5 years. However, for the purpose of this first Report under the new Forest Plan, an initial attempt will be made as to Evaluation and Conclusion.

2005 Accomplishments (Species Population Occurrence)

All Species.

MIH management direction presented in the Forest Plan is by Landscape Ecosystem (LE). A GIS analysis of CDS stand data frozen in September of 2005 was conducted in the fall of 2005. The results are reflected in Tables G.2.3 below.

Heather Vole.

Small mammal surveys coordinated by the 1854 Authority have been conducted each fall since 2001 in an attempt to track trends in small mammal populations within the forested and transition zones of northern Minnesota. Nine of the trapping routes are conducted on the SNF. In addition surveys were conducted at several sites by a private researcher (Jannett 2005). A total of 12 heather voles were trapped at 7 sites (Jannett 2005).

Northern Goshawk

Twenty territories were surveyed including 7 mid-level and project areas and 7 known breeding territories. There were 14 active territories and breeding activity was confirmed at 10 sites. Ten nests were discovered and 6 fledglings were reported (See Table G.2.2).

MIH 1b GIS analysis shows a slight Forest-wide increase in this MIH. Although current data shows the Superior exceeds Decade 1 objectives, the amount of mature/old forest in MIH 1 is expected to decrease in decades 1 and 2. The amount of MIH 1b in the BWCAW is expected to remain relatively constant with the only changes taking place due to natural disturbances and/or succession.

MIH 13- GIS analysis shows a slight increase in the amount of this indicator Forest-wide. The amount of MIH 13 in the BWCAW is expected to remain relatively constant with the only changes taking place due to natural disturbances and/or succession. **Breeding Pairs-** The number of known breeding pairs per year will vary depending on how many known territories are surveyed and nests found and whether or not follow up surveys were able to be conducted. 2005 survey efforts showed an increase of known breeding pairs over those known in 2003.

Table G2.2 Monitoring of Known Northern Goshawk Territories on the SNF						
	2000	2001	2002	2003	2004	2005
# of Territories Surveyed	2	5	7	10	18	20
# of Territories Occupied	2	4	4	8	13	14
# of Nests Found	2	4	4	5	10	10
Known # Young Fledged¹	2	3	4+	3+	10	6

Peregrine Falcon

NRRI's Breeding Bird Monitoring effort surveys 169 stands on the Superior. It has not detected peregrine falcon on the SNF, however survey points are located primarily in forested areas not occupied by this species. The Midwest Peregrine Falcon Restoration project actively monitors and maintains records on peregrine falcons in the state and region.

Sharp Tail Grouse

NRRI's Breeding Bird Monitoring effort surveys 169 stands on the Superior. It has not detected sharp-tailed grouse on the SNF; however timing and location of survey routes are such that this species is not adequately surveyed for. The MNDNR has monitored population indices on sharp-tailed dancing grounds since at least 1977. However, data reporting has been inconsistent from year to year.

Yellow Rail

NRRI's Breeding Bird Monitoring effort surveys 169 stands on the Superior. It has not detected yellow rail on the SNF, however survey points are located primarily in forested areas not occupied by this species. Surveys conducted on the Whyte mid-level analysis area did not detect this species.

Wilson Phalarope

NRRI's Breeding Bird Monitoring effort surveys 169 stands on the Superior. It has not detected Wilson's phalarope on the SNF, however survey points are located primarily in forested areas not occupied by this species. Surveys conducted on the Whyte mid-level analysis area did not detect this species.

Black Tern

NRRI's Breeding Bird Monitoring effort surveys 169 stands on the Superior. It has not detected black tern on the SNF, however survey points are located primarily in forested areas not occupied by this species. Surveys conducted on the Whyte mid-level analysis area did not detect this species.

Great Gray Owl

NRRI's Breeding Bird Monitoring effort surveys 169 stands on the Superior. It has not detected great gray owl on the SNF; however timing and location of survey routes are such that this species is not adequately surveyed for. Surveys conducted in the Whyte mid-level analysis area and along survey routes on the Laurentian Ranger District did not detect this species. Surveys conducted in the Dunka mid-level analysis area yielded one response, but nesting could not be determined.

Boreal Owl

NRRI's Breeding Bird Monitoring effort surveys 169 stands on the Superior. It has not detected boreal owl on the SNF; however timing and location of survey routes are such that this species is not adequately surveyed for. Surveys conducted in the Whyte and Dunka mid-level analysis area and along survey routes on the Laurentian Ranger District yielded 4 responses, but no nesting was confirmed. Surveys conducted by a private researcher (Lane) in the Gunflint and Tofte Districts detected 1 singing male but no further breeding activity. Monitoring of nest boxes near Isabella showed no boxes were used by boreal owls.

Three Toed Woodpecker.

NRRI's Breeding Bird Monitoring effort surveys 169 stands on the Superior. It has not detected three-toed woodpecker on the SNF; however timing and location of survey routes are such that this species is not adequately surveyed for. Surveys conducted in the Tomahawk mid-level analysis area did not detect this species

All Neo-tropical Migrant Bird Species

There are 8 North American Breeding Bird Survey (BBS) routes within SNF proclamation boundaries. Trend data for these individual routes are not available. BBS data that is available for this species are reflected in Table G.4 below.

Olive Sided Flycatcher.

NRRI's Breeding Bird Monitoring effort surveys 169 stands on the Superior. It has been detected in 37 stands on the SNF. However, detections are rare and irregular with only 1 detection in 20 of the stands during the period of 1991 thru 2005 (J.Lind, personal communication). Surveys conducted on the Whyte and Trail mid-level analysis areas did not detect this species. A detection of a nesting olive-sided flycatcher was reported on the Gunflint Ranger District (M.Grover, personal communication).

Black Throated Blue Warbler

NRRI's Breeding Bird Monitoring effort surveys 169 stands on the Superior. It has been detected in 50 stands, however, many of the detections are rare with only 1 detection in 21 of the stands during the period of 1991 thru 2005 (J.Lind, personal communication). 21. Surveys conducted on the Whyte and Trail mid-level analysis areas did not detect this species.

Bay Breasted Warbler

NRRI's Breeding Bird Monitoring effort surveys 169 stands on the Superior. It has been detected in 21 stands on the SNF, however, there has been only 1 detection in each of those 21 stands during the period of 1991 thru 2005 (J.Lind, personal communication). Surveys conducted on the Whyte and Trail mid-level analysis areas did not detect this species.

Connecticut Warbler

NRRI's Breeding Bird Monitoring effort surveys 169 stands on the Superior. It has been detected in 41 stands on the SNF during the period of 1991 thru 2005 (J.Lind, personal communication). Surveys conducted on the Whyte and Trail mid-level analysis areas did not detect this species.

LeConte's Sparrow

NRRI's Breeding Bird Monitoring effort surveys 169 stands on the Superior. It has not detected LeConte's sparrow on the SNF, however survey points are located primarily in forested areas not occupied by this species. Surveys conducted on the Whyte and Trail mid-level analysis areas did not detect this species.

Wood Turtle

Incidental observations in 2005 included a road killed turtle on Highway 2 along the Langley River and another observed along the St. Louis River near Seven Beavers Lake.

Taiga Alpine, Red Disked Alpine, Jutta Arctic, & Freija Grizzle Skipper Butterflies

Surveys conducted in the Devil Trout mid-level analysis area and the McNair butterfly site on the Laurentian District in 2005 did not document any occurrences for these species.

Nabakov Northern Blue Butterfly

Surveys in the Devil-Trout mid-level analysis area yielded 2 new occurrences of Nabakov’s northern blue. There were no detections in the Trail mid-level analysis area. Surveys in the McNair butterfly area detected 21 individuals.

Tiger Beetle

Surveys conducted in the Trail mid-level analysis area in 2005 yielded an additional location for this species.

2005 Accomplishment Contribution Towards Desired Conditions & Objectives (Only Species that we have accomplishment data for in 2005 are listed)

TABLE G.2.3. FOREST PLAN DIRECTION/FEIS CONDITION				
Record of Decision (7/04)	(DECADE 1)		2005 Accomplishments and/or Condition	
Existing Condition	FP Desired Condition, Objective, or S&G’s	FEIS Projected or Proposed Condition	Actual Accomplishments implemented	Actual Accomplishments & Approved NEPA Decisions
HEATHER VOLE.				
MIH 8b (% of MIH) 5.0%		MIH 8b 4.3%	MIH 8b 5.5%	MIH 8b 5.3%
PEREGRINE FALCON				
Non-forested nesting habitat		Non-forested nesting habitat	Non-forested nesting habitat	Non-forested nesting habitat
BLACK TERN				
Non-forested wetland marshes and wet meadows		Non-forested wetland marshes and wet meadow	Wetlands	Wetlands
GREAT GRAY OWL				
MIH 4b (% of MIH) 33.8%		MIH 4b(%) 25.9%	MIH 4b(%)	MIH 4b(%) 32.5%
MIH 5b (% of MIH) 17.4%		MIH 5b (%) 18.6%	MIH 5b(%)	MIH 5b(%) 20.3%
MIH 5a(% of MIH) 6.9%		MIH 5a(%) 4.6%	MIH 5a(%)	MIH 5a(%) 3.9%
MIH 9a (% of MIH) 3.4%		MIH 9a(%) 4.0%	MIH 9a(%)	MIH 9a(%) 2.9%

TABLE G.2.3. FOREST PLAN DIRECTION/FEIS CONDITION

Record of Decision (7/04)	(DECADE 1)		2005 Accomplishments and/or Condition	
Existing Condition	FP Desired Condition, Objective, or S&G's	FEIS Projected or Proposed Condition	Actual Accomplishments implemented	Actual Accomplishments & Approved NEPA Decisions
BOREAL OWL				
<u>MIH 4b(% of MIH)</u> 33.7% <u>MIH 5b (% of MIH)</u> 17.4% <u>MIH 9b (% of MIH)</u> 84.7% MIH 9b patches ≥100 acres		<u>MIH 4b</u> 25.9% <u>MIH 5b</u> 18.6% <u>MIH 9b</u> 86.8% MIH 9b patches ≥100 acres	<u>MIH 4b(%)</u> <u>MIH 5b(%)</u> <u>MIH 9b(%)</u> MIH 9b patches ≥100 acres (%)	<u>MIH 4b(%)</u> 32.5% <u>MIH 5b(%)</u> 20.3 <u>MIH 9b(%)</u> 85.2 MIH 9b patches ≥100 acres (%)
THREE-TOED WOODPECKER				
<u>MIH 9b(% of MIH)</u> 84.7% <u>MIH 12 (% of MIH)</u> 14.7%		<u>MIH 9b</u> 86.8% <u>MIH 12</u> 13.9%	<u>MIH 9b</u> <u>MIH 12</u>	<u>MIH 9b</u> 85.2% <u>MIH 12</u>
OLIVE-SIDED FLYCATCHER				
<u>MIH 5b (% of MIH)</u> 17.4% <u>MIH 9b (% of MIH)</u> 84.7%		<u>MIH 5b</u> 18.6% <u>MIH 9b</u> 86.8%	<u>MIH 5b</u> <u>MIH 9B</u>	<u>MIH 5b</u> 20.3 <u>MIH 9B</u> 85.2
BLACK-THROATED BLUE WARBLER				
<u>MIH 1b Large (≥2,500 ac) Patches (% of MIH)</u> 12.5% <u>MIH 1b (% of MIH)</u> 54.6%		<u>Large Patches of MIH 1b</u> <u>MIH 1b</u> 48.2%	<u>Large Patches MIH 9b</u> <u>MIH 1b</u>	<u>Large Patches MIH 9b</u> <u>MIH 1b</u> 56.8%
BAY-BREASTED WARBLER				
<u>MIH 6b (% of MIH)</u> 7.5% <u>MIH 9b (% of MIH)</u> 84.7% <u>MIH 13 (% of MIH)</u> 24.4%		<u>MIH 6b</u> 8.9% <u>MIH 9b</u> 86.8% <u>MIH 13</u>	<u>Large Patches MIH 9b</u> <u>MIH 1b</u>	<u>MIH 6b</u> 9.8% <u>MIH 9b</u> 85.2% <u>MIH 13</u>

TABLE G.2.3. FOREST PLAN DIRECTION/FEIS CONDITION

Record of Decision (7/04)	(DECADE 1)		2005 Accomplishments and/or Condition	
Existing Condition	FP Desired Condition, Objective, or S&G's	FEIS Projected or Proposed Condition	Actual Accomplishments implemented	Actual Accomplishments & Approved NEPA Decisions
CONNECTICUT WARBLER				
MIH 9b (% of MIH) 84.7%		MIH 9b 86.8%	MIH 9B	MIH 9B 85.2%
MIH 8b (% of MIH) 5.0%		MIH 8b 4.3%	MIH 8b	MIH 8b
LECONTE'S SPARROW				
MIH 1a (% of MIH) 13.2%		MIH 1a 10.4%		MIH 1a 9.3%
MIH 9a (% of MIH) 3.4%		MIH 9a 7%		MIH 9a 2.9%
MIH 11- (in mi/mi²)³ Uplands- 2.10 Lowlands- 0.20 Non-forested wetlands-		MIH 11 Uplands- 0.53 Lowlands- .08 Non-forested wetlands-		MIH 11
TAIGA ALPINE, RED-DISKED ALPINE, AND JUTTA ARCTIC BUTTERFLIES				
MIH 9b (% of MIH) 84.7%		MIH 9b 86.8%	MIH 9b	MIH 9b 85.2%
NABAKOV'S NORTHERN BLUE BUTTERFLY				
MIH 8a (% of MIH) 1.0%		MIH 8a 3.6%	MIH 8a	MIH 8a 1%
FREIJA GRIZZLED SKIPPER				
Non-forest		Non-forest	Upland acidic meadow	

TABLE G.2.3. FOREST PLAN DIRECTION/FEIS CONDITION

TABLE G.2.3. FOREST PLAN DIRECTION/FEIS CONDITION				
Record of Decision (7/04)	(DECADE 1)		2005 Accomplishments and/or Condition	
Existing Condition	FP Desired Condition, Objective, or S&G's	FEIS Projected or Proposed Condition	Actual Accomplishments implemented	Actual Accomplishments & Approved NEPA Decisions
NORTHERN GOSHAWK				
Indicator 1: Mature Forest Availability- MIH 1b (in percent of upland forest acres) Excluding BWCA=54.7% Including BWCA=51%		Excluding BWCA=48% Including BWCA=47%		57%
Indicator 2: Patch Size-100 acre or larger mature/older upland forest patches (in acres (number of patches)) Excluding BWCA=400,000 ac Including BWCA=988,000 ac		Excluding BWCA=346,700 ac Including BWCA=934,900 ac		
Indicator 2a: Large Patch Size- MIH 13 300 acres (in acres (number of patches)) Excluding BWCA=297,300 ac Including BWCA=876,900 ac		Excluding BWCA=246,500 ac Including BWCA=826,100 ac		
Indicator 3: Stand Complexity				
Objective 1: Habitat to support 20-30 breeding pairs minimum ³ (in % of upland forest acres) MIH 1b=54.7% MIH 1 Young=13.2% MIH 1c Sapling/pole=10%	MIH 1b=20-30% MIH 1 Young=7-10% MIH 1c Sap/pole=7-10%			MIH 1b=52% MIH 1 Young=9.3% MIH 1c Sap/pole
Objective 2: 20-30 breeding pairs minimum =6 pairs.	20-30 minimum			

Standards and Guides

Table G2.7. STANDARDS AND GUIDES			
Standard & Guide	Standard & Guide Description	Compliance	Remarks
ALL RFSS SPECIES			
S-WL-5	If negative impacts to sensitive species cannot be avoided, management activities must not result in a loss of species viability forest-wide or create significant trends toward federal listing.	<u>YES</u> NO NA	Continue to implement at Project Level
G-WL-11	Avoid or minimize negative impacts to known occurrences of sensitive species.	<u>YES</u> NO NA	Continue to implement at Proj Level
G-WL-12	Minimize negative impacts to known sensitive species from management activities that may disturb pairs in their breeding habitat during critical breeding season (varies by species). Meeting G-WL-11 and -12 will involve diverse management approaches that depend on species' habitat requirements and distribution, individual site conditions, and expected management impacts. These include two basic and complementary strategies: a. Landscape level or coarse filter management strategies may allow negative modifications of some portions of sensitive species habitat as long as overall objectives for habitat amount, quality, and distributions are generally met. b. Site level or fine filter management strategies may warrant protections of known individual sensitive species locations or high quality potential habitat.	<u>YES</u> NO NA	Continue to implement at Project Level
THREE TOED WOODPECKER			
G-WL-17	Protect known sites within a 200-foot radius surrounding nest sites until young have fledged.	<u>YES</u> NO NA	Continue to implement at Project Level
G-WL-18	Where ecologically appropriate, retain 6-10 jack pine per acre in even-aged regeneration harvest in mixed conifer stands.	<u>YES</u> NO NA	Continue to implement at Project Level
NORTHERN GOSHAWK			
S-WL-10	At northern goshawk nest sites with an existing nest structure, prohibit or minimize, to the extent practical, activities that may disturb nesting pairs in an area of 50 acres minimum (860 ft. radius) during critical nesting season (March 1 – August 30). At northern goshawk nest sites in an area of 50 acres minimum (860 ft. radius), to the extent practical, allow only those activities that protect, maintain, or enhance high quality habitat conditions: 100% mature forest (>50 yrs old) with continuous forest canopy (>90% canopy closure) and large trees with large branches capable of supporting nests.	<u>YES</u> NO NA	Continue to implement at Project Level
G-WL-22	Within northern goshawk post-fledging areas, minimize activities, to the extent practical, that may disturb nesting pairs during critical nesting season (March 1 – August 30) and, to the extent practical, within a 500 acre area encompassing all known nest areas within the territory: Maintain suitable habitat conditions on a minimum of 60% of the upland forested acres in post-fledging areas. Suitable habitat: jack pine and spruce/fir forest types >25 years and all other forest types >50 years with semi-closed to closed canopy (>70%). Aspen and birch forest types 25-50 years may be considered suitable if field review verifies that foraging habitat trees average 50 feet tall and canopy closure is 50-70% or greater.	<u>YES</u> NO NA	Continue to implement at Project Level

Table G2.7. STANDARDS AND GUIDES

Standard & Guide	Standard & Guide Description	Compliance	Remarks
BLACK TERN			
G-WL-16	Management activities, especially prescribed fire, that may negatively impact nesting habitat in the short term in order to restore future suitable habitat, should maintain adequate undisturbed nesting habitat.	YES NO NA	Continue to implement at Project Level
GREAT GRAY OWL			
G-WL-14	Allow, to the extent practical, only activities that protect, maintain, or enhance site conditions within 660 feet of a known nest site.	YES NO NA	Continue to implement at Project Level
G-WL-15	Minimize activities that may disturb nesting pairs during the critical nesting season (March 1-June 1).	YES NO NA	Continue to implement at Project Level
BOREAL OWL			
S-WL-6	Prohibit management activities within 300 feet of known nest sites.	YES NO NA	Continue to implement at Proj Level
G-WL-13	Minimize activities that may disturb nesting pairs during critical nesting season (March 1-June 1).	YES NO NA	Continue to implement at Project Level
BUTTERFLIES			
S-WL-7	Allow only those mgt activities that protect, maintain, or enhance known locations for: Jutta arctic, taiga alpine, Freija's grizzled skipper, and Nabakov's northern blue.	YES NO NA	Continue to implement at Project Level

(4) Necessary Follow-up and Management Recommendations

Monitoring Driver	Follow-up Actions
O-WL-1 & 2 Landscape Ecosystem Objectives for Mgt Indicator Habitats (MIHs) 1-9 (forest types/ages)	Continue to monitor objectives annually based on 1) annual condition of MIHs on the ground (by way of a look at a "snapshot" of data at the end of each fiscal year) and 2) annual snapshot of MIHs plus conditions that would result from all other unimplemented decisions at the end of each fiscal year. <u>Supporting rationale.</u> Based on FY05 data, trends for MIHs are generally moving in the direction of Forest Plan objectives when compared to the conditions present at the time the ROD was signed. Changes between the FEIS condition and condition after the ROD was signed are due to: 1) changes made between the Landscape Ecosystem GIS map used in FEIS Dualplan analysis and a new Landscape Ecosystem map developed for practical implementation of the Plan (issue described in Vegetation section of Monitoring Plan); 2) ongoing improvements to vegetation inventory; or 3) additional vegetation projects implemented after data for FEIS was frozen in the winter of 2004. These are changes that were anticipated in the Forest Plan (described on page 2-55 in Vegetation Overview). At year one of implementation, no substantial concerns related to objectives are identified.
O-WL-18	In partnership with others, continue to identify, learn about, and appropriately manage and monitor RFSS and their habitats. This action also addresses all other RFSS objectives (O-WL-19 to O-WL-30). <u>Supporting rationale.</u> RFSS' distribution, populations, and habitat requirements at landscape and site levels are not fully understood. Gaining information is important to ensure effective management.
O-WL-26 & 27	Expand butterfly inventory, based on areas likely to experience gypsy moth outbreaks. <u>Supporting rationale.</u> As outbreaks of the non-native invasive species gypsy moth become more common and widespread, treatments with Btk (a bacterium toxic to gypsy moth and to other butterfly/moth species) may increase and threaten sensitive butterflies. To manage to maintain or protect rare butterflies it is important to improve our understanding of their distribution and habitat use.

Monitoring Driver	Recommended Management Actions
O-WL-1 and -2 Objectives for Management Indicator Habitat 9 Lowland Black Spruce/Tamarack	Evaluate the feasibility of establishing permanent bird monitoring sites in lowland conifer MIH 9. <u>Supporting rationale.</u> Bird surveys associated with MIH 9 are currently inadequate since long-term song-bird monitoring plots on the Superior include very few plots in this MIH. Because of overall Forest Plan objectives for increasing vegetation management to create young and retain old growth MIH 9, Monitoring songbirds is an efficient and cost-effective way to track species associated with MIH 9.

(5) Collaborative Opportunities To Improve Efficiency And Quality Of Program

Species	Collaborator/Partner	Monitoring Activity	Accomplishment
Heather Vole	Dr. F.J. Jannett, Jr., private researcher	Heather vole inventory	Annual unpublished reports
	Minnesota NHP	NHIS database	NHIS database
3 Toes Woodpecker	Minnesota NHP	NHIS database	NHIS database
Olive Sided Flycatcher	Minnesota NHP	NHIS database	NHIS Database
	NRRI	Breeding Bird Monitoring	Annual Report
Black Throated Blue Warbler	Minnesota NHP	NHIS database	NHIS Database
	NRRI	Breeding Bird Monitoring	Annual Report
Connecticut Warbler	Minnesota NHP	NHIS database	NHIS Database
	NRRI	Breeding Bird Monitoring	Annual Report
Wood Turtle	Minnesota NHP	NHIS database	NHIS database
Butterflies	Minnesota NHP	NHIS database	NHIS database
Peregrine Falcon	Minnesota NHP	NHIS database	NHIS database
Sharp Tailed Grouse	Minnesota NHP	NHIS database	NHIS database
Yellow Rail	Minnesota NHP	NHIS database	NHIS database
Wilson Phalarope	Minnesota NHP	NHIS database	NHIS database
Great Grey Owl	Minnesota NHP	NHIS database	NHIS database
Boreal Owl	Minnesota NHP	NHIS database	NHIS database